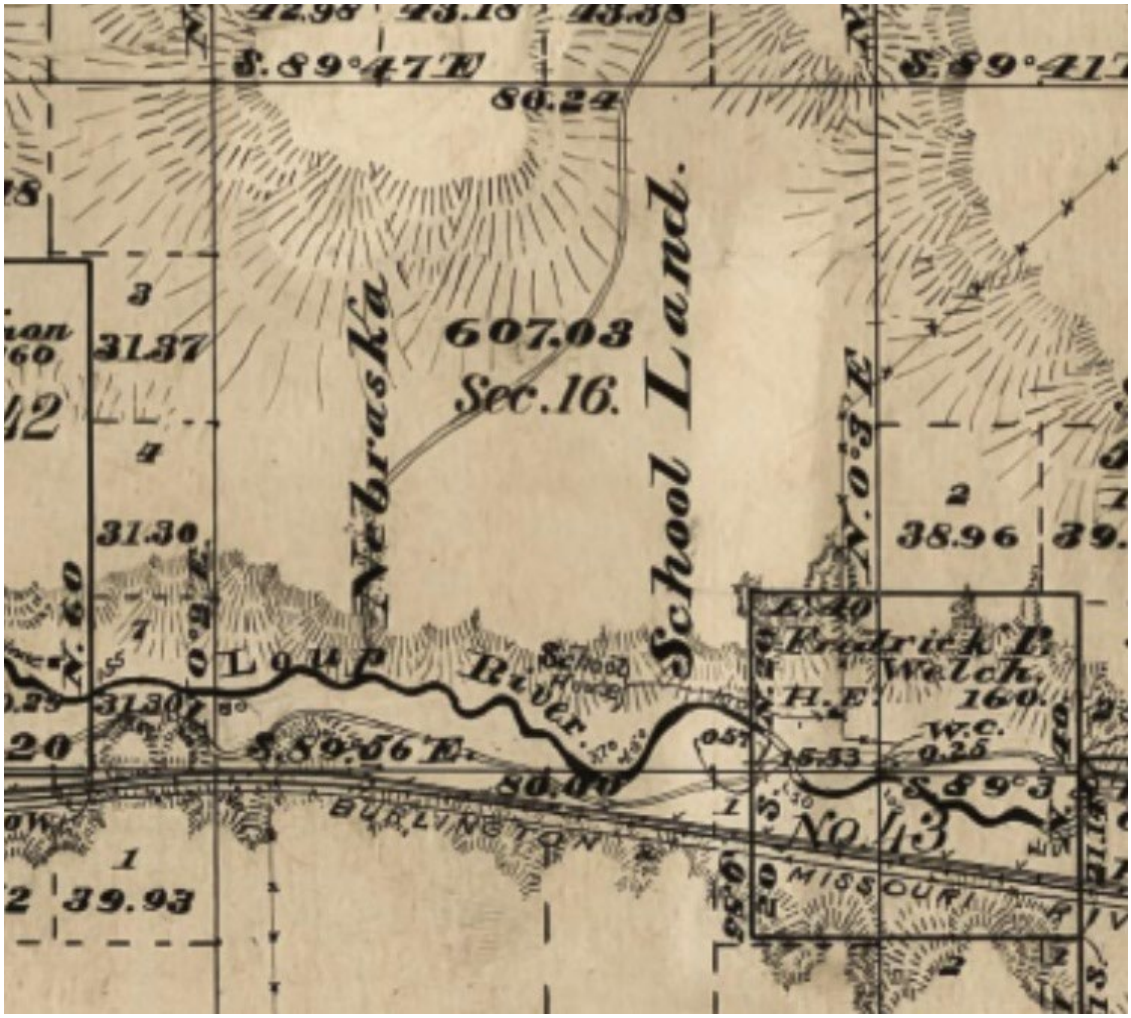
Many Virtues, One Great Vice: Public School Finance in America, 1607-1900

D. Roderick Kiewiet

California Institute of Technology

Chapter Five
Land for Schools



Fredrick Welch's Nebraska Homestead,
Partially Located in Section 16

Section 16 and the Public Domain

When Congress began granting section 16 to new states as they entered the Union, there were great expectations regarding what these lands would yield. Early dispatches from west of the Appalachians proclaimed that the climate was congenial, water and mineral sources were abundant, and the fertility of the soil was not to be surpassed. These upbeat reports "…made economic development on an unprecedented scale seem possible, even natural" (Onuf 1986, p. 182). The land grants "…seemed to be a free good derived from an apparently inexhaustible public domain" (Tyack and James 1986). In the case of the first state to acquire this land from the federal government, Miller (1920) writes that "It was evidently the original opinion of many of the settlers in Ohio, and perhaps the design of Congress, that these land grants, if properly managed, would support public schools without a tax upon these citizens" (p. 9). They foresaw section 16 land generating enough revenue to fully support public education far into the future— "a heritage not only to the children of the present but to those of generations yet unborn" (Bruce 1920, p. 409). In the realm of public finance, endowment funding, which is what the section 16 land promised to provide, is the *optimum optimorum*. It enables government to bestow benefits upon its citizens without all the unpleasantness involved in extracting from them the taxes needed to pay for those benefits. What a wonderful thing this is contemplate.

As people should have known at the time, these Panglossian forecasts were expressions of irrational exuberance. Back-of-the-envelope calculations would have revealed that proceeds from the section 16 grants could cover a significant portion of the cost of public schooling—at least for a while—but not all of it. By most accounts, however, actual results ranged from disappointing to disastrous. According to Kaestle, "the particular system of support through school lands was bedeviled by indifference, fraud, and delay" (1988, p. 62). Dick (1970) reports that "Unfortunately, most of the states…frittered it away and their schools received only a small proportion of the benefits intended" (p. 120). At the end of World War I, State Treasurer Henry Johnson complained that:

> If the State of Wisconsin had not practically given away its valuable school lands years ago, we would not have to raise any school taxes for generations to come. In years gone by the State sold hundreds of thousands of acres of fine timber land for a mere song. Had that timber been preserved by the State it would now pay the entire amount due the Wisconsin soldiers under the bonus law, pay all the cost of soldier education under the Nye bill, and in addition the interest on the balance would maintain the schools of the State for generations to come without raising one cent for school purposes by taxation (quoted in Keith and Bagley 1920, p. 32).

Heidelberg (1992) is also critical of how the school land grants were managed. Although the states "…have a fiduciary duty to use the trust property to maximize the benefit to the beneficiary of the trust," they "have squandered much of their property in sales to individuals for grossly inadequate consideration" (p. 1586-87).[1] Some states have filed lawsuits to have sales contracts voided and school land returned to them for this reason but, as Heidelberg observes, this is usually a lost cause. In short, historians, legal scholars, and public figures have all concluded that section 16, a precious birthright bestowed upon the states by the federal government, was time after time sold off for far less than what it was worth. As a result, public schools received only a pittance from what should have been a significant source of revenue.

Although the failure of the school land to yield much revenue is often blamed upon the malfeasance of those put in charge of selling it, a more compelling explanation is to be found in the Federal Competition Hypothesis. How was it that Wisconsin had sold "hundreds of thousands of acres of fine timber land for a mere song," as Treasurer Johnson alleged? According to Patzer (1924), it was because of federal competition: "The United States government owned the lands of Wisconsin, except those granted the state for educational and other purposes…With nearly 29,000,000 acres of such government lands available for actual settlers, land speculators, and future lumber barons, [it was] the policy of the state of also hurriedly throwing the school and university lands upon the market at ruinous prices, in competition with the sale of government land" (pp. 109-110).

Section 16 was just one of 36 in a township. The federal government, at a headlong pace, was unburdening itself of the other 35. It is a simple principle of economics that you cannot sell something for more than what your competitors are willing to sell it for. It stands to reason that if the federal government was selling land in the public domain at bargain basement prices, state and local governments would be unable to lease or sell section 16 at anything other than bargain basement prices. The Federal Competition Hypothesis, then, is a pair of interrelated propositions: 1) the federal government, which retained the lion's share of land in the public domain, sold it at very low prices; 2) state and local authorities could not sell section 16, or obtain an equivalent amount of revenue from leasing, for prices higher than what the federal government was charging.

When undertaking a new research project, it is best to begin by reviewing previous research. In the matter of section 16 land sales, it turns out that very little previous research has been conducted. To be sure, there are many historical treatments which, like Patzer's, assert that section 16 was sold for far less than what it was worth and that competition from federal land sales was the reason why. The only systematic analysis of section 16 land sales data that we were able to locate, however, was Swierenga's (1968), based upon Royce Cession 262—an area, comprising about a third of the future state of Iowa, that the Sauk and Meskwaki tribes signed over to the federal government in 1842. The presumption that school land was so often sold or leased for far less than its true value is thus based almost entirely upon the pronouncements of historians and public officials, some of whom we have just now cited.

But what is the empirical status of these assertions? It is possible, even likely, that the conventional wisdom has it right. But it might also be true that the Federal Competition Hypothesis is not in accord with what happened, and that the states, or at least some of the states, were able to garner significant amounts of revenue from section 16.

In order to assess the first part of the Federal Competition Hypothesis it is necessary to determine how much land the federal government sold, when it was sold, where it was

located, and the prices that it sold for. It is also important to identify those factors that had the greatest impact upon sales volume and sales prices. This necessitated the assembly of a comprehensive, state-level dataset on all federal land sales conducted by the General Land Office, from the time sales began in the early 19th century until the advent of the Civil War.

Evaluating the second part of the hypothesis—that state and local authorities could not sell or lease section 16 for more than what the federal government was charging for it—requires us to ascertain how individual states disposed of the land that had been granted them. It was possible to collect extensive data on school land sales in several states and more fragmentary data on sales in a few others. As the following analyses reveal, the ways in which the section 16 grants were managed and the outcomes that were achieved differed markedly from one state to another. There were, at the same time, important commonalities as well.

Federal Land Sales

The most significant feature of the public domain was its size. At the beginning of the 19th century, it included 233 million acres in the Northwest Territory and Old Southwest. The Louisiana Purchase added another 523 million acres. To people at the time, it seemed boundless. In a competitive market, massive supply equilibrates with demand at extremely low prices. The sole proprietor of all this land, however, was the U.S. federal government. If it were able to exercise monopoly power, the government could have released land onto the market at whatever rate maximized the net present value of sales revenue. By all accounts, this rate would have been slow. As Anderson and Martin (1987) explain, "A revenue-maximizing federal land policy would have proceeded by opening up only land on the margin of present development and holding land farther West until development expanded" (p. 910). This line of reasoning was the rationale for the clause in the Land Ordinance of 1785, alluded to earlier, which called for the government to reserve sections

8, 11, 26, and 29. Doing so would allow the government to hold on to these tracts for the time being, and to sell them later at higher prices after surrounding land had been settled and developed.

Many of the country's founders favored a slow, gradual pace of land sales, but revenue maximization was not the only reason why. Hamilton's plan for growth in manufacturing required a large workforce concentrated in the Northeast and Mid-Atlantic states. This supply of labor would dissipate if too many people struck out for the frontier too soon. George Washington worried that a rapid influx of population into the remote regions of the West posed a threat to the political stability of the new nation. With only weak connections to the Eastern states, these settlers might become "A different people from us, have different views, different interests," and choose to align with the Spanish or British authorities still present in those areas instead of with the United States (Van Atta 2014, p. 51). The first Secretary of War, Henry Knox, warned that premature and unorganized migration westward would provoke war with the indigenous Indian tribes, and that it would be impossible for the new government of the United States to raise a military force large enough to protect the settlers (Frymer 2014).

In the early years of its existence, however, the federal government did not behave as a price-discriminating monopolist and privatize the public domain at a slow deliberate pace. The main reason it did not, and could not, was because of what was noted in the previous chapter: it did not have a monopoly on unsold land. The federal government owned everything in the Northwest Territory, the Southwest, and, after 1803, the Louisiana Purchase, but vast areas of the original states were still unsettled and unclaimed. Large swaths of land in the new states of Kentucky and Tennessee, which had been cleaved off from existing states, were also available for sale. In the early decades of the new nation's existence, settlers from the East could find plenty of land that was in much closer proximity to them than the federal lands that lay in the West.

Public officials in these states, in most cases faced with a heavy burden of debt accrued from the War for Independence, were determined to get this immense amount of land into private hands as quickly as possible. Doing so would get it settled and developed as quickly as possible and placed on the tax rolls as quickly as possible. They set prices accordingly, and, with such an immense quantity of land available, these prices were very low. As Lebergott (1984) observes, "When the United States began selling off the public domain, the competition of these many other sellers had to be considered" (p. 78).

After removing the Loyalists who had settled along the Penobscot during the War, the General Court of Massachusetts ordered the land there to be surveyed and put up for sale at a minimum price of six shillings (60 cents) per acre. Those who arrived within the next year could obtain another 100 acres for free, provided they cleared four acres of timber a year for the next four years (*Resolves of the General Court of the Commonwealth of Massachusetts*, 1784, pp. 139-140). Little interest was evinced at that price point. In 1791 the state of Massachusetts sold two million acres to Henry Jackson of Boston and Royal Flint of New York for ten cents an acre, and in 1793 sold over two million acres for 12.5 cents an acre. By 1820 four million acres in the District of Maine had been sold at an average price of 20 cents an acre. Massachusetts officials also had to address a problem that would dog federal and state land sales during the entire era of western settlement. Many settlers had arrived there and started farming the land before it had been surveyed and sold, and, for a variety of reasons, evicting them was not a realistic option. With no better options available, the General Court allowed those inhabitants who had settled upon public land before sales began to receive a deed to 100 acres in return for a payment of five dollars (Wildes 1932).

As noted in the previous chapter, in 1784 the New York state legislature ordered the millions of acres of "waste and unappropriated lands" in the state that remained unsold and unsettled be surveyed into townships. and sold for one shilling (12 cents) an acre (*Laws of the State of New-York, Passed at the Seventh Session of the Legislature of Said*

State, 1784, pp. 720-726). The State Treasurer, however, was also to accept at face value bills of credit that the state had issued during the War for Independence. Other forms of debt, such as quartermaster certificates could also be used for payment, but loan certificates issued by the Continental Congress were to be honored only at their value in specie (i.e., gold or silver), based upon the Continental scale of depreciation. Sowers (1914) calculates that the State of New York ended up selling over five million acres at an average price of 18.5 cents an acre. According to Lebergott (1984), some of this land was obtained for as little as 2.3 cents an acre.

In 1681, in return for liquidation of an outstanding loan of £16,000, King Charles II granted William Penn the area in the New World that became eponymously known as Pennsylvania, along with the future state of Delaware. Totaling more than 45 million acres, the grant made Penn the largest private landowner in the world. John Penn, grandson of the founder, was governor of Pennsylvania when hostilities broke out between Britain and the American colonies, He sought to remain neutral, but his failure to call an assembly to appoint delegates to the First Continental Congress alienated those on the patriot side. Justifying their action with the claim that the Penn proprietorship was no longer compatible with "…the safety, liberty, and happiness of the good people of the commonwealth, who, at the expense of much blood and treasure, have bravely rescued themselves and their possessions from the tyranny of Great Britain," the General Assembly seized 24 million acres from the family's possession and transferred title to the state (*Laws Enacted in the First Sitting of the Fourth General Assembly of the Commonwealth of Pennsylvania*, 1779, pp. 235-263). In return for swearing loyalty to the new government of the Commonwealth, the Penns were allowed to keep five million acres and received £130,000 (about one half cent an acre) in compensation (Treese 1992).

As in Maine and New York, the millions of acres of land that were now for sale in Pennsylvania attracted the attention of rich investors. Casting an eye to the future, these speculators believed that immense profits could be had by obtaining large quantities of

land on the cheap, subdividing it, and selling it off later at much higher prices. The most prominent public figure participating in the ensuing land grab was Robert Morris, who, as Superintendent of Finance during the War for Independence, had used his own credit to keep funds flowing to Washington's forces. Others included George Clymer, one of six signers of both the Declaration of Independence and the Constitution and member of the Treasury Board of the Congress of the Confederation, and the extremely wealthy John Nicholson, Comptroller General of Pennsylvania from 1782 to 1794. Drawing a distinction between the public interest and one's own interests was an idea, at least for these men, whose time had not yet come.

Morris and other investors were able to obtain land for very low prices because the state government of Pennsylvania was willing to sell it for very low prices. Between 1781 and 1790 the Pennsylvania Land Office took in about $2.25 million from the sale of land, but most all of it was purchased with various forms of public debt issued during the War for Independence, or with some of the £636,000 of new paper currency issued in 1781 and 1785 (Wilkinson 1958). In an effort to spur the pace of sales, the General Assembly enacted legislation in 1792 that cut the price of "vacant lands." The minimum prices they set ranged from six cents an acre in the tract purchased from the Indians in 1784 and where most of the good land had already been taken, up to 18 cents an acre for land north and west of the Ohio and Allegheny Rivers (Mitchell and Flanders 1909). In 1793 John Nicholson transferred $56,538 to Robert Morris in return for 521,600 acres of land. This works out to about eleven cents an acre, which is consistent with the prices that Pennsylvania was charging (Wilkinson 1958).

Morris and other investors acquired large holdings themselves, but later formed several land companies—today they would be known as real estate investment trusts—to get control of even more. The largest of these was the North American Land Company, created in 1795 by Morris, Nicholson, and Jacob Greenleaf, which at its peak held over six million acres in Pennsylvania and several other states. They sold shares in the company

for $100 each, backed by 200 acres of land (or so they said) and promised a guaranteed annual rate of return of six percent for fifteen years. Morris and his partners believed that the Company could resell land for much more than they paid for it, easily make the required payments to their investors, and thus generate massive profits for themselves. Given the very low prices at which they obtained land, the business model was sound—at least in principle. When the market for land turned soft the company became overextended. It was mired in litigation over competing land claims, fell in arrears on taxes, failed to pay shareholders the promised dividends, and in the end went bankrupt. Once the richest men in the America, Morris and his partners were off to debtors' prison, and they all died penniless (Sakolski 1932).

Another state that had millions of acres of vacant land was North Carolina. To this total were huge tracts of land that were confiscated from Loyalists during the War for Independence. Just as the revolutionaries in control of Pennsylvania had expropriated the Penn family's land, in 1777 the General Assembly of North Carolina ordered the seizure of "…all the lands, tenements, hereditaments, and moveable property" of those were deemed to have aided and abetted the enemies of the United States (*Acts of the General Assembly of North-Carolina*, 1777, pp. 243-44). This included some 24 million acres that Robert, Earl Granville had obtained title King George II had awarded title to in 1742 to and passed on to his heirs (Mitchell 1993).

With war still raging and Cornwallis's forces active in the state, what little land that was sold brought in only a trickle of revenue. One wealthy planter complained that commissioners had sold his lands for "…at a fifth or sixth part of their real value" (Harrell 1926, p. 584). The sale of Loyalist property picked up dramatically after the War ended, as buyers became confident that the patents the state issued for the land were Land in North Carolina could still be had, however, at fire sale prices. In the first few years of Independence the state collected £583,643, but some of this amount was derived from the sale of slaves and other chattel property. Like other states, North Carolina accepted

bills of credit and other debt instruments that had been issued during the War. As a consequence, according to Harrell, "…it is impossible to place any specie value upon the receipts" (p. 587).

The Federal Competition Hypothesis holds that the price that state and local governments could obtain for section 16 was bounded by the price at which the federal government sold land. Ironically, a major constraint on what the government of the newly independent United States could get for its land was the willingness of individual states to sell their land for pennies an acre.

Initial Sales by the Federal Government

The Confederation Congress, like the individual states, was what real estate agents call a motivated seller. During the long fight against the British, the United States collectively had taken on prodigious amounts of debt. The Congress was hanging on by its fingernails and hoped that quick sales of land would provide the funds needed to keep their creditors at bay. As Knight (1885) observes, "The western lands were looked upon by all the financiers of the period as an asset to be cashed at once for payment of current expenses and extinguishment of the national debt" (p. 10).

By 1788 the Public Land Survey had platted out an area known as the Seven Ranges in eastern Ohio, amounting to over 1.6 million acres, and the Congress hoped to garner a quick infusion of revenue from selling this land. The Land Ordinance of 1785 had set a minimum price of $1.00 per acre, with half the land to be sold in the form of entire townships (23,040 acres), the other half as individual 640-acre sections. Congress was able to offer a deep discount, however, by accepting payment in the form of liquidated debt certificates, which could be obtained at prices far below face value. There was still little demand for this land. Few sales were consummated, netting only $72,974 (Howe 1907). The largest purchase, nearly eighteen square miles, was made by Robert Johnston, who served as Georgia's representative on the surveying team (Pattison 1959).

The Confederation Congress then sought to make a single massive sale that would yield substantially more revenue. As was touched upon in the previous chapter, they began negotiating a private placement offering of up to 5 million acres, just across the Ohio River and southwest of the Seven Ranges, to the Ohio Company of Associates. The company was founded in 1786 by Continental Army generals Rufus Putnam and Benjamin Tupper, who brought on Manasseh Cutler and Samuel Parsons as directors. Its 250 or so investors included dozens of major figures from the War for Independence and the early republic, most notably two members of Washington's first cabinet—Secretary of the Treasury Alexander Hamilton and Secretary of War Henry Knox (McCullough 2019).

Just how desperate Congress was to make a deal is readily apparent. Although he had kept such a provision out of the Land Ordinance of 1785, James Madison and the committee in charge of negotiations acquiesced to the Company's demand that the federal government set aside land, and thereby forego sales revenue, for churches as well as for schools. While section 16 in each township was reserved for the schools, section 29 was ordered "to be given perpetually for the purposes of religion" (Bioren *et al.*, 1815, p. 573). Then there was the price. Congress chose once again to disregard the strictures of the Land Ordinance of 1785 and permitted the Company to pay for one seventh of its purchase with military warrants that they had purchased, on the cheap, from war veterans. Depreciated certificates of liquidated debt, accepted at face value, covered most of the rest of what was due. These and other concessions allowed the Company to buy 1.5 million acres of land in southeastern Ohio for about 9 cents an acre.

Although the sale ended up not bringing in much revenue for the United States, it did yield a policy outcome of immense importance. In his draft of the Ordinance of 1784, Jefferson included language that would later form the basis of the Thirteenth Amendment: "After the year 1800, of the Christian era, there shall be neither slavery nor involuntary servitude in any of the said states, otherwise than in punishment of crimes whereof the party shall have been duly convicted to have been personally guilty." Southerners opposed

this proposal. So did many northerners, such as Rufus King and Thomas Pickering, because it did not prohibit slavery immediately. The Congress rejected this section by the narrowest of margins. If New Jersey had had a representative at the Congress, or one member from either Virginia or North Carolina changed their mind, it would have been accepted (Merkel 2008). The Ohio Company nonetheless demanded that slavery be prohibited in the lands they were purchasing. In order to close the sale, Congress agreed to add Article VI to the Northwest Ordinance of 1787, which banned slavery and involuntary servitude in the Territory.

The Ordinance sought to mollify the southern states by including a fugitive slave clause, authorizing runaway slaves who had made their way into the Territory to be captured and retuned to their owners. Article VI, moreover, was not immediately effective in banning slavery in the Northwest Territory. Those who acquired land in the Virginia Military District of Ohio asserted that just as slavery was legal in Virginia, so should it be there. Early settlers to what became the Indiana and Illinois Territories brought more than a thousand slaves with them. The first governor of the Indiana Territory, William Henry Harrison, himself a slaveowner and strong supporter of the institution, petitioned Congress to repeal Article VI (Owens 2007). When Congress proved unresponsive, he and the territorial legislature then sought to circumvent Article VI by banning the purchase of new slaves and emancipating slave children, but allowing those who already owned slaves to keep them. They also devised a devious procedure under which slaves then living in the territory could "freely" choose to accept an indenture of between 40 and 90 years, or be sold and sent back to one of the slave states (Finkelman 1989).

In the end, Indiana, Illinois, and the other states formed in the Northwest Territory abolished slavery in their state constitutions because the overwhelming majority of those who settled there came from the North and opposed it. If nothing else, however, Article VI served to create a great deal of uncertainty over the status of slavery (Owens 2007). It thereby discouraged slaveowners from moving into the Northwest Territory and the states

that were formed from it, and so was instrumental in bringing about their admission to the Union as free states.

After finalizing the agreement with the Ohio Company, in 1788 Congress offered similar terms to John Cleves Symmes in the sale of a million acres between the Great Miami and Little Miami Rivers (an area that includes the present city of Cincinnati). Symmes failed to fulfill his contractual obligations for the purchase of this land, which he nonetheless persisted in selling to unwary buyers. In what ended up being a messy transaction that took several years to consummate, he acquired 311,000 acres at the specie value of 15 cents an acre (Hurt 2003).

After the new Constitution was ratified, state and federal debts were renegotiated on favorable terms. The establishment of the Bank of the United States and adoption of a sound national currency facilitated economic growth, which picked up markedly (Irwin and Sylla 2011). Tariff revenue flowed into the Treasury at a greater rate than had been forecast, and the improvement in the government's balance sheet engendered confidence in its stability and creditworthiness. Now that the dire fiscal crisis of the early days had passed, it was possible for the government to take a longer view, and to adopt measures that would capture significant amounts of revenue from sale of the public domain (Grubb 2011).

Several proposals were made in Congress to set a minimum price, all far higher than what either the Ohio Company or Symmes had paid. A sign that better prices could be gotten came in 1792, when the government managed to sell the 200,000-acre Erie Triangle to the state of Pennsylvania for 75 cents an acre (Bates 1884).[2] In 1795 the Connecticut Land Company purchased a large section of the Western Reserve for $1.2 million, which works out to be 41 cents an acre (Hatcher 1991). The amount of land sold in the Western Reserve was equivalent to 94 percent of the area of Connecticut itself.

After due consideration, in 1796 Congress approved the Land Law which called for the public domain to be henceforth auctioned off to the highest bidder, in lots of at least one

section (640 acres) in size, at no less than $2.00 an acre (*U.S. Statutes at Large, 4th Congress 1st Session,* 1796, pp. 464-469). At a time when laborers earned 60 cents a day in Vermont and a dollar a day in Philadelphia, $2.00 an acre would seem to be an attractive price (Adams 1970). As it turns out, however, it was much higher than what the market would bear. Over the next four years the federal government collected only $101,182 on the sale of a little over 50,000 acres (Gates 1968). Studies by Danhof (1941) and Lebergott (1985) indicate that the $2.00 per acre minimum price was not the only reason why so few sales occurred, as the cost of acquiring land was only a small share of the investment required to bring virgin prairie or woodland into production. What discouraged most potential buyers was instead the requirement to buy at least 640 acres. Few people at the time could afford to lay out the $1280 needed to buy an entire section of land and to then bear the additional costs involved in turning it into a working farm. Price was an issue, however, as the federal government continued to face fierce competition in the real estate market. Unsold land in the existing states could be obtained for lower prices, as well as from private investor-developers who had obtained vast amounts of land in the Ohio military districts. It was also possible to purchase land from them in smaller lots, to buy on credit, and to even make payments in the form of rye, whisky, cows, or bacon (Gates 1968)

In an effort to spur sales, Congress approved the Land Act of 1800, sponsored by William Henry Harrison, the 27-year-old delegate from the Northwest Territory. The minimum price remained $2.00 an acre, but the minimum amount that could be purchased was reduced to half a section (320 acres). More importantly, purchasers could now buy on credit. An earnest payment of 5 percent was required up front, an additional 20 percent due within 40 days, with the balance paid in annual installments of 25 percent each. An interest rate of 6 percent per year was charged on remaining principal. Legislation enacted four years later lowered the minimum acreage requirement to a quarter section (160 acres) and offered buyers an 8% discount, i.e., $1.64 an acre, if they paid in cash (*U.S. Statutes at Large, 6th Congress 1st Session,* 1800, pp. 73-78).

Sales picked up somewhat in response to these more favorable terms, but the down payment of $80 (25% down on 160 acres) was still beyond the reach of many. There was also land still available at lower prices in the existing states, less distant from the Eastern Seaboard and closer to civilization. The federal government sold only 5 million acres over the next 14 years, netting the Treasury $7.2 million. Averaging a bit over half a million dollars a year, this amounted to only 3% of the $235 million that the federal government collected from tariffs during the same time period (Irwin 2003).

The policy of selling land on credit was premised on the belief that a hardworking farmer and his family would earn enough from their crops and from their labor to have little difficulty in paying off their loan over a four-year period. Many buyers nevertheless fell behind in their payments. The 1800 Land Law empowered the government to seize land from those who were in arrears and to sell it for the balance remaining on the loan, but there was little desire in Washington to carry out this remedy. Besieged by petitions for debt relief, Congress voted in 1806 to place an 18-month moratorium on the forfeiture provision for those who were living on the land they had purchased (*U.S. Statutes at Large, 9th Congress 1st Session,* 1806, pp. 378-379). Legislation approved in 1809 to grant buyers a two-year extension on their payments was followed by another three-year extension in 1812 (*U.S. Statutes at Large, 10th Congress 2nd Session,* 1809, pp. 533-534; *U.S. Statutes at Large, 12th Congress 1st Session,* 1812, p. 712).

Delinquencies nevertheless reached crisis proportions a few years later. Trouble began in 1815 with the largest volcanic explosion in recorded history. Mount Tambora in the Dutch East Indies sent into the atmosphere twelve cubic miles of ejecta that blocked sunlight from reaching the earth's surface. In 1816, known as the Year without a Summer, erratic weather patterns caused crop failures throughout Europe and poor yields in the eastern United States.[3] Although the famine that Jefferson feared would ensue was averted, the tripling of grain prices generated strong demand for land (Skeen 1981). Cotton prices also rose to high levels. Fueled in part by the government's credit system,

western land sales boomed. The government sold over 3.6 million acres between 1816 and 1817 and over 6.4 million acres between 1818 and 1819.

Great booms are often followed by great busts, and that is what happened here. Commodity prices fell after European and eastern agriculture recovered and a large increase in cotton supply hit the market. Credit evaporated when the banking crisis known as the Panic of 1819 took hold (Browning 2019). Public land sales collapsed. Many of those who had purchased land on credit fell into default. Still reluctant to eject anyone from their farms and homes, Congress voted once again in 1819 to suspend seizure and resale of land held by those who were behind in their payments *U.S. Statutes at Large, 15th Congress 2nd Session,* 1819, pp. 509-510).[4] By 1820 the federal government had sold $46.6 million worth of land, but collected only $20.8 million in revenue.

Legislation enacted in 1820 put an end to credit sales, but it also slashed the minimum price to $1.25 an acre (*U.S. Statutes at Large, 16th Congress 1st Session,* 1820, pp. 566-567). Sales began to quicken, and during the 1820s the General Land Office sold an average of a million acres per year. Still, this was a modest increase at best. At that rate it would take the federal government another 700 years to sell off the public domain—a projection based on the counterfactual assumption that the U.S. would acquire no additional territory west of the Louisiana Purchase.

Let us summarize the main outlines of federal policy in the early years of the Republic. The Land Law of 1796, intended to sell land in the public domain at an orderly pace for good prices, succeeded only in driving sales volume down to very low levels. Measures adopted after that—the authorization of credit sales in the Land Law of 1800, the steady pattern of forbearance shown to those who were delinquent on their loan payments, and the dramatic reduction in the minimum auction price made in 1820—were all intended to boost sales. Nonetheless, during the first part of the 19th century the tempo of sales, except during the speculative bubble of 1816-1819, remained moderate to downright slow. Why,

then, did land not sell more quickly, given the favorable terms that federal land policy was offering?

Resistance to Conquest

Major reasons why federal land sales were slow to get underway are to be found not in official acts and pronouncements, but rather in the facts on the ground. The first such fact is that several logistical and administrative tasks needed to be accomplished before the government could put public land on the market. The land needed to be surveyed, mapped, and platted. The General Land Office then needed to establish branch offices throughout the West in order to advertise sales, hold auctions, record transactions, and issue the patents by which title to the land was secured (Rohrbough 1968).

The initial step of sending out surveying teams was impeded, at least in the early years of the Republic, by fierce resistance put up by the Indians. Britain, France, and Spain may have ceded their territories in the New World to the United States, but the peoples who had been there long before the Europeans arrived most certainly had not. Several tribes sided with the British against the Continentals during the War for Independence, and Britain continued to ship weapons to them even after the Treaty of Paris was signed (Van Atta 2014). Surveying was nasty, dangerous work to begin with. Surveying crews often succumbed to dysentery or malaria, which were endemic diseases throughout North America in the early 19th century (Dailey 2004).[5] Few men were willing to head into the wilderness to face the additional risk of getting captured or killed by an Indian raiding party. The first work of the Public Land Survey, the Seven Ranges of Ohio, was delayed for two years after the surveyors withdrew to Pittsburgh, having received "disagreeable intelligence" regarding Indian depredations in the area (Pattison 1959).

The influx of settlers into the Seven Ranges and the tract purchased by the Ohio Company came to a standstill in 1791, after warriors of the Miami Confederacy decimated the army, led by the hapless General Arthur St. Clair, at the headwaters of the Wabash River.

The Indians called their victory the Battle of a Thousand Slain—only a slight exaggeration of the casualties St. Clair's forces suffered (McCullough 2019). Three years later, however, these tribes were defeated at the Battle of Fallen Timbers. Shawnee resistance crumbled after Tecumseh was killed in 1813 (Gaff 2004; Sugden 1985). In the Southwest, the Cherokee, Creek, Chickasaw, Choctaw, and several other tribes held out for as long as they could, but they too were vanquished. Under the terms of the 1830 Indian Removal Act, they were driven to areas west of the Mississippi River (*U.S. Statutes at Large, 21st Congress 1st Session,* 1830, pp. 411-412). Of the 12,000 or so Indians who began the journey, around 4,000 died of disease, malnutrition, and exposure in a series of forced marches known as the Trail of Tears (Woodward 1963). What had been their tribal homelands could now be surveyed, sold, and settled without further threat from the native peoples.

Prior Claims and Fraudulent Practices

Eliminating Indian resistance allowed surveying to proceed at a more rapid pace. In the two decades prior to 1823, the General Land Office was able to get 78 million acres ready to sell. Between then and 1860 it doubled that rate, surveying, mapping, and putting up for auction another 290 million acres—an average of about 7.8 million acres a year. But there were other impediments to federal land sales. One was the nettlesome problem of adjudicating the claims of settlers who had been granted land by Britain, France, or Spain prior to the cession of the Northwest Territory, the Old Southwest, the Louisiana Purchase, and Spanish Florida to the United States. Others asserted that they held title to the land they had purchased from Indian tribes, or at least certain Indian chieftains. These latter claims were ruled invalid in the landmark *Johnson and Graham's Lessee v. William M'Intosh* decision, rendered by the Supreme Court in 1823. Here Chief Justice John Marshall discovered the "discovery doctrine," under which original title to land in the New World resided with the European powers who discovered it. Native Americans possessed usufructuary rights to the land they were living on, but they could not convey title to it.

On the other hand, the discovery doctrine enshrined in this court decision confirmed that title to land that had been conferred by British, French, and Spanish authorities prior to its acquisition by the United States needed to be taken seriously. In 1803 the federal government pledged to confirm such claims, contingent upon the claimant having resided on the land, and being at least 21 years of age or the head of household (*U.S. Statutes at Large, 7th Congress 2nd Session,* 1803, pp. 229-235). Unfortunately, in most cases the deeds, which more often than not involved the most valuable land in the newly acquired territories, were vaguely worded and inconsistent with U.S. property law. Boundaries were often described in even fuzzier terms, and sometimes overlapped with the holdings of other claimants. No small amount of fraud was involved in the assertion of prior claims. Land Office officials charged with the task of sorting out French documents reported that "In a considerable proportion of the cases…we have been presented with forged deeds supported by perjured testimony, conveying the claims thus supported" (Larson 1903, p. 19). One court examined a bundle of 124 claims, written by at most four people, with identical misspellings and grammatical errors in all supporting documents (Dick 1970). The bringing of fraudulent claims was emboldened by the destruction of official French land records in the New Orleans fires of 1788 and 1794 (Gates 1968).

Large claimants retained formidable legal representation. Thomas Hart Benton, Daniel Webster, and other congressmen earned several times their government salaries prosecuting prior land claims in Congress and in the courts. Webster's greatest victory came with the *Mitchel v. United States* decision of the U.S. Supreme Court, which confirmed his clients' claim to around 1.4 million acres in West Florida. In 1804 the principals of Panton, Leslie & Company, later renamed John Forbes & Company, persuaded Creek and Seminole chieftains to transfer this land to them in exchange for wiping out the debts they had accrued at the firm's trading posts. The Mitchels and their colleagues purchased the land from Forbes in 1819 for $111,676 (eight cents an acre). The Mitchels then sought to obtain official recognition of their title to the land. In 1831, after years of inaction and

delay, the territorial court ruled against them on the basis of *Johnson v. M'Intosh*. Webster and his legal team, which included Andrew Jackson's Attorney General John Berrien, argued that the Mitchels' claim was made valid by the terms of the Adams-Onis Treaty of 1821 by which Spain had ceded West Florida to the United States.[6] They also managed to locate documents issued by the Spanish government which tended to affirm the claim. Another four years were spent persuading the court to recognize those documents as genuine. Finally, in 1835, the Court ruled in favor of the Mitchels, who were thereby allowed to keep the Forbes Purchase (Watson 2013).

The federal government adopted several measures to expedite its handling of prior land claims, but, as the above example attests, it could take decades for the process of "quieting title" to be effectuated. Virtually no federal land in Louisiana was sold until 1825 (13 years after statehood), and litigation over some claims in Missouri was still ongoing after the Civil War. Gates (1968) reports that a majority of prior claims were ultimately rejected, and when the courts did award title it was often for a fraction of the land in question. Still, by 1846 nearly 19 thousand prior claims totaling over ten million acres had been confirmed, with the largest tracts located in Louisiana and Florida.

Public land sales were also impeded by corruption on the part of public officials, which in the Yazoo Land Fraud reached titanic proportions. In 1795 agents of four land development companies bribed members of the Georgia state legislature to sell them territory that the state then claimed in the west—over 40 million acres, comprising a large share of the present day states of Alabama and Mississippi—for $500,000. This works out to about 1.25 cents an acre. The state of Georgia later voided the sale, but not before the companies had sold land to unsuspecting buyers. Georgia ceded its western land claims to the federal government in 1802, along with responsibility for adjudicating disputes over the validity of the original sale by the state and of subsequent sales made by the companies. In 1810 the Supreme Court ruled in *Fletcher v. Peck* that Georgia's rescission of the original fraudulent sale had been an unconstitutional infringement on contract. It took the federal

government several more years to quiet title over all claims in the Yazoo, and until then the government was unable to sell any land there. Congress also had little choice but to appropriate $5 million dollars to compensate shareholders of the four Yazoo companies (Elsmere 1967).

Intrusion

Throughout the early part of the 19th century there was continuing apprehension, among residents of both the free states of the North and the slave states of the South, that the movement of population to the West was reducing the value of their property. Manufacturers and the owners of other businesses complained that they needed to pay higher wages to attract and retain workers. Another concern of those in the North, or at least those who had grown accustomed to a protective tariff regime, was that large amounts of revenue garnered from land sales would undercut support for high tariff rates (Gailmard and Jenkins 2018). Several bills were introduced in Congress to place a moratorium on the sale of land in the public domain. Other proposals, like that made by Connecticut Senator Samuel Augustus Foot in 1829, called for a halt to further surveying (Gates 1968). No such legislation was ever enacted. Year after year, the federal government continued to have millions of acres surveyed and put up for auction at the minimum price of $1.25 an acre.

The crucial point to be taken here is that even if Congress had voted to curtail federal land sales, such a measure would have had no effect upon the pace of western migration. As suggested earlier, the sale of federal land was driven not only by government policy, but also, and often more so, by the facts on the ground. One of these incontrovertible facts was that people could get hold of land in the public domain without having to pay for it—or at least not for quite a while. Of all the factors that prevented the federal government from acting as a price-discriminating monopolist, this was the most significant.

Not much concerned with deeds, patents, or other legal niceties, squatters were slipping into areas beyond the Appalachians even prior to the enactment of the Land Ordinance of 1785 and commencement of work by the Public Land Survey. In 1763, at the end of the Seven Years' War, the British promised their Indian allies that they would block the colonists from intruding into tribal lands west of the Appalachians. Americans violated the Proclamation Line as soon as it was drawn. Seeking to avoid hostilities with the Indians, in 1779 Governor William Penn (of Pennsylvania) dispatched an armed task force to expel those who had entered the forbidden areas and decreed that any who returned would face the death penalty. A few years later there were far more settlers in the area than ever before (Buck and Buck 1939).

The replacement of British authority with American was of no consequence. Soon after resigning his commission from the Army, George Washington rode out to inspect a large tract of land that he believed he owned in southwestern Pennsylvania. When he arrived there, he was dismayed to find it already occupied by a community of Seceders—dissenters who had broken off from the Church of Scotland in 1733. He offered to sell them the land, but they expressed no interest in buying it. He then requested them to leave and, according to accounts of those present, not in a nice way. Washington successfully prosecuted his claim to the land in court, but by that time the Seceders had already moved on to new land farther west (Larson 2014).

Washington's encounter with the squatters was by no means an unusual occurrence. In late 1782 William Irvine, commander of Fort Pitt, sent the following communique to James Madison, who was at that time serving in the Confederation Congress: "…the people are in great numbers flocking over the Ohio into what was hitherto been called the Indian Country & are busy in taking up & improving lands…I am of opinion that unless Congress & the several States (who have unsettled lands within their limits) immediately take measures for securing them, neither the U.S. nor any particular State will reap much advantage of them" (Madison 1782, p. 276).

Soon thereafter the Confederation Congress issued a proclamation, reminiscent of the British Proclamation of 1763, prohibiting the purchase of land from the Indians or settlement anywhere west of the Ohio River, without the approval of Congress (*Journal of the Continental Congress, September 22, 1783,* p. 602). In the spring of 1785 Congress even sent troops to expel squatters from what is now southern Ohio. They encountered several groups of them and tore down a few buildings, but the commander of the force, John Armstrong, seems not to have carried out the eviction orders with any great enthusiasm.[7] He likely realized that the errand was a pointless one. As in the case of the desultory effort undertaken six years earlier to remove them from western Pennsylvania, the flow of squatters into the area continued unabated (Van Atta 2014). In 1787 Congress again ordered "…the commanding officer of the troops of the United States on the Ohio to take immediate and efficient measures for dispossessing a body of men who have in a lawless and unauthorised manner taken possession…in defiance of the proclamations and authority of the United States" (*Journal of the Continental Congress, April 24, 1787,* p. 231). This pronouncement was no more effective than the first one in stemming the flow of intruders into Ohio.

The initiative exhibited by the squatters, as well as their perseverance, is not difficult to understand. Getting there first meant laying hold of the best land available with no money down. To be sure, squatters, as trespassers, could be ejected by the authorities from land that they had cleared and began to cultivate, and so lose the fruits of their labor. Squatters would have been justified, however, in viewing the possibility of ever being forced off the land that they had grabbed as quite remote. Efforts undertaken by the Confederation Congress to remove intruders from the Northwest Territory had certainly come to naught. Late in the Jefferson Administration the federal government again threatened squatters with expulsion. The Intrusion Act of 1807 authorized the President to "employ such military force as he may judge necessary and proper, to remove from lands ceded, or secured to the United States, by treaty, or cession as aforesaid, any person or persons who

shall hereafter take possession of the same, or make, or attempt to make a settlement thereon, until thereunto authorized by law" (*U.S. Statutes at Large, 9th Congress 2nd Session,* 1807, p. 445). As in the case of previous edicts issued against those who settled upon land in the public domain before the government had sold it to them, no meaningful attempts were made to carry out this policy (Gates 1968).

There is a simple reason why the government's threat to remove those who had intruded into the public lands remained an empty one. Keeping squatters at bay would have required a large, permanent military presence along the frontier, and such an undertaking was well beyond the fiscal capacity of the federal government. As Gates (1968) tells us, "All the power of the new national government was unable to prevent intrusions before the land had been surveyed and proclaimed for sale" (p. 387). Halting intrusion into the public lands was a nonstarter for political reasons as well. There were major figures of the time—most notably Madison and Henry Clay—who were vexed by the willingness of so many to ignore the law and occupy land they had not paid for. But theirs was a minority opinion. In the minds of most people, squatters embodied the hardiness and other admirable characteristics of the "yeoman farmer" that Jefferson had hailed as the backbone of the new Republic. Better that they retain land they were already cultivating than to have it fall into the hands of jobbers and speculators, who bought land only to sell it later at a higher price (Van Atta 2014).

In any event, efforts to evict the squatters would have faced overwhelming resistance, as an episode from 1816 illustrates. Early arrivals into the Alabama Territory had created difficulties for the Madison Administration by venturing into Spanish West Florida and injecting themselves into disputes involving various factions of the native Creeks. Madison opposed intrusion into the public lands, and rumor had it that the federal government was planning to eject the troublesome squatters from the area. The federal judge in place there implored his friend in the White House not to even think about it. In most of the territory, he warned, "not a single man resided who was not an intruder" (Toulmin 1816).

Perhaps some squatters expected that there might be some sort of reckoning when men from the government showed up, but that it would be a long time before they did. Before that happened, they would probably have pulled up stakes and moved further west in search of new and even better ground.

Squatting, in and of itself, exerts a strong negative impact upon the market for land. As Van Atta (2014) puts it, "Such trespassing upon the public domain threatened to diminish the value of the land Congress hoped to use for revenue purposes, [and] dampened the interest of law-abiding people to bid for land and pay accordingly" (p. 40). At the same time, however, the flood of squatters into the West facilitated privatization of the public domain. While the federal government was unable to project the military power needed to turn back those who had intruded into the public lands, it found that it could rely heavily upon these same people to roll back Indian resistance: "…between the savages and the least populated of the civilized parts of the United States…were men of enterprising, violent, nay, discontented and turbulent spirits" (Hibbard 1924, p. 58). Squatters also found strong advocates in Congress, where they were described as "…a living and massive rampart of bold and hardy men" who were performing the vital task of "…casting the Indians out of our border" (quoted by Fryman 2014, p. 127). Ready to meet violence with violence (or, often enough, to engage in preemptive violence) this vanguard of western migration cleared the way for the Public Land Survey to do its work. Indeed, the original survey of the Seven Ranges was able to proceed only after a militia force from Kentucky had unleashed a campaign of "terror and destruction" against the Shawnee (Pattison, 1959, p. 130). What the squatters were doing was illegal, but at the same time it contributed greatly to the federal government's ability to get land surveyed, platted, and put on the auction block.

Preemption

Just as members of Congress were loath to seize the land of those who had fallen behind on their payments, they had little desire to expel those who had not paid for it in the first place. Indeed, "…in recognition of his labor, the value given the land by his improvements, and the buffer that his settlement formed between the older settlements and the unpredictable natives," (Wilkinson 1958, p. 63) most of them had come to have, on balance, a positive view of squatters and were willing to accommodate their interests. For all its tough talk, the Intrusion Act of 1807 contained a major concession to the squatters. They were allowed to retain 320 acres as "tenants at will" by registering their claims with the Land Office. Although the Madison Administration had proclaimed that it was the government's intention to remove intruders, Congress enacted a flurry of legislation between 1813 and 1820 that allowed squatters in various parts of the public domain to remain where they were and to purchase the land under the same terms as those offered by the government to purchasers in general (*U.S. Statutes at Large, 12th Congress 2nd Session,* 1813, pp. 797-798; *13th Congress 2nd Session*, 1814, pp. 125-127; *13th Congress 3rd Session, 1815*, pp. 218-219; *14th Congress 1st Session*, 1816, pp. 307-308; *14th Congress 1st Session,* 1816, pp. 330-331; *16th Congress 1st Session,* 1820, p. 573). The most important and far-reaching of these measures was the Preemption Act of 1830, which entitled every "settler or occupant" then on public lands to purchase a quarter section (160 acres) at the minimum price of $1.25 an acre prior to it being put up for sale to the public (*U.S. Statutes at Large, 21st Congress 1st Session,* 1830, pp. 420-421). Approved as a one-year temporary measure, this accommodation was renewed and made permanent by the Preemption Act of 1841 (*U.S. Statutes at Large, 27th Congress 1st Session,* 1841, pp. 453-458).

A complication arose whenever land that was or would become section 16 was already occupied. Most of the new states had laws on the books, dating back to the time they were organized as territories, forbidding trespass on school land. State and local authorities could therefore have ejected the squatters. but they had no more appetite for doing so

their federal counterparts. They instead followed the lead of federal policy and recognized preemptive rights, let the squatters stay where they were, and gain title to their ground by paying the minimum federal price. In some cases, an alternate "in lieu" section of the township was chosen in place of section 16 to support the public schools (Larson 1903). Because squatters gravitated to the most promising land available, in lieu sections tended to be less valuable than section 16 (Fairfax *et al.* 1992).

Collusion

Beginning with the Land Act of 1796, laws governing sales in the public domain always stipulated that the land was to be sold to the highest bidder. Auctions were to be public, notice of them was to be given well in advance, and they were to be widely publicized. The minimum prices—originally $2.00 an acre, then $1.64, and then $1.25, were ostensibly set to let auctioneers know where bidding was to begin. The key feature of the Preemption Acts—granting squatters the right to buy land at the legal minimum of $1.25 an acre—obviously undermined the whole purpose of holding auctions in the first place.

Allowing preemptive purchases at the minimum price was explicit acknowledgment of yet another crucial fact on the ground: in most places most of the time, the minimum price was all that the federal government was ever going to get in the first place. Everyone knew that large-scale investors almost never bid against each other in public auctions. Whenever the government sold land in the public domain that was already occupied, "it was considered dishonorable to bid against an occupant who regarded the land as his by natural right" (Dick 1970, p. 12). The $1.25 an acre paid by those who bought land under the terms of the Preemption Acts was thus the same price that the federal government almost always got when the land was sold at auction.

Like illegal settlement on public land, collusion was, at least technically speaking, a criminal offense. In 1830, the same 21st Congress that adopted the first Preemption Act enacted legislation calling for "the suppression of fraudulent practices at the public sales

of the lands of the United States." The language in the bill promised stiff punishment for anyone caught interfering with the competitive bidding process:

> ...if any person or persons shall, before or at the time of the public sale of any of the lands of the United States, bargain, contract or agree, or shall attempt to bargain, contract, or agree with any other person or persons, shall not bid upon, or purchase the land so offered for sale, or any parcel thereof, or shall by intimidation, combination, or unfair management, hinder or prevent, or attempt to hinder or prevent any person or persons from bidding upon or purchasing any tract or tracts of land so offered for sale, every such offender, his, her, or their aiders and abetters, being thereof duly convicted, shall, for every offence, be fined not exceeding one thousand dollars, or imprisoned not exceeding two years, or both at the discretion of the court (*U.S. Statutes at Large, 21st Congress 1st Session,* 1830, p. 392).

Tough talk, but, according to Gates (1968), there is "little evidence that western people were intimidated by that law" (p. 153). Actually, there is overwhelming evidence that they paid no heed to it whatsoever. In many areas they formed extralegal organizations, known variously as land associations or claims clubs. Often with elected officers and written constitutions, these groups made it known in no uncertain terms that "claim jumpers," i.e., anyone who placed a bid higher than the minimum, would be made to regret it. When a public auction was to be held, club members identified those pieces of land that they wished to purchase. The claims clubs sorted out competing claims and made sure that their members got the land they were supposed to get at the minimum price (Bogue 1958). The main tactic that claims clubs employed to keep prices from moving above $1.25 per acre was to deter anyone from even calling out a bid. According to federal land law, once land had been offered at auction but failed to sell, it could be purchased through "private entry" to the first person subsequently willing to pay the $1.25 an acre minimum. Private entry sales, which began two weeks after the public auction, were then orchestrated by the claims clubs (Dick 1970; Murtazashvili 2013).

In the view of many historians, most notably Frederick Jackson Turner (1920), claims clubs brought a sort of rough-and-ready democratic government to the frontier before

formal authority could be established, and protected the interests of small farmers by thwarting the schemes of those who would otherwise amass large tracts of land. Bogue (1958) finds little support for these romantic notions. Many wealthy, large-scale investors were themselves club members, and were thereby able to claim tracts of land many times larger than the typical farm. Although castigated as speculators, they also provided credit, as well as other assistance, to club members who were seeking only to maintain their hold on small, farm-sized amounts of land.

Table 5:1 reveals just how little competitive bidding occurred in federal land sales. Data on average prices in various states are reported for four periods: 1800-1820, when the minimum auction price was set at $2.00 per acre; 1820-1840, when the minimum price was $1.25; 1840-1854, and 1854-1860. We see here that between 1800 and 1820, the average price for land sold in Ohio, Indiana, and Illinois was only a few cents higher than the legal minimum, and every acre sold in Mississippi was at the exact minimum price of $2.00. Some of the entries for this period show that at certain times and places collusive agreements were either never reached or failed to hold together, and prices jumped well above the minimum. During the peak of "Alabama Fever," nearly four million acres was sold in the state between 1806 and 1820 at an average price of $4.09 an acre. According to Gates, (1968), some prime cotton-growing land sold for over $100 an acre. Land in and around St. Louis also sold for good prices, and as a result the federal government realized an average price of $2.68 an acre for 1.25 million acres sold in Missouri.

Table 5:1 about here

In the years between 1820 and 1840, competitive bidding was almost nowhere to be found. All of the nearly 11 million acres sold in Illinois went for the $1.25 an acre legal minimum and averaged only pennies over the legal minimum in seven other states. The somewhat higher average price of $1.38 in Louisiana was due to strong demand for town lots in and around New Orleans. Prices for agricultural land stuck at $1.25. By 1840 most public land in Ohio and Indiana had already been sold, and sales volume during the 1840-

1854 had fallen to low levels in Illinois as well. In these states some of the small amount of land that was still available sold for more than the $1.25 minimum. In Ohio, buyers paid an average of $1.89 per acre for the 700,000 or so acres then remaining in the public domain.

Times series data plotted by North (1966) show that the amount of land that the federal government sold each year tended to track agricultural commodity prices. Sales volume in Alabama, Mississippi, Louisiana, and Arkansas moved up and down in tandem with cotton prices, while sales in the states of the Northwest were responsive to the price of wheat and corn. A sharp increase in the price of wheat, from $1.06 per bushel in 1834 to $1.92 a few years later, triggered a spike in sales volume that dwarfed the surge of 1816-1819. The boom was also abetted by the large amount of new land made available to settlers after the Indian removal actions that began in 1830. As we see in Figure 5:1, after quickening somewhat in the first part of the decade, the number of acres sold jumped to 12.5 million in 1835 and to over 20 million in 1836.[8]

Figure 5:1 about here

This surge in federal land sales was one facet of a speculative bubble in real estate prices that spread throughout the cities, towns, and countryside of the United States (McGrane 1924). Market frothiness was fed by the withdrawal of U.S. Treasury deposits from the Second Bank of the United States and the transfer of these funds to state-chartered banks. Notes and certificates of deposit issued by these banks, inadequately backed by metallic reserves but accepted by the government for the purchase of public land, were referred to pejoratively as "land office money" (Rousseau 2002). Remarkably, the massive increase in sales volume that occurred under this easy money regime was not accompanied by a concomitant increase in prices.

At this same time the federal government faced a problem unlike any other that it had previously encountered—what to do with the surplus revenue piling up in the U.S. Treasury. Legislation adopted in June of 1836 approved the transfer of $30 million from the

U.S. Treasury to state banks in proportion to their states' representation in Congress (*U.S. Statutes at Large, 24th Congress 1st Session,* 1836, pp. 52-56). President Jackson feared that this fresh infusion of reserves into state banks would fuel even more of the speculation that was already well underway. He directed Treasury Secretary Woodbury to issue the *Circular to Receivers of Public Money, and to the Deposite Banks*, or, as it is commonly known, the Specie Circular (reprinted in MacDonald 1916, p. 359). This executive order announced that after August 15, 1836, the General Land Office would accept only bank notes backed by gold or silver coin (specie) for any purchases larger than 320 acres. After December 15 all sales would be transacted only in specie.

Federal land sales slowed to an average of about 4 million acres a year between 1836 and 1838. In the years following the banking crisis known as the Panic of 1837, the economy contracted sharply (Rousseau 2002). Between 1839 and 1841 federal land sales dropped to a little over a million acres a year. Still, through this long deep recession, as in the great boom that preceded it, prices stayed at or very close to $1.25 an acre. We see, then, that competitive bidding for land in the public domain was the exception and not the rule. The minimum price set by the federal government when land was put on the auction block was usually the maximum price that was obtained as well.

Attributing the data reported in Table 5:1 entirely to collusion on the part of the buyers is unwarranted. At least part of the reason why claims clubs formed in open defiance of anti-collusion legislation is because everyone knew that the law was not going to be enforced. On the rare occasions when officials in the local land offices reported collusive activity to the home office in Washington, no action was taken (Dick 1970). Government agents and buyers alike simply came to assume that land was going to be sold at the minimum price. As shown in in Figure 5:2, Land Office sales forms used in Iowa in 1852 were printed with the price of $1.25 an acre already filled in, saving clerks the time and effort of writing out the same price over and over again.

Figure 5:2 about here

Lebergott (1984) goes so far as to describe the federal government's acceptance of noncompetitive behavior in land sales as a "uniform price policy." To some extent it was. A substantial measure of official sanction was given to the practice of letting federal land go at the minimum $1.25 an acre—particularly to squatters—by the Commissioner of the General Land Office himself. In advocating the extension of preemption privileges to some unsurveyed lands that were at that time not eligible for such claims, John Wilson stoutly defended the practice of allowing buyers to get land at what he called "the government price:"

> Too much cannot be said of the energy and enterprise of this class of our people. They are the pioneers of civilization and Christianity, They have pressed forward from the Alleghanies to the Pacific, opening roads, bridging the streams, felling the forests, and cultivating the prairies. Before them the wild beasts of the forests have passed away, and like a bulwark, they have stood in front of their less daring and adventurous fellow-citizens, who have followed on and peopled the countries thus opened up for them. It is, then, but a small gratuity for such services that they should be permitted to purchase their homes at the government price, without competing with speculators for the fruits of their own toil, hardships, and privations (Wilson 1853, pp. 82-83).

It is a stretch to identify this statement as official policy, as it ran counter to the law forbidding collusive behavior. It is clear to see, though, that preemption combined with collusion to create a policy equilibrium, and a self-reinforcing one at that. It was government policy to give those who had illegally entered into the public domain the right to buy the land they had grabbed at $1.25 an acre. How could they then expect those who had played by the rules, waited for the land to be surveyed, and sold at public auction, to pay a higher price?

A substantial amount of revenue was lost by not insisting on competitive bidding, but it also enabled the government to privatize the public domain quickly and expeditiously. This was, ceteris paribus, a good thing. Until it was sold, unclaimed land on the frontier remained vulnerable to the wasteful exploitation that we call the tragedy of the commons.

The common pool resource problem was particularly severe in the case of valuable timberlands, which were plundered in Michigan, Illinois, and Wisconsin (Huber 2015). Another compelling rationale for tolerating collusion was that it averted widespread violence and disorder. What would have happened if agents of the General Land Office, or the courts, had voided sales or revoked patents because buyers had conspired to thwart competitive bidding? An armed revolt is what would have happened. Accepting collusive behavior also mitigated the problem of squatters battling each other over competing claims to property. Violence is an evil in and of itself, but the costs of such conflict can also wipe out the expected gains in output and efficiency that accrue from privatization (Anderson and Hill 1990).

Properly speaking, what the government was selling was legal title to the land and not the land itself. The latter would have required preventing anyone from taking possession of land before they had purchased it, and this was something that the federal government was manifestly unable and unwilling to do. On the other hand, legal title to the land confers a wide range of benefits. It is something that only the government can supply, and it is something that those already on the land were willing to pay for. As Alston *et al.* (1999) explain, "Although property rights can develop through informal agreements among frontier settlers, at some point rising population densities, higher land values, and intensified competitive rivalries likely will make these arrangements ineffective, and the more property institutions provided by government become necessary" (p. 3).

While there is no doubt that the noncompetitive nature of the land auctions cost the federal government in terms of foregone revenue, it is difficult to estimate how much. We have so far characterized the minimum prices the government charged after 1820, i.e. $1.25 an acre, as quite a bargain, and it must have been. If it were not, what would have been the point of collusion in the first place? We also know that it was more profitable to buy new land in the West at that price than to restore fertility to depleted farmland in the East by incorporating animal manure, guano, and marl into the soil (Lebergott 1985). Had

the federal government been able to sell land under competitive market conditions, the price of land in the public domain would have risen to the point at which buyers would be indifferent between raw land that needed to be cleared and old land that needed to be replenished. These considerations suggest that the loss of revenue experienced by the federal government was substantial.

At the same time, there was a large amount of land in the public domain for which no one was willing to pay $1.25 an acre. As we indicated earlier, once resistance from the Indian tribes had been suppressed and prior land claims had been adjudicated, the only thing that might have gotten in the way of the Public Land Survey doing its work was an act of Congress ordering it to stop—which never happened. In most years the federal government put more land up for auction than ended up being purchased. By the early 1850s, over 77 million acres in the public domain had been offered for sale but remained unsold (Gates 1968).

Some of this ground remained unwanted because it was too sandy, too mucky, or, for one reason or another, just not very good. Some of it was of high quality but of little value because of its distance from rivers or canals, which made the cost of getting goods to these areas and their crops to market prohibitive. As has been the case so often in human history, this situation was altered by the arrival of a new technology—in this case the railroad. In 1850 Henry Clay urged the Senate to approve a 2.6 million acre grant to the State of Illinois that would be used to underwrite construction of the Illinois Central Railroad: "…by constructing this road through the prairie, through the center of the State of Illinois, you bring millions of acres of land immediately into the market which will otherwise remain for years and years entirely unsaleable" (reprinted in Colton 1857, p. 422). Congress approved the Illinois Central bill, which was the first of many. Over the next two decades the federal government subsidized railroad construction by granting over 175 million acres to 70 different companies (Greever 1951). This amounted to over 9 percent of the

land in the continental United States, or well over twice the total of 73 million acres reserved for the public schools (Hibbard 1924).

Military Bounties

There was another reason, more important than high transportation costs and lack of market access, why much of the public domain continued not to attract buyers willing to pay the minimum $1.25 per acre. It was because vast amounts of it, especially after 1847, could be had for a good deal less than that. As noted earlier, the United States compensated soldiers who served during the War for Independence with bounties, or warrants, that entitled them to a certain amount of land, based upon their rank and length of enlistment, in the U.S. Military District in Ohio. This was not an unusual practice. Compensating soldiers with land dates back to at least the time of the Roman legions (O'Callaghan 1954). Colonial governments offered land warrants as compensation to those who enlisted to fight in the French and Indian Wars. During the War for Independence, Virginia, New York, Pennsylvania, North Carolina, and Georgia issued land warrants to soldiers who served in their militias (Gates 1968).

The U.S. Military District in Ohio was only the first of several such reservations created by the federal government to honor the land warrants that veterans had received for their service. These areas were originally intended to serve as "militarized buffer zones along the frontier" (Frymer 2014, p. 124). It was believed that former soldiers, given their mastery of firearms and familiarity with combat tactics, would be well suited to the task of rolling back Indian resistance. Establishing such enclaves would spare the government the enormous expense of employing a standing army to protect settlers as the frontier advanced westward. It is for this reason that George Washington strongly backed the creation of the U.S. Military District in Ohio:

> Yet it appears to me this is the Tract which from its local position and peculiar advantages ought to be first settled in preference to any other whatever, and I am perfectly convinced that it cannot be so advantageously settled, by any other Class

> of Men as by the disbanded Officers and Soldiers of the Army—to whom the faith of Government hath long since been pledged, that lands should be granted at the expiration of the War, in certain proportions, agreeably to their respective grades….it would connect our Government with the frontiers—extend our Settlements progressively—and plant a brave, a hardy [&] respectable Race of People, as our [advanced Post,] who would be always ready & willing (in case [of] hostility) to combat the Savages, and check their incursions—A Settlement formed by such Men would give security to our frontiers—the very name of it would awe the Indians, and more than probably prevent the murder of many innocent Families, which frequently, in the usual mode of extending our Settlements & Encroachments on the hunting grounds of the Natives, fall the hapless Victims to savage barbarity (Washington 1783).

This rationale for the U.S. Military District was undercut, however, when the vast majority of Continental Army veterans (or their heirs) sold their warrants to third parties. This rendered them equivalent to "…a cash bounty to the amount that their warrant would command on the open market" (O'Callaghan 1954, p. 167). The market price for these warrants, it turns out, was quite low. As noted previously, the Ohio Company paid for land with bounties it had taken off the hands of Revolutionary War soldiers at deep discounts. So, too, did other large investors such as Jonathan Dayton, who through such means acquired 90,000 acres in Ohio's U.S. Military Tract at the cost of 5 cents an acre (Knepper 2002).

Soldiers who enlisted in the U.S. Army during the War of 1812 were promised 160 acres in the public domain, but only if they served for five full years or were killed in battle, in which case the award passed to their survivors (*U.S. Statutes at Large, 12th Congress 1st Session,* 1811, pp. 669-670). The 1812 warrants were valid for land in one of the large military reservations established that same year in Michigan, Illinois, and Arkansas.[9] A substantial amount of documentation was required to make a claim, and Oberly (1990) estimates that the 29,000 veterans who did so were less than half the number who were eligible. More importantly, the 450,000 men who served in state militias during the war were not extended this benefit.

Like the veterans of the War for Independence, few veterans of the War of 1812 had any desire to leave their homes and head out west. Unlike the Revolutionary War bounties, however, those awarded for service during the War of 1812 could be exchanged for land only by the veterans themselves or by their heirs. This restriction could be circumvented by signing over to buyers the power of attorney. Buyers could also enter into a forward contract with the warrantee, who would pledge to transfer title to them as soon as he received patent to the land (Swierenga 1968). By these means the vast majority of those who served in the War of 1812, like the previous generation of veterans, sold their warrants to land brokers. Conveyed to land offices in the West, they were gobbled up by large investors. Joseph Watson accumulated enough warrants to secure over 134,000 acres (nearly six entire townships) in the Illinois Military Tract. He did not make quite the killing that Jonathan Dayton did in Ohio, but Gates (1968) estimates that the warrants only cost Watson somewhere between 25 and 70 cents an acre.[10]

The next major armed conflict in U.S. history, the Mexican American War, gave rise to a bounty program far larger in scope than either of the previous ones. Legislation enacted in early 1847, known as the Ten Regiments Act, granted warrants for 160 acres located anywhere in the public domain to over 88,000 men who enlisted for at least a year or for the duration of the war, which for most of them occurred first. Soldiers were given the option of exchanging warrants for a $100 Treasury note bearing 6% interest. They were also permitted to sell their warrants on the open market (*U.S. Statutes at Large, 29th Congress 2nd Session,* 1847, pp. 123-126).

Soon after the war ended, the now aged veterans of earlier conflicts pressed Congress for benefits on par with those fought against Mexico (Oberly 1985). Organized as the United Brethren of the War of 1812, their lobbying efforts, which included rallies, conventions, and petition drives, paid off in September of 1850. Eight days after banning the slave trade in the District of Columbia—the last of five contentious pieces of legislation that constituted the Compromise of 1850—Congress enacted legislation that provided

land warrants to the state militiamen who had served in the War of 1812. Veterans received warrants for 40 acres if they had served for at least a month, 80 acres if they served for more than four months, and 160 acres if they served for over 9 months. Those who had been "at the seat of war" in various Indian wars and removal actions were made eligible for warrants under similar terms (*U.S. Statutes at Large, 31st Congress 1st Session*, 1850, pp. 520-521). All told, the 1850 Bounty Act made land warrants available to 190,000 soldiers and survivors who had not been eligible to receive them previously (Oberly 1985).

Legislation approved five years later, commonly called the Old Soldiers Act, was even more expansive. It granted warrants for 160 acres of land in the public domain to over 263,000 military personnel who had served for at least two weeks, or who had participated in a battle, in any American conflict since 1790. To make sure there was no doubt about it, the bill specifically named the volunteers who had served at the Battle of King's Mountain in the War for Independence, in the defense of Plattsburg, in the attack of the British fleet on Lewiston, Delaware in 1814, and in the Battle of Nickojock, [named after a Chickamauga Indian village in southeastern Tennessee] "against the confederated savages of the South." Those who had received 40 or 80 acre warrants under the 1850 Act received additional warrants to bring their total allotment up to 160 acres. The Old Soldiers Act also made eligible to receive land warrants all navy veterans, chaplains, musicians, flotilla-men, civilian teamsters and wagon-masters employed by the Army, as well as widows (whether they had remarried or not) and surviving minor children. Benefits were also made available to native tribesmen who had aided the American cause, "…in the same manner, and to the same extent, as if said Indians had been white men" (*U.S. Statutes at Large, 33rd Congress 2nd Session,* 1855, pp. 701-702).

All told, the 1850 and 1855 bounty bills awarded over 60 million acres in the public domain as compensation for military service. In the mid-1850s, major newspapers in New York printed advertisements from dozens of agents seeking to buy military warrants. *Thompson's Bank Note and Commercial Reporter* listed current prices, which, in

response to market conditions, ranged from 70 cents to $1.00 an acre on the East Coast. Those purchasing warrants out west paid about 5 to 10 cents more (Oberly 1990). Prices were subject to a lower bound of 62.5 cents an acre, which was equivalent in value to the $100 Treasury bill for which warrants could be exchanged, and an upper bound of $1.25 an acre—the "government price"—at which land could be purchased from the General Land Office. It was also possible for squatters claiming land under terms of the Preemption Act to use military warrants instead of paying $1.25 an acre in cash.

Oberly (1990) estimates that 95% of the warrants issued under the 1847 Ten Regiments Act were sold to land brokers. So were 93% of those awarded in 1850, as well as 98% of those awarded under the Old Soldiers Act of 1855. Warrants were exchanged for over 6 million acres of land in each of the states of Illinois, Missouri, Wisconsin, and Minnesota. By far the favorite destination of those desiring to redeem military warrants was Iowa. Over 14 million acres—39% of the entire area of the state, and well in excess of the 11.6 million acres that the federal government sold there—was removed from the public domain in this manner. As in Ohio and Illinois, some investors were able to acquire 200,000 acres or more in Iowa with military warrants that they had purchased (Lokken 1942). In contrast to the Midwest, military warrants were used to acquire less than 4 million acres in the slave states of the South (Gates 1968).

Swamp Land Grants and the Graduation Act

Military bounties reduced the federal government's inventory of unsold land but did not eliminate it. Congress responded by enacting a series of bills that granted over 65 million acres of swamp and "overflowed" land, assumed to be unfit for cultivation, to 15 different states. The first was to Louisiana (*U.S. Statutes at Large, 30th Congress 2nd Session*, 1849, pp. 352-353), the second to Arkansas and all other states with unsold federal land (*U.S. Statutes at Large, 31st Congress 1st Session*, 1850, pp. 519-520), and the third to the recently admitted states of Oregon and Minnesota (*U.S. Statutes at Large,*

36th Congress 1st Session, 1860, p. 3). Such land was not subject to the $1.25 an acre minimum price required to purchase federal land. According to Gates (1968), these grants were broadly supported because "there appeared no prospect that that [these lands] would bring in any revenue to the United States" (p. 321).

It was perhaps for this same reason that these bills were poorly drafted. Their major flaw was that of delegating the task of selecting swamp and overflowed land to state officials, who had strong incentives to have as much land as possible assigned to these categories.[11] Large tracts of land designated as swampy and subject to being overflowed may have had some puddles after a heavy rainstorm, but the soil was otherwise fertile and easy to cultivate. In many cases squatters had already settled upon swamp and overflowed land and demanded the right to purchase it through preemption (Gates 1968). Much of what the states succeeded in claiming as swamp land, in other words, was of considerable value, and the states were keen to sell it as quickly as possible. In many states the swamp and overflowed lands constituted a major new source of competition in the land market with which those selling section 16 had to contend.

A second major step that Congress took to clear its inventory of unsold land was to slash prices. Under the terms of the Graduation Act of 1854, legislation that had long been championed by Thomas Hart Benton, public land that remained unsold for over ten but less than fifteen years after being put up for auction would henceforth be available for $1.00 an acre. The price was lowered to 75 cents an acre for land that had been on the market for 15-20 years, to 50 cents if unsold for 20-25 years, to 25 cents if unsold for 25-30 years, and to 12.5 cents if unsold for over 30 years (*U.S. Statutes at Large, 33rd Congress 1st Session*, 1854, p. 574). The federal government subsequently sold 78 million acres in accordance with the graduated pricing formula but realized only $41 million in revenue. Over half the swamp and overflowed land brought the lowest allowable price of 12.5 cents an acre. In contrast to the land claimed with military warrants, located predominately in the states of the North, most of the acreage subject to sale under the

Graduation Act was located in the slave states. This included over 14 million acres in both Alabama and Arkansas, almost that much in Benton's Missouri, and between 6.8 and 7.8 million acres in Florida, Mississippi, and Louisiana (see Gates 1968, p. 194).

Looking back at Figure 5:1, we see that the Graduation Act sparked the third and final boom in federal sales. The impact of these sweeping price reductions can also be seen in the lower right quadrant of Table 5:1, where average prices for federal land in the 1854-1860 period are reported. In seven states, federal land sold for an average price of less than 60 cents an acre. Prices continued to prevail in the $1.25 range in Minnesota and Iowa because almost no land there qualified for sale under the terms of the Graduation Act. Prices in Illinois were boosted by sales along the route of the Illinois Central Railroad, which had been awarded all even-numbered sections in a twelve-mile swath along its tracks. To mollify those who were critical of giving so much land to the railroad, Stephen Douglas, author of the legislation, included a provision directing the federal government to charge a "double-minimum" price of $2.50 an acre for the unsold land that it retained in the odd-numbered sections. Douglas asserted that this would result in the federal government suffering no net loss of revenue from the grant to the railroad. What he failed to note was that at $2.50 an acre, the federal government would capture little of the increase in land values generated by the presence of the railroad.

The Homestead Act and the End of Federal Land Sales

Several politicians and other leading figures of the time opposed the War with Mexico. They included John Quincy Adams, Horace Greeley, and the young Whig congressman from Illinois, Abraham Lincoln (Merk 1969).[12] Perhaps the most celebrated dissent was that of Ralph Waldo Emerson: "The United States will conquer Mexico, but it will be as the man swallows the arsenic, which brings him down in turn. Mexico will poison us" (Emerson and Forbes 1913, p. 206). His prophesy was accurate, as the Mexican Cession, along with the acquisition of the Oregon Territory in 1846, brought to the fore the all-

encompassing conflict over slavery. Northern abolitionists reasoned that the most effective way to halt the spread of slavery was to fill the vast new areas in the West with as many settlers as possible as quickly as possible. Selling land at $1.25 an acre, making tens of millions of acres available at even lower prices by designating it as swamp land or eligible for graduation, recognizing preemptive claims at that price, and providing land warrants in return for military service were all well and good. Nothing though, would be more conducive to western migration than making land available for free.

The policy of giving land to those who would settle on it dates back to the headright system employed in many of the colonies (Gates 1968). Congress itself created a precedent for doing so when it gave the Ohio Company of Associates 100,000 acres to the north of the tract they had purchased. This area, to be given in 100-acre lots "as a bounty and free of expense" to the adult males willing to settle there, was meant to serve as a buffer between the Company's land and that still controlled by native Indian tribes (*U.S. Statutes at Large, 2nd Congress 1st Session*, 1792, pp. 257-258). Similar legislation, enacted in 1842, provided that any man able to bear arms and willing to settle south of Gainesville, Florida would receive title to 160 acres of land after residing on the land for 5 years (*U.S. Statutes at Large, 27th Congress 2nd Session*, 1842, pp. 502-504).

Bills calling for the provision of free land in the public domain to those willing to settle there—a policy known as homesteading—were introduced in Congress in 1846 and championed by the insurgent Free Soil Party in the election of 1848. The call for "Free Soil, Free Speech, Free Labor, and Free Men" was intended to keep the newly acquired land in the West free of slavery, but it was also a demand that it be free, period (Foner 1995). These bills were opposed by a strong coalition of forces in Congress. Southerners perceived homesteading to be a mechanism for bringing many new free states into the Union, thereby halting the spread and ultimately undermining the institution of slavery. Eastern opponents rekindled the old fear that speeding up migration to the West would lead to labor shortages and higher wages. Others argued that allowing people to obtain land in

the public domain for free would drive down the value of land that had previously been purchased from the federal government (Arrington 2012).

The House approved comprehensive homesteading bills in 1852, 1854, and 1859. These were all blocked in the Senate, where the southern slave states held a much larger share of the membership (Gates 1963). A homesteading provision was included, however, in the 1850 Oregon Donation Act. After living upon and cultivating the land for four years, single men would receive title to 320 acres and married men an entire section. Those made eligible included "…every white settler or occupant of the public lands, American half-breed Indians included, above the age of eighteen years, being a citizen of the United States…or who shall make such declaration" (*U.S. Statutes at Large, 31st Congress 1st Session*, 1850, p. 497). This policy was later extended to those settling in the Washington Territory (*U.S. Statutes at Large, 32nd Congress 2nd Session*, 1853, pp. 172-179).

By 1856 the Free Soil Party had been subsumed by the Republican Party, as had its proposal to convey free land to those who would settle on it. After winning a near majority in the elections of 1858, in June 1860 the Republicans in Congress reached a compromise with the Democrats on legislation that would have moved policy significantly in the direction of homesteading. Senate Bill 416 called for settlers to be able to buy a quarter section (160 acres) for only 25 cents an acre after 5 years of residence. The price of land purchased through preemption was to be cut in half to 62.5 cents, and claimants would be given two years to pay. President Buchanan vetoed the bill, but the secession of Southern states from the Union, accompanied by the departure of Southern senators and representatives from Congress, assured approval of the Homestead Act of 1862 (Gates 1963). As of January 1, 1863—the same day that the Emancipation Proclamation took effect—anyone who was over 21 years of age, the head of a household, or who had served in the armed forces of the United States, was a citizen of the United States or willing to swear that they would become one, and who had never borne arms against the United States or aided its enemies, could lay claim to 160 acres in the public domain. All they needed to do is live there

for five years and the land would be theirs. In the case they died before then, the homestead would pass to their wife, heirs, or devisees (*U.S. Statutes at Large, 37th Congress 2nd Session*, 1862, pp. 392-3).[13] The law made it difficult, if not impossible, to take a homesteader's land away from him: "…no lands acquired under the provisions of this act shall in any event become liable to the satisfaction of any debt or debts contracted prior to the issuing of the patent therefor" (p. 393).

Economic historians are critical of homesteading, which in their view encouraged premature and inefficient investment in new agricultural land (see, *inter alia*, Dennen 1977). For better or worse, the Homestead Act marked the end of the federal government land sales. By then the federal government had sold 157 million acres for $206 million, which nets out to an average price of $1.31 an acre. The Homestead Act was abolished in 1976. Twelve years later, Ken Deardorff, a Vietnam War veteran, received a patent for an 80-acre homestead in southwestern Alaska (Gambino and Frail 2012). It was the last of 270 million acres converted into private property in this manner—nearly twice as much land as the federal government sold.

School Land Sales

Through the first half of the 19th century, the federal government sold off the public domain at lower and lower prices. In the end it turned land over to homesteaders in return for no money whatsoever. The first proposition of the Federal Competition Hypothesis can be accepted, without reservation or qualification, as an accurate description of what happened. This brings us to the second proposition—that state and local authorities could not sell section 16, nor obtain an equivalent amount of revenue from leasing it, for prices higher that what the federal government was charging. We now know what those prices were, so we can express this proposition in more quantitative terms. Nothing located in section 16 should have sold for more than $2.00 an acre before 1820, or for more than $1.25 an acre between 1821 and 1847. At that point the federal government began issuing

military land warrants, good for tens of millions of acres in the public domain, which could be purchased for a good deal less than $1.25 an acre. The Graduation Act of 1854 lowered the trajectory of land prices even further by permitting buyers to purchase federal land for as little as 12.5 cents an acre, and after 1862 the only thing required to obtain a 160-acre homestead was a pledge to live on it for five years. According to the Federal Competition Hypothesis, these developments should have driven down the sales price of section 16 land even farther—to well below a dollar an acre after 1847, and, after graduated sales and homesteading got underway, to much less than that.

Data on school land sales needed to investigate the Federal Competition Hypothesis could be located for several states: Ohio, Illinois, Alabama, Missouri, Arkansas, Iowa, and Wisconsin. A smattering of such data exists for Indiana and for Florida. In the case of other states, it was possible to glean some information from official state reports or from secondary sources. FN No data MI Mississippi S stayed with leases. Today the Secretary of State manages over 640.000 acres of Section 16 leases for land or timber (Watson 2024). LA some sold, some leased after thorough searching unable to tell how much. $33843in LA sold by 1850 (Dimitry, Alexander. Report of the Superintendent of Public Education of Louisiana 1850, get press from Treas Report)

Texas

This analysis begins with Ohio, the first state granted land by the federal government for the support of its public schools. It was here that key principles were established concerning both the disposition of school land and the management of the revenue that it yielded from it. Many of the policies and practices developed in Ohio came became the models that other states emulated. Costly mistakes were made there as well, and these served as cautionary tales of what not to do.

Ohio

As reported at the beginning of this chapter, when the people of Ohio received the school land grants from the federal government, they anticipated a rosy future in which proceeds generated by this land would pay for public education far into the future. Such expectations were unrealistic, but it is understandable that they viewed the land as an endowment that would provide financial support for education on a permanent basis. Private gifts and public grants of land to support schools and other institutions, in Europe as well as in colonial America, had always been treated in this manner. In 1733, for example, the Connecticut Assembly granted land to the towns in the colony for the support of their schools, and ordered that "the proceeds to be set apart as a permanent fund, the interest on which is to be faithfully expended for the support of schools required by law" (Keith and Bagley 1920, p. 19).

To Taylor (1922), using school land grants in this way made little sense. In order to maximize the benefits derived from the grant, state and local officials should instead 1) have sold the land as soon as they got it, and 2) expended the entirety of the proceeds immediately in order to get public schools started as soon as possible. After an area had been settled and developed, he reasons, people living there would be able to support public schools through taxation. The best use of section 16 sales revenue was therefore to establish schools and underwrite their operations until tax revenue flowing into state and local coffers was ample enough to furnish ongoing support. In his view, it makes no sense to hold on to the school land "…for the benefit of future generations more able to maintain schools than…the pioneers" (p. 123).

This argument is in accord with basic principles of welfare economics, but there are problems attendant in the policy that Taylor advocates. First, instead of providing bridge financing to cover the cost of schools until there was a sufficient tax base present to do so, school land sales revenue could have enabled taxpayers who were capable of supporting public schools to simply delay the onset of taxation until some later day. This possibility also alerts us to the fact that the amount of revenue that public schools derived from state

and local taxes in the future would depend upon how much state and local governments decided to allocate to them in the future. There was no way to know in advance just how favorably future governors, legislators, and local officials would look upon public schools. There was thus no way to know how much revenue, if any, they would allocate to them. Even if state and local governments turned out to be supportive of public education, who could anticipate how long it would take before substantial amounts of tax revenue were forthcoming? This was not something that would happen overnight. The frontier was pushed westward in a very uneven manner, with large pockets of federal land left unsold and therefore not on the tax rolls. The policy that Taylor espouses entailed the risk of establishing schools with the proceeds of school land sales only to shut them down later due to lack of tax revenue.

Another telling argument against a policy of quickly selling off the school land is the very issue upon which we are focused here—the presence of federal competition in the market for land. As one Ohio historian put it, "So long as public lands are abundant in a State—and they always are in a new State—it would be vain to expect that men will pay a higher price for school lands than is demanded by the United States for lands of the same quality, unless more favorable terms of payment are offered for the former" (Miller 1920, p. 43). Holding on to section 16 and selling it at some future date, after areas surrounding it had been developed and made productive, offered the possibility of getting much higher prices for it than what the federal government was charging.

In any case, public officials in Ohio did not sell school land as soon as it had been granted to them. Indeed, nearly three decades elapsed before any of it was put up for auction. The reason why they held off from selling for so long, however, has nothing to do with the considerations that we have just discussed. What deterred them instead were the terms of the trust under which they had been granted section 16—or at least their understanding of those terms. They believed that they were obligated to preserve the land itself as an endowment, and to manage it in such a way that it would provide support for the

public schools indefinitely. To them, this meant they could not sell the land, but must lease it instead.

The legislation that granted school land to Ohio included no such language to that effect. As indicated previously, it stated only that "…the section, number sixteen, in every township…shall be granted to the inhabitants of such township, for the use of schools" This lack of guidance was not unusual. The only state grant that explicitly called for school land to be regarded as an endowment was that made to Tennessee, which stated that revenue from school land grants "…shall be appropriated for the use of schools for the instruction of children for ever" (*U.S. Statutes at Large, 9th Congress 1st Session*, 1806, p. 381). Still, we can see why officials in Ohio believed what they did. That the school lands were to be a permanent source of financing can be inferred from the language of the 1785 Land Ordinance, which states that section 16 was to be reserved for the *maintenance* of public schools. This condition can also be inferred from language in the 1787 purchase agreement with the Ohio Company of Associates, which affirmed that lot No. 16 was "to be given *perpetually* for the purposes contained in the said ordinance," i.e., the Land Ordinance of 1785 (Ohio General Assembly 1825, p. 17.) Finally, there was the precedent set by Connecticut in 1795. When the state legislature approved the sale of the Western Reserve, it stipulated that "That the principal sum which shall be received on the sale of the lands belonging to this State, lying west of Pennsylvania, shall be, and remain a perpetual Fund…and the interest arising therefrom, shall be, and is hereby appropriated to the support of Schools in the several Societies [districts]…within this State" (*Acts and Laws Made and Passed by the General Assembly of the State of Connecticut*, 1795, pp. 487-488). This provision was reaffirmed in 1818 when it was included in Article 8, Section 2 of the Connecticut Constitution.

The Ohioans were thus justified in viewing the school land that they had received as a trust, and in believing that they were to manage this land as an endowment so as to yield a continuous flow of revenue over time. This understanding in and of itself, however,

should not have enjoined them from selling it—which is what the state of Connecticut had done with the Western Reserve. What they were required to do was to use the section 16 land grant for the ongoing support of public schools. What they were forbidden to do was what Taylor recommended, which was to expend all proceeds as soon as they were realized. But it should have been permissible for them to sell all or any part of the land in section 16, whenever and wherever they chose to do so, as long as they invested the proceeds in such a way as to generate a flow of income over time. According to Lebergott's (1985) calculations, the Ohioans would have earned a higher rate of return by selling section 16 and investing the proceeds in other types of assets. Heidelberg (1992), on the other hand, thinks that they did better by holding on to school land for so many years before they did sell it.

The question of whether it was better to hold on to section 16 or to sell it and invest the proceeds is academic, of course, given that officials in Ohio did not believe that selling was an option. As they saw it, the only choice available to them with respect to the school land was to rent it out. In one of the first bills passed in its first session in 1803, the state legislature authorized township trustees to lease section 16 in the Congress Lands for periods of up to seven years, and up to fifteen years in the U.S. Military District (*Acts of the First Session of the General Assembly* 1803, pp. 61-65). This was to be done so that "…the profits therefore may be applied to the support of schools, according to the true intent of the original donation and the several laws of the United States, reserving, granting, and appropriating the same." The amount of land an individual could lease was to be at least 160 acres but no more than 320 acres. Under the terms of the lease, tenants were required to clear and fence fifteen acres out of every 160 acres that they took on. They were to clear and plant five of those fifteen acres in forage crops (either timothy or red clover), to prepare another seven acres for plowing, and, in the remaining three acres, to plant "one hundred thrifty and growing apple trees."[14]

What tenants did not have to do is pay money for rent. Although such leases would yield no revenue, it was reckoned that once land had been brought into production, it could be rented out in the future on profitable terms. To make sure that the value of the land was enhanced and not diminished, the legislation authorized township trustees to "inspect and enquire into any waste or trespass that may be committed," such as the carrying away of excessive amounts of timber or stone. Unfortunately, according to Tappan's (1876) account, the authorities often failed to deter this sort of opportunistic behavior from occurring.

One might think that the prospect of not having to pay rent would have made these "improvement leases" quite appealing. It did not. To most settlers, it made little sense to lease land, even under such favorable terms, when it could be purchased outright from the federal government at a very low price. They also balked at the prospect of making the required improvements and then losing their lease, in which case their labor would go for naught. It is obvious, then, that the Federal Competition Hypothesis is not spun from straw. At this point in time, the presence of so much federal land for sale in Ohio at low prices made it difficult for the Ohioans to realize any revenue whatsoever from school land leases.

In light of this situation, legislation was enacted in 1809 to put section 16 land up for sale. There was a catch, however. Given that the Ohioans did not believe they had the authority to sell the land, buyers would not actually be conveyed fee simple title. What they received instead was a "deed of lease" for 99 years, renewable forever, which they could pass on to their heirs or assignees. Lessees were required to pay for the land to be surveyed and to make an annual interest payment of six percent on a shadow purchase price of $2.00 per acre (the minimum price that the federal government was demanding at the time for land in the public domain). The legislature reserved the right to alter the terms of the lease, so there was a risk that the payments required might increase in the future. Until then, the annual interest payment (or rental payment, if you prefer) was a

mere twelve cents an acre (*Acts Passed at the First Session of the Seventh General Assembly of the State of Ohio, 1809,* pp. 109-112).

A year later the legislature made things even easier for tenants. In exchange for a fee of ten dollars, all surveying costs would be waived, and no interest would be charged for the first five years (*Acts Passed at the First Session of the Eighth General Assembly of the State of Ohio, 1810,* pp. 253-254). As Miller (1920) notes, "The postponement of interest money for five years was doubtless made to meet the competition of United States land offered for sale on easy terms and with taxes deferred for the first five years after purchase" (p. 64). In 1817 the legislature voted to extend the policy by authorizing leases of 99 years, renewable forever, under the terms indicate above, to all other areas in the state except for the Western Reserve. Rent (or interest) was again set at 6 percent of the shadow purchase price, but the legislation did call for the land to be reappraised every 33 years (*Acts Passed at the First Session of the Fifteenth General Assembly of the State of Ohio,* 1817, pp. 202-214).

It takes little by way of calculation to determine that the permanent leases yielded little revenue for the schools. Members of the Ohio state legislature came to realize that what they had assumed to be the only course available to them—leasing the school land—was a disastrous policy. In 1822, Assemblyman Caleb Atwater of Cincinnati informed his colleagues that "…it would seem that more money has been expended by the state in legislating concerning these lands than they have yet or ever will produce…unless these lands are soon sold…no good and much evil will accrue to the state from the grant of these lands by Congress" (quoted by Miller 1920, p. 66-67). The legislature agreed with his assessment. In 1823 the surrender of existing leases was ordered, and a moratorium was placed on the issuance of any new permanent leases (*Acts Passed at the First Session of the Twenty-first General Assembly of the State of Ohio,* 1823, pp. 33-34).

A year later the Speaker of the Ohio House of Representatives and Speaker of the Senate sent a memorial to Congress that spelled out the many problems associated with

leasing. The major drawback, they explained, was what we have formalized as the Federal Competition Hypothesis. Because the federal government had so much land for sale at such low prices, few people were interested in leasing at any price: "…every individual, possessing a very moderate proportion of industry and economy, may, within a single year, appropriate to himself in fee, a quantity of land sufficient to furnish means of support for an ordinary family." Even the permanent leases, they reported, tended to attract only poor tenants. The meager amount of revenue derived from leases did not even cover the cost of administering them. Extolling the virtues of private ownership, the memorialists proclaimed that "the great body of those who constitute the strength and basis of every Government, and who are to be considered as the friends of good order and public improvement, are among those who are owners as well as occupiers of the soil" (Richardson and Trimble, 1824, p. 570).

The memorialists also informed Congress that they had determined, upon further reflection, that their prior understanding of the school land grant, i.e., that the federal government had not authorized them to sell it, was erroneous. Actually, they had possessed the right to do so all along. As they now interpreted the law on trusts, the United States had relinquished any power to prohibit them from doing whatever they wanted to do with the land:

> …inasmuch as they have not reserved to themselves any beneficial interest in the land aforesaid, or possibility of reversion, or any title whatever, it cannot be supposed that they possess any controlling power. It may be urged, also, that, inasmuch as there has been no method pointed out in respect of the manner in which the trust should be executed, that the Legislature of the State of Ohio have an unlimited discretion in this respect, and may avail themselves of every possible method of producing the greatest advantage to those whom they represent (Richardson and Trimble, 1824, p. 570).

Why, then, were they petitioning Congress to recognize their right to sell section 16 if they already had that right? Unfortunately, as they explained, as long as there was any residual uncertainty regarding their authority, potential buyers would be put off by the

prospect of future challenges to title. What they needed was to have Congress clear things up: "an act of the Congress declaratory of the extent of the grants aforesaid …will have the full effect of removing every doubt in the minds of the purchasers, and thereby enhance the price which will be obtained for the same" (p. 570). A few years later Congress responded favorably to their petition and gave explicit permission to Ohio "to sell and convey, in fee simple, all, or any part, of the lands heretofore reserved and appropriated by Congress, for the use of schools in the state" (*U.S. Statutes at Large, 19th Congress 1st Session,* 1826, p. 138).

The Ohio General Assembly immediately followed up with legislation directing how approval for the sale of school land was to be obtained and how it was to be sold. In each township, votes for or against the sale of section 16 were to be cast by all white males over 21 years of age, providing that there were at least 20 of them who had resided in the township for at least one year, Once majority approval of these voters had been recorded, 60 days' notice was to be given, through an advertisement in "some newspaper in general circulation within the county," of a public auction to be held at the county courthouse. There the land would be sold to the highest bidder, but in no case for less than its appraised value. Buyers were to make a down payment of 25 percent, and to pay the remainder in three annual installments with no interest charged on the remaining principal. This legislation required that townships planning to sell school land obtain approval in advance from the General Assembly. State legislative oversight would thus act as a safeguard against malfeasance on the part of local officials and collusion among potential buyers. Those who held permanent leases could exchange the lease for a certificate of purchase and fee simple title by paying for the land at its appraised value. In such cases they needed to put only one eighth of the purchase price down and make seven additional annual installment payments (*Acts of a General Nature Passed at the First Session of the Twenty-fifth General Assembly of the State of Ohio,* 1827, pp. 56-65).

Soon thereafter the legislature also provided for the sale of school land to be approved by a majority vote of adult white males residing in the Virginia Military District, the U.S. Military District, and the Western Reserve. Given, however, that the school land in question was in the form of three-mile square quarter sections instead of section 16 in individual townships, different arrangements were made for its sale. Once approval of the voters in the U.S. Military District had been obtained, sales were to be conducted by the various county treasurers. Purchasers were given six years to pay rather than four. Land reserved for the Virginia Military District was to be sold at the Court of Common Pleas in Mansfield, Richland County. As in the case of the Congress Lands, advanced notice was to be given through newspaper advertisements of the public auction where the land would be sold to the highest bidder, but in no case for less than its appraised value. Similar provisions were made for the exchange of permanent leases for deeds of conveyance and conversion to fee simple title, but permanent lease holders in the military districts were given ten years to make the payments required of them instead of eight (*Acts of a General Nature Passed at the First Session of the Twenty-fifth General Assembly of the State of Ohio,* 1827, pp. 103-111; (*Acts of a Local Nature Passed at the First Session of the Twenty-fifth General Assembly of the State of Ohio,* 1827, pp. 45-46; *Acts of a Local Nature Passed at the First Session of the Twenty-sixth General Assembly of the State of Ohio,* 1828, pp. 135-137; *Acts of a General Nature Passed at the First Session of the Twenty-fifth General Assembly of the State of Ohio*, 1827, pp. 56-65; *Acts of a General Nature Passed at the First Session of the Twenty-sixth General Assembly of the State of Ohio*, 1828, pp. 23-29, 61-65).

Winning recognition of the right to sell section 16 established a precedent that all states subsequently admitted to the Union were able to follow. This was only one way, however, in which Ohio charted the path forward in the disposition of school land grants. The memorialists also promised Congress that revenue from the sale of school land would be "…invested in some permanent fund" (Richardson and Trimble, 1824, p. 571). What

they would not do is what Taylor (1922) advocated, and that was to expend sales revenue as soon as they collected it. It is true that leasing section 16 provided public schools with a permanent flow of revenue. Selling the land, investing the proceeds, and directing annual earnings to the support of education was another means—and hopefully a far more effective one—of achieving the same end. The act of Congress that gave Ohio the green light to sell the school lands confirmed that Ohio was to do what the memorialists had promised, i.e., "to invest the money arising from the sale thereof, in some productive fund, the proceeds of which shall be forever applied, under the direction of said legislature, for the use and support of schools within the several townships and districts of country, for which they were originally reserved and set apart, and for no other use or purpose whatsoever" (*U.S. Statutes at Large, 19th Congress 1st Session,* 1826, p. 138).

This brings to the fore the question of just what qualifies as "some productive fund." This language suggests that the State of Ohio was to create a sovereign wealth fund that would earn a steady flow of income from a variety of safe investments. What they actually did was to have revenue from the sale of school land deposited in the same place that had been receiving lease revenue—the State Treasury. Passed in tandem with the bills that authorized the sale of section 16, legislation enacted in 1826 established within the Treasury a separate Common School Fund. The Fund was ordered to make annual payments equal to six percent of its principal to support the public schools, and the "faith of the state of Ohio" was pledged to guarantee that such payments would be made (*Acts of a General Nature Passed at the First Session of the Twenty-fifth General Assembly of the State of Ohio,* 1827, p. 78). The Fund, moreover, was to be "irreducible." This meant that the amount of revenue that the fund apportioned to schools each year could not exceed the amount of interest or dividends that had been earned, leaving the principal untouched. For this reason, annual reports of the Treasurer and Auditor of Ohio placed the Common School Fund in a category called the Ohio Irreducible State Debt.

The creation of a permanent state school fund in Ohio thus marks another major precedent regarding federal school land grants and the support of public schools. Although the money deposited in them would come from many sources in addition to section 16, nearly every state subsequently admitted to the Union followed Ohio's lead and established a permanent state school fund. A few did so through an act of the legislature, but the vast majority did so by establishing permanent school funds in their constitutions (Tyack and James 1986).

The final feature of the act authorizing the sale of section 16 reaffirmed that all interest earned on the proceeds was to be paid to the township in which that section was located: "in the apportionment of the proceeds of said fund, each township and district aforesaid shall be entitled to such part thereof, and no more, as shall have accrued from the sum or sums of money arising from the sale of the school lands belonging to such township or district" (*U.S. Statutes at Large, 19th Congress 1st Session*, 1826, p. 138-9). The Ohio State Common School Fund thus functioned as a sort of credit union for the townships, paying out interest on their deposits at the rate of six percent a year. The more revenue that a township earned from the sale of section 16 and deposited in the Fund, the more interest income it received. By the time Ohio was fully settled, there were 819 separate township accounts held in trust by the state.

Separate accounts were maintained for the Virginia Military District, U.S. Military District, and Western Reserve (Tappan 1876). The State of Ohio also established the Moravian School Fund to accept and to apportion revenue generated by the sale of land that the United Brethren had turned back over to the federal government in 1824. This fund operated in the same manner as the funds for the Western Reserve and the two military reservations, making payments equal to six percent of its principal every year (Barney 1855). The Moravian School Fund was very small, however, and for that reason is not covered in any of the discussion that follows.

In 1839, Samuel Lewis, Ohio's first Superintendent of Common Schools, reviewed the first decade of section 16 sales in his report to the legislature. He was dismayed to find that a great deal of land had been sold for far less than a dollar an acre—in some cases for mere pennies (Lewis 1839). How could this have happened? It was surely not the product of sweetheart deals arranged by local authorities, as all sales had to be ratified by the state legislature. Nor was it the impact of federal land sales that was responsible. The Federal Competition Hypothesis predicts that school land could not be sold for more than what the federal government was charging, which at that time was $1.25 per acre. It does not suggest that it would have been sold for far less than $1.25 an acre.

It was obvious to Lewis what was responsible for the fire sale prices—the proliferation of permanent leases that had been issued prior to land sales. We need appreciate only the basic elements of Nash bargaining theory to understand why. The permanent lease was a binding contract. It was therefore necessary to persuade lessees to surrender their leases before the land in question could be sold, and lessees would do this only if it made them better off to do so. Trading in a lease for fee simple title would allow them to sell the land, rent it out, or bequeath it to their heirs. Tenants also knew that many years later, when the land was reappraised, rental payments might rise significantly. They were thus willing to pay something to become owners instead of permanent leaseholders. Given the extremely favorable terms of their leases, however, they were not willing to pay very much. Moreover, permanent leaseholders were able to obtain fee simple title by buying the land at its "first appraised value," devoid of any improvements that they had made. In most cases this amounted to no more than 25 cents an acre, and it could be less than that.

On the other side of the table were state and local authorities who were collecting very little revenue from the leases. They were not collecting any tax revenue from it, either. Until public land was sold it remained the property of the United States, and state and local governments were prohibited from levying taxes on it (Culp *et al.* 2005). Once it was sold and became private property, they would at least be able to get the land on the tax

rolls. The holder of a permanent lease was thus in a very strong bargaining position. When land held under a permanent lease was subsequently sold to lessees, it was sold at a deep discount.

In 1840 the Ohio state legislature ordered county auditors to provide the State Auditor with information on all section 16 sales in their county, including when each sale took place, how many acres sold, and how much per acre was paid. The Auditor's compilation of these reports encompasses 2193 sales transacted between late 1829, when selling commenced, and early 1842. It is thus possible to examine the same data that were available to Lewis in 1839, as well as data that came in over the next three years. There are 88 counties in Ohio, but these data come from only 47 of them. This is mainly due to the fact that there were 23 entire counties and substantial parts of 20 others that were located in the Virginia Military District, U.S. Military District, and Western Reserve, and no section 16 sales were made in these areas. A half dozen other counties located in the Congress Lands failed to make a report to the State Auditor, and of course there are no sales data on school land that continued to be held under permanent lease and had not yet been sold.[15]

The State Auditor's report indicates that over 92% of the school land acreage sold between 1829 and 1842 was in section 16. Most "in lieu" land was located in sections adjacent to 16. Over 76 percent of all sales were for 80 (± 10) acres, and slightly more than six percent of the sales were for quarter sections of 160 (± 10) acres. Lots as small as one acre each were sold in and around Cincinnati, and at the other extreme were two purchases of an entire 640-acre section. Three out of four buyers chose the option of making four annual payments of 25 percent, but one in eight paid the entire purchase price upfront.

The entries in the top row of Table 5:2 are based upon school land sales in the first areas that were settled in the state—the Seven Ranges (Jefferson, Harrison, Belmont, Monroe, and eastern Washington counties), the tract purchased by the Ohio Company of Associates (Athens, Lawrence, Gallia, Meigs, and western Washington counties), and

areas just to the south and west of there (Pike, Scioto, Jackson, and Hocking counties). As documented in an earlier report made by the State Auditor, the issuance of permanent leases in these counties was widespread (Osborn 1825). These data strongly confirm Lewis's conclusions concerning the deleterious consequences of issuing permanent leases for school land. As we see in Table 5:2, over 36,000 acres of school land in these counties sold at an average price of only 74 cents an acre. Virtually all leases that had been issued in Athens, Gallia, Washington and Scioto Counties were permanent, and it is here where the negative impact of these leases upon the sale of school land was concentrated. Nearly 14,000 acres sold for 25 cents an acre or less. Two 80-acre lots in Lawrence County sold for 6 cents an acre. As Lewis told the legislature in his report, "…we cannot look at it [the sales data] without starting back and wondering how it was possible to suffer a law to remain so long in force, under which such enormous waste of this sacred fund has been practiced." Such transactions were "…a sacrifice of public property almost without parallel" (1839, pp. 58-59).

Table 5:2 about here

The rest of the entries in Table 5:2 show how fortunate it was for Ohio that most of the school land in the state had not been leased out on a permanent basis. They also compel us to utterly reject the Federal Competition Hypothesis. Between 1829 and 1842, section 16 land in Ohio sold for an average of $4.10 an acre—over three times the average price of $1.33 an acre at which the federal government sold seven million acres in the state during the same period. If we exclude from our calculation the original areas of settlement where permanent leasing was concentrated, the average price of school land was $4.92. There is no need at this point to throw even more shade on the Federal Competition Hypothesis, but the sales data indicate that the "government price" of $1.25 an acre did not even provide a focal point for school land sales. Only 3% of the transactions were pegged at this price, and only 7% fell between $1.20 and $1.30.

More evidence that school land sales were not subject to the systematic collusion that permeated the sale of federal land was the responsiveness of prices to what land was actually worth. A strong indicator of land values at this time, due to the high costs involved in getting products to market, was access to a nearby navigable body of water. Where no such natural features existed, the building of canals and roads to move people and goods more cheaply and efficiently promised to yield exceptional returns on investment. There was perhaps no greater booster of such infrastructure projects than George Washington. Soon after the War for Independence had ended, Washington became president of the Potowmack Company, which obtained a charter to build locks and canals around impassable falls and rapids on the Potomac River. These structures would extend navigation deep into Maryland, and from there a road was to be built to join up with the Ohio River.[16] As Washington related to his friend and advisor David Stuart, "…encouragements to extend the inland navigation of this Commonwealth where it is useful & practicable, (which will not only be of amazing convenience & advantage to its Citizens, but sources of immense wealth to the Country through some of its channels)—are among the great & important objects which will come before you" (Washington 1785).

Entries in the next three rows in Table 5:2 reveal the impact that transportation hubs had upon land values. The most profitable sales of section 16 occurred in counties with major ports on the Ohio River, as well as in counties traversed by the two main canals that were by then already in place. Martin's Ferry (across from Wheeling, Virginia) and Steubenville are not major metropolises today, but at that time they were bustling river towns. School land there sold for an average of $8.78 an acre. It went for over $9.00 an acre in the counties along the route of the Miami and Erie Canal, which ran from Cincinnati to Toledo. Several 80-acre lots located along the canal in Cincinnati sold for more than $40.00 an acre. The "canal effect" is less pronounced in the counties through which the Ohio and Erie Canal passed, but this is mainly because this entry does not register the sale of school land at either end of the canal. Portsmouth, located on the Ohio River in

Scioto County, could have been classified as either a river port or a canal route city. This area was settled very early on, however, and almost all the school land had been leased out on a permanent basis. Those in the county who could be persuaded to convert their leases into fee simple title paid only 37 cents an acre on average to do so. There are also no data for school land located at the northern terminus of the canal in and around Cleveland. This is because Cuyahoga and several neighboring counties were located in the Western Reserve, and no section 16 land was sold there.

The State Auditor did not collect (or at least did not report) sales price data in subsequent years, but the proceedings of the Ohio state legislature reveal that between 1842 and 1851 they passed 225 bills to approve the sale of school land. Legislation enacted in 1843 required that all school land be sold for at least its appraised value, and during the next few years almost all acts approving sales simply indicated that the townships needed to abide by this requirement (*Acts of a General Nature, Passed by the Forty First General Assembly of the State of Ohio,* 1843, pp. 20-25). As shown in Table 5:2, 20,000 acres were sold under the terms of this legislation. The state legislature amended the law again in March of 1845 to require that school land fetch at least $5.00 an acre (*Acts of a General Nature Passed by the Forty Third General Assembly of the State of Ohio*, 1845, p. 58). Nearly 94,000 acres of section 16 were subsequently sold for at least this much. Some bills approving school land sales directed township authorities to act in accordance with both the 1843 as well as the 1845 legislation. We took this to mean that the land had to be sold for at least the appraised value or $5.00 an acre, whichever was higher. The bottom two rows in Table 5:2 show that on occasion, the legislature set minimum sales prices at specific amounts either under or above $5.00 an acre. The lowest such price was $2.50 for two sections in Williams and Scioto Counties in 1848, and the highest was $40.00 for a section near Cincinnati. In 1852 the legislature ended the practice of approving individual township sales. The new legislation that it enacted reinstated the 1843 law, which

required only that section 16 be sold for at least its appraised value (*Acts of a General Nature Passed by the Fiftieth General Assembly of the State of Ohio*, 1852, pp. 168-173).

What Table 5:2 tells us, then, is that authorities in Ohio sold most of the section 16 school land for much more than the going federal price of $1.25 an acre. The key to their success, and thus to rejection of the Federal Competition Hypothesis, was to wait until the federal government had sold most of its land, and to thereby avoid competing against it in the real estate market. By the time the first school land sales got underway in 1829, 62% of all land sold in Ohio by the General Land Office had already been sold. There were close to a million people living in Ohio by then, and only the northwest area of the state could be described as still being at the frontier. To be sure, this course of action (inaction, really) was not the product of a well-conceived investment strategy. The Ohioans held on to the school land for decades after they received it because they did not believe they had the authority to sell it.

In any case, the value of land in section 16, either improved or unimproved, increased markedly as a consequence of it being in proximity to land that had already been brought into production. It seems likely that those whose farms were immediately adjacent to section 16 would have been particularly interested in acquiring a piece of it, say 40 to 80 acres, in order to augment their holdings. Others, whose aim was to bequeath enough land to provide each of their children with a viable farm, may have wanted a quarter section (160 acres), a half section (320 acres), or perhaps even more of the school land. Waiting for so long before selling also made it possible to get especially high prices for section 16 in areas that capitalized the value of being close to the Miami and Erie and Ohio and Erie Canals. It is beyond the scope of this present study to investigate micro-level patterns of land acquisition, but it is a matter deserving of future research.

Superintendent Lewis (1839) was fully aware of these dynamics. After ruing the loss of so much revenue resulting from the misbegotten policy of issuing permanent leases, he took consolation in noting that “Fortunately, most of the land in the new counties of the

northwest portion of the state is unsold." He counseled the legislators not to approve any sales there until the federal government had sold off all its land in the area and the "country was settled." After that, he predicted, "The school lands in all that region, if carefully managed, will produce an average of more than $15 an acre" (p. 60).

It almost goes without saying, but not quite, that state and local officials needed to do more than just wait in order to get higher prices for school land. They also needed to rebuff the collusive arrangements that kept federal land from being sold for more than the minimum price. The state government in Ohio did its part by requiring township authorities to obtain the legislature's approval before selling school land and, in later years, by enacting legislation requiring that it bring at least $5.00 an acre.

Another major factor mitigating against collusion (and low prices) in the sale of school land was the fact that revenue derived from the sale of section 16 was retained by the township in which it was located. As the citizens of colonial Massachusetts had understood a century and a half earlier, the Ohioans knew that every dollar collected from land grants to support their children's education was a dollar that would not be coming out of their own pockets, either in the form of rate bills or local taxation. Or, to cast things in a more positive light, they knew that money from the sale of section 16 would be a welcome supplement to their own public and private contributions. Local officials thus had strong incentive to sell the land for as high as price as possible. Proceeds from federal land sales, in contrast, flowed to Washington. It was thus of no concern to local officials, to the state, or to the citizens of Ohio in general that the federal government was letting land go on the cheap. To the extent it served to quicken the pace of federal land sales, it was actually in their interest not only to tolerate collusion but to encourage it. The sooner public land was transferred to private ownership, the sooner it would be entered on state and local tax rolls.

The last three rows in Table 5:2 report the average prices obtained in the sale of school land reserved for the Virginia Military District, the U.S. Military District, and the Western

Reserve. As indicated previously, the land that the federal government granted for the support of schools in these three areas was actually located in the Congress Lands, outside of these three areas. In many respects, sales were nevertheless conducted in the same way as in the rest of the state. The land was to be appraised by agents appointed by the state and was not to be sold for less than its appraised value. Sales would take place at public auctions that were to be advertised well in advance throughout the region (*Acts of a General Nature, Passed at the First Session of the Twenty-sixth General Assembly of the State of Ohio*, 1828, p. 23). As in the townships of the Congress Lands, all sales had to be approved, in writing and in advance, by a majority of adult white male residents (*Acts of a General Nature, Passed at the First Session of the Twenty-fifth General Assembly of the State of Ohio, 1827*, p. 103; *Acts of a General Nature, Passed by the Forty-seventh General Assembly of the State of Ohio,* 1849, p. 232).

There were no records to be found on individual sale transactions, but the State Treasury established a separate account for each of these tracts in the Permanent School Fund. It was possible to ascertain the balance of these funds in 1861, by which time virtually all of the land reserved for the schools had been sold (Taylor 1862). Dividing by acreage gives us the average price per acre, which turns out to be $1.49, $1.67, and $2.76 for the Virginia Military District, U.S. Military District, and Western Reserve, respectively. These amounts are all higher than the government price of $1.25 an acre, but they are a good deal lower than the average price that section 16 sold for in the rest of Ohio—or at least where it had not been previously leased out on a permanent basis.

Why did land reserved for the support of public schools in these three tracts sell for much less than in the rest of the state? There may have been others at work, but one key factor has already been identified. Township retention of section 16 sales revenue generated strong incentives to run competitive auctions and to obtain as high a price as possible. These incentives were a good deal weaker, however, when sales were not conducted by township officials, and when revenue was aggregated and distributed across such large

jurisdictions. The amount of school land in the Virginia Military District was equivalent to 165 townships. It was equivalent to 113 townships in the U.S. Military District and 145 townships in the Western Reserve. According to Lewis (1857), that such low prices were obtained in the sale of land reserved for schools in the Virginia Military District was also due, at least in part, to the fact that over 35 percent of it had been leased out on a permanent basis (this is a different Lewis, by the way—William, not Samuel). As noted previously, little sales revenue was collected when the holders surrendered these leases in exchange for fee simple title.

The somewhat better results for the Western Reserve are due to both timing and location. Although nearly 99 per cent of all school land reserved for the United States Military District had been sold by 1840, as well as most of the land for the Virginia Military District (Brough 1841), the legislation needed to approve sales for the Western Reserve was held up by a series of legal controversies until 1849 (Ford 1850). A large fraction of school land set aside for the Western Reserve was in the northwest corner of the state, and, as we noted previously, Superintendent Lewis had hoped that this land would fetch as much as $15 an acre. The land did bring higher prices than that sold earlier for the two military districts, but not nearly as much as Lewis had contemplated.

We see, then, that there were two major reasons why school land in most of Ohio sold for prices far higher than would have expected on the basis of the Federal Competition Hypothesis. The first is that the federal government had been selling land in the public domain for nearly three decades before section 16 sales began. By the time townships sold section 16, there was usually little or no federal land left to compete with it. The second is the incentive that township residents and officials had to maximize section 16 sales revenue when they were able to keep that revenue for themselves.

Benefits rarely come without costs, and so it behooves us to consider the negative consequences that accompanied the success that Ohioans had in raising significant amounts of revenue from the sale of school land. One potential downside is that the long delay

between the state's reception of the section 16 grant and when the land was put up for sale meant that an equally long time elapsed before any funds for education from this source became available. Contrary to Taylor's (1922) vision of what might have been, public schools did not pop up along the frontier in the early decades of Ohio's existence. In his travels across the state, one early visitor noted, he had rarely seen a schoolhouse (Wright 1819).

There is one bad outcome that might have been avoided had Ohio legislators (and Congress) been persuaded, at a much earlier date, that they had the authority to sell section 16. They would not have resorted to the contrivance of issuing permanent leases, which ended up costing them so much revenue when the school land was sold fee simple. Other than that, however, it is doubtful that Ohio would have been better off selling school land decades earlier than when they actually did. This is because the potentially deleterious effect of federal competition could best be avoided by waiting until all or most of it was sold. As it was, the ability to buy land from the federal government at $1.25 an acre made it impossible to collect more than negligible amounts of money from leasing school land. What would have happened if Ohio townships had not been able to sell school land for more than at $1.25 an acre? Paying out at six percent a year, the proceeds from sales at this price would yield a flow of only $48 a year—a meager level of funding for a township with many hundreds of school-age children.

What did have a major downside, however, was township retention of section 16 sales revenue. While this gave local officials strong incentive to get as high a price for it as possible, large differences in sales prices produced a great deal of inequality in school funding. Despite poor health, Samuel Lewis traveled across the state on horseback to visit as many schools as possible. What he saw made him keenly aware of how unevenly the revenue generated by school land sales was distributed: "At present, the wealthy places get a large proportion of the provision. Some townships, with from three to six hundred children do not receive, of public money, seventy dollars" (quoted by Lewis 1857, p. 153). The

differences he identified are confirmed by the data in the 1839 State Auditor's Report. At the bottom end, one township in Meigs County garnered a grand total of $84 from the sale of section 16, yielding a payout, at six percent interest, of $5 a year. Another township, in Butler County, sold its school land for a total of $8149, generating interest of $489.00 per year.

During this period in American history, when parents were largely responsible for the costs of their children's schooling, *any* infusion of public resources served to equalize access to education. Still, retention of section 16 sales revenue by the townships sharply limited the extent of equalization resulting from federal land grants to Ohio. Far more equalization was achieved in the wide distribution of sales revenue across all the schools in the Virginia Military District, the U.S. Military District, and the Western Reserve. In the Virginia Military District, for example, revenue was to be distributed to counties (and then on to districts within the counties) according to the number of children between the ages of 4 and 16, excluding black and mulatto children (*Acts of a General Nature Passed at the First Session of the Twenty-seventh General Assembly*, 1829, pp. 51-53). There was a tradeoff, however, between equalization and revenue maximization. The school land reserved for these three tracts sold at relatively low prices, which meant there was not a great deal of revenue per pupil to distribute.

In 1837 Isaac Crary succeeded in getting Congress to reserve section 16 in Michigan to the state as a whole instead of to the townships. This was a year before Lewis became Superintendent, and he must have been aware of Cary's innovation. It is also clear that Lewis was a strong supporter of the Equal Funding Principle: "Without recapitulating the items of finance, it may be sufficient to say, that something more is indispensable: *they should be distributed according to numbers*" (quoted by Lewis 1857, p. 153). The Superintendent, however, never urged the Ohio state legislature to consolidate section 16 revenue at the state level, as the legislature in Florida did, or to engineer a compensatory funding formula that would achieve a great deal of equalization, as they did in Indiana.

Why did he not do so? Lewis may have believed that moving forward on consolidation would have required an act of the U.S. Congress. He may have doubted that the Ohio legislature was likely to seek such approval, or that Congress was likely to give it. But there is another reason why he may not have pushed for consolidation. As can be surmised from his reports to the state legislature, Lewis appears to have been more committed to the Maximin Funding Principle than to the Equal Funding Principle. Article VIII, section 25 of Ohio's original state constitution of 1802 states that all schools within the state "…which are endowed, in whole or in part, from the revenue arising from donations made by the United States, for the support of schools, academies and universities, shall be open for the reception of scholars and students and teachers, of every grade, without any distinction or preference whatever." This had been taken to mean that all schools receiving public support were to admit indigent children free of charge, and Lewis had heard reports that in some places this law directive was being ignored. Lewis sent letters to all county auditors asking them to verify that orphans, abandoned children, and the children of those unable to contribute anything to their education were being allowed to attend school for free: He observed that "…while so much is done to add to the value of property, at least as much should be done …for the rescue of the thousands of youth from the ruin that awaits them" (Lewis 1839, p. 10).

Tennessee

Tennessee became a state in 1796, seven years after North Carolina ceded its Western Reserve, for the second time, to the government of the United States.[17] That part of the state that lay to the north and east of the Congressional Reservation Line was not made subject to the Public Land Survey. As in North Carolina, parcels of property there were defined by metes and bounds, "…without restraint, either with regard to time, manner, place, size, or shape" (Goodpasture 1899, p. 218). The location of the Congressional

Reservation Line, as well as the boundaries of other major tracts of land in Tennessee, were displayed in the previous chapter in Figure 4:4.

With no section 16 to reserve for the support of education, in 1806 Congress ordered the state to instead set aside an amount of land equivalent in size to the section 16 grant: "And the state of Tennessee shall, moreover, in issuing grants and perfecting titles, locate six hundred and forty acres to every six miles square in the territory hereby ceded, where existing claims will allow the same, which shall be appropriated for the use of schools for the instruction of children for ever." Another 100,000 acres was to be selected to support an academy in each county of the state (*U.S. Statutes at Large, 9th Congress 1st Session,* 1806, pp. 381-383). It appears that this latter directive was only partially carried out, or, if it was, the academy lands yielded only negligible amounts of revenue. Archival records from the State Treasurer's office indicate that between 1817 and 1823, academies in thirteen counties (all located in the eastern part of the state) received a total of $3480, which is less than $500 a year.

As in Ohio, the Tennessee legislature initially authorized only the leasing of school land, in a bill that also prohibited the cutting or destroying of timber on school land (*Acts Passed at the First Session of the Ninth General Assembly of the State of Tennessee*, 1811, pp. 138-139). Another fourteen years elapsed before the state authorized school land to be sold. Legislation enacted in 1825 stipulated that "…the lowest price of said lands when they are offered for sale, shall not be less than the price established by congress for the lands of the United States" [$1.25 an acre]. Parcels were to be no larger than 160 acres. Buyers were required to put half down and pay for the remaining half of their purchase within twelve months (*Acts Passed at the Regular Session of the Sixteenth General Assembly of the State of Tennessee*, 1825, pp. 132-135). This law was challenged in the courts, where plaintiffs charged that school land should not be sold because Congress had not given Tennessee permission to do so. Soon thereafter the legislature suspended the sale of school land, pending resolution of this litigation (*Acts Passed at the Extra Session*

of the Sixteenth General Assembly of the State of Tennessee, 1826, pp. 47-49). Archival records from the State Treasurer's office indicate that prior to the moratorium, the state had located only 18 sections of land for schools, (11,520 acres), all located in the south-central part of the state in Bedford County.

Neither the 1825 law nor the litigation that it engendered turned out to be of much consequence. The 1806 legislation had ordered the designation of school land "…where existing claims will allow," and virtually all the land in this area was already subject to existing claims. As noted previously, William Blount and other early investors had acquired millions of acres in the eastern and central parts of the state when it was still part of North Carolina. Although North Carolina voided its purchase of nearly 20 million acres from the Cherokee tribe, the Transylvania Company still held title to 200,000 acres. In what Abernethy (1955) calls the Great Land Grab of 1783, the North Carolina legislature put land throughout what would become Tennessee up for sale at very attractive prices. Accepting debt certificates that North Carolina had issued during the War for Independence, the state sold four million acres there for less than five cents an acre.

Another large portion of north central Tennessee, shown in Figure 5:3, was taken up by the North Carolina Military Reservation, set aside for bounties that had been awarded to the state's war veterans and their survivors. This was a very large tract of land, but the North Carolina bounties were far more generous than what the Congress of the Confederation awarded to Continental Army veterans. Privates could obtain warrants for 640 acres, captains for 3840 acres, and majors for up to 4800 acres. Warrants awarded to brigadiers and to chaplains were for 7200 acres. In the Glasgow Land Fraud, it was subsequently determined that a large but undetermined number of warrants, signed by North Carolina Secretary of State James Glasgow, had been granted to men who never served on the North Carolina line during the War for Independence (Bamman 2021). A significant amount of land in the North Carolina Military Reservation was also occupied by squatters. Deeming it likely that the reservation would not be adequate to satisfy all

claims, the legislature subsequently permitted the holders of military warrants to make claims outside of it. According to Corlew (1981), up to eight million acres of land in Tennessee outside of the North Carolina Military Reservation were exchanged for military warrants.

Legislation approved in 1823 gave squatters in Tennessee the right to preemptively purchase their land. It provided that "…all and every person or persons, who was or were in the actual possession of any vacant and unappropriated land north and east of the reservation line, and north of Tennessee River (except the Hiwassee District)," would be given first chance to purchase up to 160 acres of this land for 12.5 cents an acre (*Acts Passed at the First Session of the Fifteenth General Assembly of the State of Tennessee*, 1823, pp. 58-66). With so little land left unclaimed, the state managed to locate and to reserve for the use of its schools only 22,705 acres—less than five percent of the nearly 450,000 acres that should have been reserved, given Congress's directive to set aside one thirty-sixth of the area north and east of the Congressional Reservation Line for this purpose (Jones 1968).

State legislators in Tennessee were evidently aware that there would be little land to designate for the support of the schools under the terms of the 1806 Act, and in previous years had taken action to compensate for the shortfall. First, the legislation of 1823 to which we have just referred ordered proceeds from preemptive sales to be deposited with the Bank of the State of Tennessee. The Bank, in turn, was to pay out the interest earned on the investment of these funds to county school commissioners, who were to "…appropriate all moneys by them received under the provisions of this act, to the education of the poor, either by establishing poor schools in their different counties, or by paying the tuition of poor children in schools which are, or may be, established in their counties, as to them shall seem best, and in the purchase of books for the use of such children" (p. 64). This legislation reflected the view, dating back to colonial times and prevalent throughout the South and much of the rest of the country, that it was appropriate to provide public

revenue for education only if it were used to assist indigent children. In Louisiana, Mississippi, and Florida, revenue raised from sale of the school lands was directed to private schools for this same reason (Hyde 2017; Pyburn 1954).

Archival records from the Bank of Tennessee confirm that all preemptive sales were made at the price of 12.5 cents an acre—one tenth the prevailing federal preemption price of $1.25 an acre. According to archival records, by July of 1825 the Bank of Tennessee had collected only $89,218 from the sale of 713,747 acres spread across 34 counties in eastern Tennessee, with the largest amounts located in Warren, Greene, Lincoln, Franklin, Hawkins, Jefferson, Marion, and Jackson counties. In the end, total sales revenue from this source amounted to only $120,848 (Williams 1944). This was equivalent to selling the amount of land that Congress had promised the schools in 1806, i.e., one square mile out of every 36, for 27 cents an acre.

The state legislature took another corrective action in the arrangements it made for the sale of land in the Hiwassee District, which had been obtained from the Cherokees in 1819. None of the land in this area of approximately one million acres in southeastern Tennessee was subject to prior claims registered in North Carolina, nor available to North Carolina's veterans who had received military warrants (Jones 1968). In 1823 the legislature authorized the sale of Hiwassee land (in most cases to the "occupants" who were already living there), in accordance with a graduated pricing formula. Title to up to 160 acres could be obtained immediately at the price of $1.50 an acre. If not claimed within nine months, the price dropped to $1.00 an acre. If no entries had been filed in the six months following that, the price would be cut to 50 cents an acre, and, if still on the market six months after that, to 12.5 cents an acre (*Acts Passed at the First Session of the Fifteenth General Assembly of the State of Tennessee*, 1823, pp. 24-31). The Hiwassee District was surveyed into six-by-six-mile townships, in the same manner as land subject to the Public Land Survey, so the legislature could have designated section 16 to be reserved for the schools. What the legislature did instead in 1827 was to direct that half the

revenue collected from Hiwassee District land sales be set aside "…for the use, support and encouragement of common schools forever" (*Acts Passed at the Stated Session of the Seventeenth General Assembly of the State of Tennessee*, 1827, pp. 68-69).

The Hiwassee land sales turned out to be a significant source of revenue for Tennessee schools. Although about 20 percent of what was due from purchasers had not yet been paid and some sales were being disputed, the total amount realized by 1831 was $366,480 (Williams 1944). Legislation enacted in 1829 ordered county school commissioners to create individual school districts, and to annually apportion the interest paid on the school fund by the Bank of Tennessee, along with other revenue, to these districts in proportion to the number of children (boys and girls) between the ages of 5 and 15 (*Acts Passed at the Stated Session of the Eighteenth General Assembly of the State of Tennessee*, 1829, pp. 140-147).

Similar policies were applied to the Ocoee District, which the federal government acquired in 1835 under the terms of the Treaty of New Echota. Although the treaty was later rejected by a large majority of the Cherokee people, it was enforced by the federal government and the Cherokees were removed (Perdue and Green 1995). As shown in Figure 5:3, this tract was about the same size as the Hiwassee District and located just to the south of it. Legislation adopted in 1837 established a graduated pricing formula for land in the Ocoee that started at the lofty sum of $7.50 an acre.[18] Prices were then cut, in successive rounds, all the way down to one cent an acre. Proceeds were to be turned over once every quarter to the Superintendent of Public Instruction, who was to use them to support the common schools (*Acts Passed at the First Session of the Twenty-Second General Assembly of the State of Tennessee*, 1837, pp. 5-12). Ocoee District land sales turned out to be just as good a source of revenue for Tennessee schools as the Hiwassee, yielding $363,189 (Williams 1944). All told, sales revenue from land north and east of the Congressional Reservation Line amounted to a little over $850,000. If one thirty-sixth of this area had

been reserved for schools, as it was in states subject to the Public Land Survey, it would have worked out to an average price of $1.93 an acre.

The remainder of the state, to the south and west of the Congressional Reservation Line, was designated as the Congressional Reservation. The bulk of it was constituted by the land that the Chickasaws turned over to the United States in a series of cessions, culminating in the Great Chickasaw Cession of 1818. Under the terms of the Treaty of Tuscaloosa, the tribe abandoned this large portion of Tennessee and a piece of western Kentucky—otherwise known as the Jackson Purchase—in exchange for $300,000, made in annual payments of $20,000 for 15 years, along with the payment of $3115 that the tribe still owed to John Gordon and David Smith for the assistance they had rendered in fending off the Creeks in 1795.

Congress authorized the state of Tennessee to dispose of the land in the Congressional Reservation "…in the manner and under the same rules, regulations, and restrictions, as are prescribed by the laws now in force in the said state of Tennessee, for issuing grants and perfecting titles on claims of a like nature for lands lying north and east of the said line" (*U.S. Statutes at Large, 15th Congress 1st Session,* 1818, p. 416). In contrast to the policies that were implemented in other acquisitions that formed the public domain of the United States, this legislation did not call for this part of Tennessee to be subjected to the Public Land Survey and to then sold by the federal government. It also failed to reserve any land there for the support of schools.

The Tennessee legislature did order the Congressional Reservation to be surveyed. As in Ohio's Western Reserve and U.S. Military Reservation, surveyors were ordered to stake out squares of five miles by five miles, containing 25 sections, instead of the six-mile square townships created by the Public Land Survey. Survey lines were to be used to define property boundaries, but there was no requirement that parcels be of any regular shape or conform to section borders (*Acts of a Public and General Nature Passed at the First Session of the Thirteenth General Assembly of the State of Tennessee*, 1819, pp. 3-

27). The state of Tennessee continued to patent titles defined by metes and bounds, thus rendering the rectangular survey a mere formality (Smoot 1998).

In 1824, James Polk, a member of the Tennessee state legislature, argued that because it had been possible to set aside so little land for schools north and east of the Congressional Reservation Line, Congress should reserve for the schools of Tennessee whatever land it could in the Congressional Reservation, i.e., to the south and west of the Congressional Reservation Line, to make up for the shortfall (Jones 1968). The legislature agreed with Polk and sent a memorial to that effect to Congress (Jones 1968). In 1828, now congressman Polk managed to get to the floor of the House a bill that he characterized as quite modest in scope. He informed the House that most of the land in the Congressional Reservation that was worth claiming had already been claimed or was otherwise occupied by squatters. He did not have to remind anyone that neither Congress nor the Tennessee state legislature were of a mind to remove the squatters, so Polk proposed that the schools get whatever odd bits of land that remained unclaimed and unoccupied. His bill called upon Congress to therefore grant to the state of Tennessee "…certain vacant refuse lands…to be appropriated to the purposes of education" (*Register of Debates, 20th Congress 1st Session*, 1828, p. 2496).

According to Polk, the scraps of unclaimed land in this area amounted to only about 500,000 acres, worth, on average, no more than 12.5 cents an acre. If so, the "vacant refuse land" would have contributed only about $62,000 to Tennessee schools. As he saw it, Tennessee was asking very little of the federal government: "If the bill under consideration should pass, granting to Tennessee these vacant remnants of land, it would be but a poor equivalent for the loss she had sustained in not receiving the common school land, which she had a right to expect, when the act of Congress of 1806 was passed" (p. 2499). Polk asserted that the federal government would actually come out ahead on the deal, as it would cost more money to survey the land and to set up land offices than would be realized from the sale of it.

John Bell, who also represented Tennessee in the 20th Congress, delivered a long speech in favor of the bill. David Crockett, whose congressional district was located in the Congressional Reservation, was even more emphatic than Polk in describing the poor quality of the land that Tennessee would obtain. It was "poor, barren country," and much of it was constantly inundated. Perhaps 200,000 acres of it would not bring even a penny an acre (p. 2519). Moreover, what little sales revenue would be generated would be directed to a most worthy cause: "It is not only to make glad the hearts of the poor, but it is also to educate the poor man's child. It is to snatch from the vale of poverty and obscurity many a youth, and dispel the gloom of ignorance that surrounds him, by inviting him to enter the doors of a respectable county school" (p. 2520).

Opponents of the bill were skeptical of Polk's claims and suspected that the fellows from Tennessee of trying to pull a fast one on them. Titus Brown of New Hampshire, a member of the select committee to which the bill had been referred, complained that the "information" provided to the committee was "…the mere impressions, or conjectures of certain gentlemen. Not one of them would venture an estimate of the quantity or value of the lands—and for a very good reason. They had no data upon which to found an estimate" (p. 2522). John Locke of Massachusetts observed, correctly, that the Congressional Reservation was closer to 8.5 million acres in size than 6.5 million, as Polk had stated. Information that he had obtained suggested that the amount of unclaimed land might total as much as four million acres (p. 2519). This was eight times as much as Polk had indicated, and over five times the amount of acreage that other new states had received from their section 16 grants. Locke and Brown suspected that the Tennesseans were also lowballing their estimates of what the land was worth. They thought it was likely that much of it would bring at least the minimum federal price of $1.25 an acre. Locke noted that the land at stake would command a much higher price if it were kept off the market until the area became more settled and more developed (Jones 1968).

In reality, there was some merit in what both sides had to say. Some of the soil in Western Tennessee was thin, not very fertile, and prone to flooding. But some land in this area was well suited to growing crops—especially cotton. According to the U.S. Census, by 1830 nearly 100,000 white settlers had already moved into Western Tennessee, bringing nearly 28,000 slaves with them. By the time of the Civil War, southwestern Tennessee was producing over a quarter million bales of cotton a year, or about five percent of the nation's total. In light of how much opposition the bill had generated, further action on it was postponed until the beginning of the next session.

When debate resumed, those who took the floor expressed other objections to the bill. In their view, the Tennesseans had only themselves to blame for reserving so little land for schools north and east of the Congressional Reservation Line. Charles Miner of Pennsylvania feared that Polk's bill was "an entering wedge" of a plan favored by the new states. If the federal government were to give this land to Tennessee, it would be a precedent for turning the entirety of the public domain in new states over to the states themselves, thereby ending federal land sales and forfeiting whatever revenue was to be derived from this source (*Register of Debates, 20th Congress 2nd Session*, 1829, pp. 165). Miner's concerns were not unwarranted. This was tantamount to what the Alabama state legislature requested of Congress a few years later, in January 1828.[19]

Polk's bill hit a major roadblock when David Crockett, who had expressed strong support for it in the previous session, turned against it. After speaking with his constituents, he had concluded that their best interests, as well as that of the country, would be best served by simply giving them the land directly. The amendment he proposed, which would replace Polk's bill in its entirety, would allow all those "…in the actual occupation, or possession, of any of the vacant and unappropriated lands of the Unites States within that part of Tennessee lying South and West of the Congressional Reservation Line," to claim 160 acres free of charge. In Crockett's mind, the squatters were "…the hardy sons of the soil, men who had entered the country when it lay in a state of native wildness; men

who had broken the cane, and opened in the wilderness a home for their wives and children. These "enterprising and industrious settlers" were richly deserving of the land they occupied," and should be afforded the right to preemptively claim 160 acres of it their land at zero cost. He opposed setting aside any land for the support of schools, asking "…is it fair for the General Government to make a donation of the whole (school lands] for the purpose of raising up schools for the children of the rich?" (*Register of Debates, 20th Congress 2nd Session*, 1829, pp. 162). Had he not been killed at the Alamo, Crockett might well have gone down in history as the patron saint of squatters.

What accounts for Crockett's abrupt change of heart? According to Jones (1968), squatters had concluded that the federal government was never going to evict them from the land that they now occupied, but there was at least some possibility that the state of Tennessee might. This was not a chance they wished to take. But why did Crockett now oppose reserving land for schools, when he had previously expressed such strong support for the policy? And what did he mean about "schools for the children of the rich"? He complained that when Tennessee split off from Tennessee, 305,000 acres had been allocated to the University of North Carolina and other colleges, which he viewed to be of no benefit whatsoever to his constituents. He may have also been referring to another piece of legislation, enacted in 1825, that instructed the Treasurers of East and West Tennessee to make interest payments of six percent a year on the revenue collected from school land sales to county academies (*The Statute Laws of the State of Tennessee of a Public and General Nature,* 1831, p. 165). Granted, the academies were private schools, attending primarily by the children of the well-to-do. As indicated previously, however, this money was to be used to pay the tuition of orphans and other poor children. Evincing special concern for the children of the least well off, this policy is a clear expression of the Maximin Funding Principle and far more equitable than how Crockett characterized it.

Crocket, it seems, was engaging in demagoguery—what else is there to call it? —but Polk's bill progressed no further through the House. For the next twelve years the fate of

unclaimed land in the Congressional Reservation remained up for grabs, though it grew smaller and smaller in quantity as settlers continued to flow into the area. By 1840 the white population of Western Tennessee had grown to 137,000 and the number of slaves to nearly 57,000. In 1841 Congress finally enacted legislation that David Crockett, were he still alive, may or may not have found acceptable. It made it possible for squatters, "…entitled to the right of occupancy and preemption according to the laws of Tennessee," to obtain title to 200 acres of land for 12.5 cent an acre. (*U.S. Statutes at Large, 26th Congress 2nd Session,* 1841, pp. 412-413). In selling the land, however, Tennessee was to act as an agent of the United States, and to transfer all sales revenue to the U.S. Treasury. This unfortunate feature was removed in 1846, when the United States relinquished all unclaimed land in the Congressional Reservation to the state of Tennessee. The federal government also agreed to return the proceeds from all sales made during the previous five years (*U.S. Statutes at Large, 29th Congress 1st Session,* 1846, p. 66-67). Preemptors were originally given four years to pay, but in 1849 the time frame was extended out to seven years (Jones 1968).

Despite his early efforts to reserve land for schools, James Polk, now president of the United States, appears to have had no concerns about that no land was set aside for the schools. At least there is no mention of it in his diary. which reveals that his attention was firmly fixed on a much grander project—the war that he so badly wanted to have against Mexico (Quaife 1910).

Indiana

When Indiana was admitted in 1816, its legislators, like those in Ohio, did not believe that they had the right to sell section 16. They originally authorized township trustees to issue leases of up to seven years in length "for the best price that can be had." Tenants

were required to clear a portion of the land and to plant 25 apple trees and 25 peach trees annually. They were forbidden to take more timber than what was reasonable for their farm, or to "bark, bore, cut, or otherwise injure" trees in an unwarranted manner (*Laws of the State of Indiana Passed at the First Session of the General Assembly*, 1816, pp. 104-109). As in Ohio, the policy of leasing the school land produced a great deal of headache and very little revenue (Boone 1892). In January 1828, the state legislature authorized the sale of section 16. A majority of at least 20 "qualified voters" living in the township was required to register approval before the sale would transpire (*Laws of the State of Indiana Passed at the Twelfth Session of the General Assembly,* 1828, pp. 112-114). This law reaffirmed that sales proceeds were to "forever be applied to the use of the inhabitants of the respective townships, in the support of common schools therein."

Indiana had not yet been given permission by Congress to sell section 16 when this legislation was enacted, but the preface to the act, which stated that "…an opinion has become prevalent" that the land should be sold, suggests that the legislature was aware that this was in the offing. If so, they were correct. In 1828 Congress explicitly granted Indiana the right to "…sell and convey, in fee simple, all, or any part, of the lands heretofore reserved and appropriated by Congress for the use of schools within said sate, and to invest the money arising from the sale thereof, in some productive fund." The legislation also reaffirmed that sales proceeds from the sale of section 16 were to be retained by the township in which it was located (*U.S. Statutes at Large, 20th Congress 1st Session,* 1828, pp. 299-300).

Table 5:3, based upon data compiled by Boone (1892), reports sales figures for school land sold between 1828 and 1856. By this time over three fourths of the 601,000 acres of school land that the federal government had granted to Indiana had been put into private hands. Almost all 91 counties reported revenue figures, but it is possible to calculate price per acre only for the 48 counties that also reported how many sections of land had been

sold. Except for a cluster located in the northwest, the non-reporting counties were scattered evenly across the state.

Table 5:3 about here

As the entries in this table indicate, prices varied considerably from county to county. Although only one section of school land was sold in each case, those located in Wells and Washington Counties brought $42.97 and $38.36 an acre, respectively. Four sections in Union County, located on the border with Ohio, sold at an average price of $9.22 an acre, while 11.5 sections sold in Vigo County averaged $7.12 an acre. Section 16 in counties traversed by the Wabash River appear to have been more attractive in general, as the average price of $5.01 an acre that buyers paid was a good deal higher than the $3.30 an acre they paid on average in other counties. The only place where section 16 sold for less than $2.00 an acre was Lake County, located in the northwest corner of the state. We also came across a snippet of sales data for Springfield Township in Franklin County, located on the Ohio border. According to Bossert (1930), school land sold there in 1835 brought an average price of $10.93 an acre. The average price for all of Franklin County was $6.35, so we can infer that section 16 prices varied considerably within counties as well. The average price of section 16 across the entire state was $3.55 an acre, or nearly three times the $1.25 an acre minimum federal price. The price of school land also reflected its market value. These findings demand rejection of the Federal Competition Hypothesis, with extreme prejudice.

The reasons why section 16 prices in Indiana were so much higher than the price paid for federal land were the same reasons why this occurred in Ohio. First, over 20 years separated the commencement of federal land sales (in 1807) and the first sales of section 16 (in 1828). The school land, moreover, could not be sold until a majority of at least 20 electors in a township registered their approval. Competition with federal land sales was thus minimized because much of it in the township, if not all of it, had already been purchased and settled before section 16 went on the market. A second major factor was the

retention of sales revenue by the townships, which gave local authorities strong incentives to get as much for the school land as they could.

The large differences in sales prices that we observe in Table 5:3 necessarily resulted in large differences in the amount of public support provided to schoolchildren in the state. This violation of the Equal Funding Principle was not lost on Indiana's first State Superintendent of Public Instruction, who inveighed against it: "Such a rule must operate with great inequality and injustice. In one township the section falls on the prairies of the Wabash, where the soil is the richest ever shone on by the sun or wet by the dews of heaven; in another it falls in the swamp or a lake, or on a rocky bluff, where six grasshoppers could not find a living. In one township the fund would support without a tax schools all the year; in another there would be little, if any fund at all" (Larrabee 1853, p. 20). As indicated in the previous chapter, the Indiana legislature voted to implement the policy that Larrabee advocated, which was to consolidate section 16 revenue into a single state fund. The courts rejected the consolidation reform, but the legislature achieved some degree of equalization by adopting a compensatory apportionment formula for state assistance. Townships that acquired little revenue from the sale of their school land received proportionately more state funding, while those where section 16 sales revenue had been bountiful received less.

Illinois

After Illinois became the 21st state in 1818, the first session of the state legislature, held in Kaskaskia, immediately took up the question of what to do with the section 16 grant. Expectations ran high. According to Cook (1912), "The sixteenth section was from the first a matter of warm interest to the people and they expected the income from it to contribute very materially to the fund that was to be needed for the education of their children" (p. 28). Legislation enacted in 1819 called for section 16 to be surveyed into lots of at least 40 acres but no larger than 160 acres.[20] As in Ohio and in Indiana, township trustees were

initially permitted only to lease the school land, in this case for terms up to 10 years (*Laws Passed by the First General Assembly at Their Second Session*, 1819, pp. 107-109).

Soon after Congress gave Ohio the go-ahead, however, the Illinois state legislature authorized local officials to sell section 16. The legislature set the minimum price of section 16 at the same $1.25 per acre that the federal government had set for its land in the public domain. Buyers were required to pay with gold or silver specie, or with notes issued by the Bank of the United States, but they could spread their payments across five annual installments. This law also included a feature of federal sales that we have previously identified as facilitative of collusion. Any land not sold at public auction—which happened when buyers were dissuaded in one way or another from crying out a bid—could be subsequently purchased via private entry by the first person willing to pay the minimum $1.25 an acre (*The Revised Code of Laws of Illinois*, *Sixth General Assembly*, 1829, p. 150-4). Here, it would seem, the Federal Competition Hypothesis is on firm footing. It suggests that the members of the legislature had resigned themselves to the prospect of obtaining no more for their school land than the low price at which what the federal government was selling off the rest of the public domain. This legislation contained another provision, however, that stood in sharp contrast to federal practice:

> When the inhabitants of any township shall be desirous to sell and dispose of section numbered sixteen…they shall make their wish known to the said commissioner by a petition in writing, which shall be signed by at least nine tenths of the freeholders and householders of the township, and which shall be signed publicly, and at their own free will and accord, at any place in the township at which they may assemble, and which shall be done in the presence of at least two good citizens of the township, and shall make oath that said individuals signed said petition freely, and that the true intent and meaning thereof was made known and explained to them previous to signing, which oath shall be in writing, signed by the person making the same, on the petition, or the same shall be annexed thereto (p. 151).

It is difficult to conceive of 90 percent of the members of any group approving any meaningful proposition, let alone under the conditions that were imposed to ensure that

anyone who signed the petition really meant to support it. It is not surprising that in 1830 only 400 acres of section 16 passed into private hands. A year later the legislature lowered the approval threshold, but not by much. They still required the signatures of three out of four adult white males in the township to approve a sale, and put in place the additional condition that the township be home to at least 50 white inhabitants (*The Laws of Illinois Passed at Seventh General Assembly*, 1831, p. 173). Ten years later the supermajority requirement was reduced again, this time to two thirds of adult white male inhabitants (*The Laws of Illinois Passed by the Twelfth General Assembly*, 1841, p. 263), but even this threshold should have insured that a substantial amount of federal land in the township had been sold before the school land was put up for auction.

Avoiding competition from federal land sales in this way was a major reason why school land sold for well above the minimum federal price in Ohio and Indiana, and one would expect this to have been the case in Illinois as well. Secondly, Illinois' enabling act, like those of other states admitted around this time, stated that "section numbered sixteen, in every township…shall be granted to the State, for the use of the inhabitants of such township, for the use of schools." As in Indiana and in the Congress Lands that comprised most of Ohio, this meant that revenue generated by the sale of section 16 belonged to the township in which it was located. As in these other states, township authorities in Illinois should have had strong incentives to obtain as high a price for section 16 as possible.

It is possible to evaluate the Federal Competition Hypothesis in a much more thoroughgoing manner in Illinois than in any other state because of access to a uniquely comprehensive collection of data. The Illinois Public Domain Land Tract Sales Database includes detailed records for all section 16 sales, as well as for sales of over 20 million acres of federal land sold by the Government Land Office. Also included in the Database are records pertaining to 10.25 million acres claimed through military warrants, as well as sales records for 1.46 million acres of swamp land, 150,000 acres of saline land, the

46,000-acre Seminary Grant made to establish the University of Illinois, 352,000 acres granted to Illinois to build canals, and 2.6 million acres signed over to the Illinois Central Railroad.

After the data were cleaned, there remained usable information on the sale of nearly 97% of the 996,320 acres of section 16 granted to Illinois.[21] Slightly less than two percent of the school land sold was "in lieu" land not located in section 16. Over 65 percent of section 16 was sold as lots of 40 (± 5) acres, and 27 percent in lots of 80 (± 10) acres. It was common for buyers to pick up two or more adjacent forty-acre lots at the same time, and for two or more buyers to join together to buy larger lots. Forty and eighty acre lots were in keeping with the scale of farming at this time, and so it makes sense that they would comprise the bulk of all sales. There were about 1900 transactions for very small lots, ranging in size from .1 to 5 acres, located in and around major towns and cities. At the other extreme were six purchases of an entire section of 640 acres, and seven for half-sections of 320 acres.

Table 5:4 reports the amount of acreage and average prices realized for both federal and section 16 sales in Illinois in the years before the Civil War. In this and in all subsequent tables, the figures listed are in thousands of acres. As we see here, the federal government began selling land in Illinois in 1814 when it was still a territory. Section 16 sales (except for the 400 acres sold in 1830) did not begin until 17 years later. This is a long time, but less than the 29 years between the start of federal and section 16 sales in Ohio or the 21 years that elapsed in Indiana. At this time Illinois was far less populated than Ohio. According to the U.S. Census, there were over 935,000 people living in Ohio by 1830 but only 157,000 in Illinois. In 1840 the population figures were 1,519,000 and 476,000, respectively. The number of school-age children in Illinois when the sale of school land got underway was much smaller as well. The sale of section 16 in Illinois could well have provided a relatively large amount of revenue per child—perhaps enough to give public schools there the sort of financial jump start that Taylor (1922) had envisioned.

Table 5:4 about here

As we see in this table, however, prior to 1830 less than 2.6 million of the over 20 million acres of federal land in Illinois had been sold. Competition from federal land sales might therefore have had a larger negative effect upon section 16 sales in Illinois than in Ohio. On the other hand, the high supermajority approval threshold, combined with the condition that there be at least 50 inhabitants already living in the township, meant that in most places most of the federal land had been sold before section 16 sales commenced. This should have weakened the competition from federal sales and allowed the value of section 16 to increase as surrounding land was brought into cultivation. What is clear is that the supermajority approval and minimum resident requirements resulted in very little school land being put up for auction in the early years. Between 1831 and 1834 the total volume of section 16 sales was a mere 69,000 acres. The average price of $2.24 per acre was a dollar higher than the federal price of $1.25—not bad, but not great. The good news is that authorities in Illinois had not committed the colossal error made in Ohio of issuing permanent leases for section 16. In fact, no leases ever extended beyond 10 years in length (Cook 1912).

The second set of columns in Table 5:4 show that military warrants, issued to War of 1812 veterans, were used to claim over three million acres in Illinois. The entries in the database register the date that the warrants were issued, which was between October 6, 1817 and January 29, 1819, and not when they were redeemed at the Government Land Office. We think it is safe to assume, though, that military warrants were not still hanging over the market when section 16 sales began more than a decade later. The 19,000 acres worth of warrants dated after 1831 but before 1839 were valid only for land in the Illinois Military Tract. About 13,000 acres were dated from 1839 to 1846, almost all redeemed for land located outside of the Tract. Both quantities were too small to have had much impact on section 16 sales.

As we see in Table 4:4, the 184,000 acres of school land 16 sold between 1835 and 1838 fetched an average price of $3.18. These sales occurred at the height of the great land boom which, as we saw in Figure 5:1, was sweeping across the entire country. During these four years the federal government sold nearly 7.1 million acres in Illinois—at the minimum federal price of $1.25 an acre. Although the price of federal land did not rise during the boom nor fall when it was over, the average price of section 16 did fall in the years following the Panic of 1837—to $2.52 between 1839 and 1842 period, and even lower, to $2.18, in the following four years. The lowest prices ever received for section 16 were from sales that took place between 1847 and 1850, when the average price dropped to $1.88 an acre. It is possible that the massive infusion of new military warrants into the Illinois land market depressed prices, which would be consistent with the Federal Competition Hypothesis. Another factor that likely depressed land prices was the sharp drop in the prices for grains and other agricultural commodities.

The main reason why school land sold for such low prices during these years, however, was a major change in state policy. The school law enacted in 1841 removed the $1.25 minimum price constraint. It ordered township trustees to henceforth arrange for the appraisal of school land and ordered that "…no land shall be sold for less than its valuation by the trustees (*Laws of the State of Illinois, Passed by the Twelfth General Assembly*, 1841, p. 265). Amendments to the law made in 1845 allowed any school land that had remained unsold for more than two years to be reassessed—which could end up being far less than $1.25 an acre (*The Laws of Illinois Passed by the Fourteenth General Assembly*, 1845, p. 56). A substantial amount of land qualified for reassessment under this provision. Between 1847 and 1850, over 115,000 acres of section 16 brought less than $1.25 an acre. Nearly 20,000 acres was auctioned off for between 10 and 25 cents an acre. These cut-rate sales all occurred in the far south of the state, where the land was ill-suited for cultivation. Most of Illinois was part of the "grassland peninsula" stretching across the Midwest and ideally suited for the agriculture of corn, wheat, hogs, and cattle (Bogue 1965).

In contrast, the southern part of the state, according to Adams (1996), is "…more similar to Appalachia and the Ozarks than it is to the prairies that lie to the north" (p. 1).

Was it not a bad mistake to have let this ground, poor as it was, go for so little? Surely the option value of holding on to it was worth far more. It turns out that it was not. In 1904, George Washington Fithian, former congressman and Commissioner of Railroads and Warehouses, purchased 23,553 acres in this area from the Illinois Central Railroad. The average price he paid was 17 cents an acre.[22] Officials at the time presumably could have sought to replace section 16 with land that was fit for cultivation and thus much more valuable, but they did not. The seven southern-most counties in Illinois designated only three sections worth of in lieu land in total, which is similar in proportion to the rest of the counties in the state. It could be, in this part of the state, that sections with better land were not selected in place of section 16 because such sections could not be found. Still, even during this period of tough economic times, when large quantities of low-quality land were being sold, the average price of $1.88 per acre for section 16 was well above the standard $1.25 per acre federal land price. It was over two and a half times the 72 cents an acre that the large new wave of military warrants brought in the marketplace.

Section 16 prices rose sharply beginning in 1850. Over 210,000 acres sold between 1851 and 1854 at an average price of $2.97 an acre, and the 92,000 acres sold between 1855 and 1858 yielded an impressive average price of $8.17. The small amount of section 16 that remained after 1858 averaged $7.62 an acre. As shown in the entries in Table 5:3, by 1855 there were less than a million acres of federal land left in Illinois, and almost all the military warrants had cleared the market. These figures are consistent with the conclusion reached in analyzing the sale of school land in Ohio and Indiana—the best way to counter federal competition in the land market was to wait it out.

There were other factors that boosted section 16 prices during the 1850s. One was the steady rise in the prices of agricultural produce during these years. Another positive influence was construction of the Illinois Central Railroad, which improved market access

across the entire expanse of the state. Figure 5:3, a reproduction of an advertisement placed in the *Ogle County Reporter* on June 21, 1855, provides some documentary evidence of what the railroad meant for land values. Announcing an auction for the sale of section 16 in Township 24 Range 8E, the ad described it as "best upland prairie," and noted that the railroad ran through Foreston, (now Forreston), which was only three miles away.

Figure 5:3 about here

By the time the Civil War started, the people of Illinois had sold almost all the nearly million acres of section 16 at an average price of $3.68 an acre—nearly three times the federal price of $1.25 per acre, and over four times the 88 cents per acre that it cost to acquire land with a military warrant. We can therefore reject the Federal Competition Hypothesis out of hand. But we can do more than that. Our analysis of section 16 sales in Ohio dealt another blow to the Federal Competition Hypothesis by showing that the prices obtained for school land were much higher in areas located near major canals and river ports. Such evidence, suggesting that the land sold for what it was actually worth, contrasts sharply with federal land sales, where most land sold for the uniform price of $1.25 regardless of its actual value, and for much less than that following the large price cuts prompted by the Graduation Act of 1854.

The comprehensiveness of the Illinois data allows us to take a deeper look at the Federal Competition Hypothesis by comparing section 16 prices with those obtained in the sale of land from other grants that the federal government made to the state of Illinois. These include: 1) the Saline Land Grant, for six sections of land in and around salt licks and salt springs; 2) the Swamp Land Grants, beginning in 1850, of land that was ostensibly unfit for cultivation; 3) the Canal Land Grant, received in 1828, used to underwrite construction of the Illinois and Michigan Canal linking Chicago with the Mississippi River; and 4) the Illinois Central Railroad Grant.

Tracts of land transferred to the state of Illinois by the Saline Land Grant were scattered throughout the state, but by far the most important were along the eponymously named Saline River, where massive deposits were found. Here the state of Illinois leased extraction rights to private contractors. Salt production became a thriving industry and the state earned a steady stream of revenue (Fliege 2002). Land surrounding the salt works, on the other hand, was of poor quality and there was little demand for it. As we see in Table 5:5, 121,000 acres of Saline Land sold between 1831 and 1838 at an average price of only 59 cents an acre.

Table 5:5 about here

Much of what Illinois procured under the Swamp Land Grants was indeed swampy and untillable. Hundreds of acres sold for a penny an acre and thousands more for less than a dime. Nearly half of this ostensibly worthless land, however, sold for over the federal minimum price of $1.25. Some 63,000 acres brought $5.00 an acre or more, and the entirety of the 292,000 acres sold between 1851 and 1862 averaged $1.37 an acre. How was it that land, officially classified as worth little or nothing, sold for more than that what the federal government was charging for land in general? One reason, as noted previously, is that some of it was decent enough ground. Even without investments in drainage, a great deal of soil that was not suitable for growing grain could be used for cattle-grazing.[23] We think that another reason why some of the swamp land fetched such good prices was because Illinois transferred swamp land to the counties, which thereby became the recipients of the revenue obtained from selling it. As with section 16, local governments had ample incentive to maximize sales revenue when they were able to keep it.

The Canal Grant was composed of alternating sections in the five-mile strips located along both sides of the Illinois and Michigan Canal. What Illinois received from the federal government and turned over to the Illinois Central Railroad were alternating sections going out six miles in both directions from the tracks.[24] We assume that the Illinois Central, which was put in charge of sales, sought to get the best possible price for it. As we see

in Table 5:5, land in these prime locations did sell at a premium. The Canal land brought $8.17 an acre on average, and the IC land $10.17. As the entries in the far-right column indicate, the price of school land sold during comparable periods fell between the extremes of the saline and swamp land on one side and the canal and railroad land on the other. If section 16 constituted a random sample of land in Illinois, this is what we would expect to observe if it were sold for what it was worth.

The richness of the Illinois data also makes it possible to assess section 16 sales prices by estimating a hedonic pricing model. We have already identified, at least in a prima facie way on the basis of aggregate sales and average prices, several important determinants of land prices. These include the quality of the soil, the extent to which federal land in the township had already taken off the market before section 16 sales began, the prices of agricultural commodities at the time of sale, and proximity to water or rail transportation. This suggests an OLS regression equation of the following form:

$$Y_i = \alpha + \beta X_i + \varepsilon_i$$

where

Y_i = the average price at which section 16 in each township was sold. Because the size of lots that were auctioned ranged from less than an acre up to the entire section of 640 acres, we calculated the average price obtained for all purchases made in each township. These almost always occurred simultaneously, or within a short span of time.

X_i = a set of explanatory variables that include:

- The percentage of federal land in the township sold prior to the first sale of land in section 16. The larger the share of the township that was already in private hands before any school land was sold, the higher the price is predicted to be. We expect this to be due not only to less competition from federal land sales, but also to section 16 capitalizing the value of being surrounded by settled farms and established communities. On average, more than ten years transpired between the time the General Land Office initiated federal sales in a township and the first auction of section 16, and by that time

over 60 percent of the federal land had been sold. In some townships this measure is biased downward, in that some of the land there was settled by those who obtained it with military bounties, or purchased it from the swamp, saline, canal, or railroad grants.

- The Farm Product Wholesale Price Index (Department of Commerce 1975). Illinois rapidly became the agricultural leader of the United States. In 1850 Illinois produced nearly as much corn as Ohio, and by 1860 was far and away the top-producing state. By then Illinois also produced more wheat than any other state, and it was second only to Texas in cattle production and to Iowa in hogs. We therefore use a composite measure of the prices that farmers were receiving for produce in general, and specify it as the average of the current and previous year price index.
- The average value per acre of farmland and buildings in 1850, by county (Barnard and Jones 1987). This measure ranges from $3 to $14 an acre. It is primarily a measure of soil quality, but it also reflects how much land had been brought into cultivation.
- Three dummy variables that register proximity to a major transportation conduit. Farmers in such locations could ship their products to market and obtain the inputs they needed more cheaply and efficiently, thus making section 16 in these townships more valuable. The first takes on value of 1 for townships in which a significant river port or crossing was located. In the first part of the 19th century there were 25 such townships on the Mississippi, Ohio, and Wabash Rivers. The second pertains to townships located along the route of the Illinois-Michigan Canal, which ran southwest out of Chicago to the Illinois River, and from there to the Mississippi. It does not include townships that lay along the route but sold section 16 before construction of the canal began in 1836. The third variable is for townships located along the route of the Illinois Central Railroad. It takes on the value of 1 if the railroad sold any land in the township. As with the Illinois-Michigan Canal variable, we do not include townships

that sold school land before the date that the Illinois Central bill passed Congress (September 20, 1850).

ε_i = a random error term.

We excluded from the regression three townships located in central Chicago and one in Peoria. As is appropriate for urban/commercial use, section 16 in these locations was subdivided into lots as small as half an acre. These sold for as much as $500 an acre. We also estimated the equation after excluding townships located in the Illinois Military Tract. The majority of land there was claimed with military warrants and not through purchases from the federal government land. Our concern was that this would, among other things, make the Percent of Federal Land Sold variable an underestimate of how much land had been taken off the market before section 16 sales began.

An undesirable feature of OLS in this context is that predicted values of the dependent variable (average price per acre) could fall below zero. We therefore ran a third equation based upon the log of the price variable, which assures that all predicted values are positive. Almost all sales occurred before the Civil War, and during this period there was no secular increase or decrease in prices. There was thus no reason to transform nominal into real dollars.

The results of these regressions are reported in Table 5:6. The top number in each entry is the estimated coefficient and the lower number in parentheses is the standard error. Coefficients that are twice the size of the standard error can be considered to be statistically significant.

Table 5:6 about here

In all three equations the coefficients of all but one variable are large and significant, both statistically and in their substantive impact. The coefficients were also similar in size and direction across all three equations, and the R^2 statistics of .42, .43, and .51 indicate that the variables account for a good share of variance in the average price of section 16.

The large coefficients of the Percent Federal Land Sold variable confirm what we had inferred from the aggregate sales data—the best way to fend off competition from federal land sales in the sale of section 16 was to wait until most if not all the federal land in the township had been sold. Going from one extreme to the other, i.e., from no federal sales to 100 percent, meant an additional $3.10 an acre, and slightly more if the Illinois Military Tract is excluded. We also see here that section 16 prices were very responsive to the price of farm products. The increase in the two-year average of the Farm Product Wholesale Price Index from 50 in 1844 to 96 in 1855 translates into a whopping $4.60 an acre increase in the average price of section 16.

Coefficients of the County Land Value variable are large and statistically significant, but smaller than expected. Theoretically, a dollar increase in average county land values should have been associated with a dollar increase in the value of section 16. If so, the coefficient should have been 1 and not .25. It is likely that this estimate is attenuated, however, given that the measure is a county average, and that there can be considerable variation in land quality across a county. Another probable source of attenuation in the estimates is the fact that the County Land Value is based upon both developed and undeveloped land, while section 16, when it was sold, was undeveloped land only.

The next set of coefficients that are reported show that proximity to transportation also had a large effect upon section 16 prices. Being located at a river port or alongside the Illinois Central Railroad added $3.30 and $1.91 an acre, respectively. The one incongruous result in Table 5:6 is the insignificant negative coefficient of the Illinois-Michigan Canal variable in all three equations. It is true that construction of the canal, which began in 1836, was interrupted by financial problems and by bad weather (Rae 1944). Still, it was a successful venture on the whole, in contrast to the Wabash and Erie and many other canals built around the same time. According to Putnam (1918), "…it not only transformed a wilderness into a settled and prosperous community, but it made Chicago the metropolis of the Mississippi Valley" (p. 155). Excluding the four townships in located in

Chicago and Peoria from our analysis is sure to have removed some of the positive impact that the canal had on real estate prices, but not all of it. In short, there is no ready explanation for this contrary result.

Earlier, in Figure 5:3, we pointed to an 1855 newspaper announcement of the auction of section 16 in a township in Ogle County. It alerted potential buyers to the high quality of the soil and its proximity to the railroad, but the sale had other things going for it as well. Grain prices were at a pre-Civil War high in 1855, and over 96% of the federal land in the township had been sold before the date of the sale. Because the township retained all revenue from the sale, the residents of Ogle County at the time were motivated to get the highest prices they could. How did that auction turn out? Very well, thank you. The land in this section sold for an average price of $14.05 an acre—nearly three dollars higher than predicted by the hedonic price model. This is within the range of normal regression error, but perhaps those participating in the auction got caught up in a bidding war and, in the excitement, ended up paying more than they should have.

That all this money stayed with township Range 8E Township Line 24 in Ogle County was wonderful for the people who lived there, and especially for the children they sent to school.[25] Other townships, in contrast, collected little revenue from the sale of section 16. Looking across the entire Illinois Public Domain Land Tract Sales Database, we see that sales proceeds ranged from a mere $101 for a section in Jackson County to $17,360 for a section of prime farmland in Livingston County. In the township located in what is now the Chicago Loop, 453 acres of section 16 sold for $105,237. When we examine the average prices realized for section 16 in all the townships in Illinois, the $90^{th}/10^{th}$ percentile ratio is 7.1, and the Gini Index is .54. By way of comparison, when the California State Supreme Court made its *Serrano v. Priest* ruling in 1971, the Gini coefficient for per-pupil expenditures across school districts was .17. The impact of so much inequality in section 16 sales revenue was not lost upon people living at the time. As we noted in the previous chapter,

in 1841 the Educational Society of Illinois urged the state legislature to consolidate section 16 revenue. No such action, however, was undertaken.

Alabama

As in the northern states admitted in the early decades of the 19th century, the first pieces of legislation adopted in Alabama to manage the section 16 grant were intended to guard against wasteful destruction of the land. The law of 1823 authorized county school commissioners to auction off leases of up to 10 years in length (*Acts Passed at the Fourth Annual Session of the General Assembly of the State of Alabama,* 1823, pp. 73-78). We could find nothing in the historical record to indicate how much revenue the leases yielded, but, if Alabama was like other states that initially leased school land, it was not much.

In 1827, one year after Ohio had received permission from Congress to sell section 16, Alabama was also given the green light. The following year the legislature authorized townships to sell section 16, in lots no greater than 80 acres in size, for at least its assessed value. Buyers were given up to four years to pay in a series of equal annual installments, with an interest rate of six percent charged on the remaining principal. Sales could commence once county school commissioners had received the approval of a majority of the "qualified electors" (indicated later that there needed to be at least 5) residing in the township (*Acts Passed at the Ninth Annual Session of the General Assembly of the State of Alabama,* 1828, pp. 31-35).

There are several reasons why section 16 sales in Alabama should have gone well. First, the federal government began selling land in Alabama in 1806—22 years before school land was put on the market. By then over 5.3 million acres had been purchased, suggesting that a significant amount of settlement had occurred before section 16 sales began. As in Ohio, Indiana, and Illinois, this should have had a positive influence on school land sales. Section 16 prices in Illinois moved up along with grain prices, and one would expect

the same thing to have occurred in Alabama with respect to cotton. Weldon (1935) believes that this was indeed the case, as a large share of the Section 16 school land was sold when high cotton prices created strong demand for land (p. 19). Finally, we surmise that local officials in Alabama, as in the other states where section 16 had been granted to the townships and sales revenue was retained by the townships, had strong incentives to sell the land for as high a price as possible.

Weldon does not cite any sources, but an 1853 Report of the Comptroller of Public Accounts confirms his positive assessment of section 16 sales. This document reports only total revenue realized by township and not the amount of acreage that was sold, but we can estimate a lower bound on prices. In previous analyses of sales data in other states, there were only two sales in Ohio in which section 16 sold for less than 10 cents an acre, which would yield a township only $64. A lower bound on sales prices can thus be estimated by assuming that in all Alabama townships reporting sales of $64 or more, all of section 16 had been sold. In many townships, this was in all likelihood not the case, so this is an extremely conservative assumption. Of those townships in Alabama that reported revenue totals, more than $64 was collected in 801 of them but fell below that figure in 71 others. On the basis of these same very conservative assumptions, we estimate that 512,640 acres—about 55 percent of all section 16 land granted to Alabama—had been sold by 1853.

Revenue figures reveal that there were some townships in which section 16 had to have brought at least $30 an acre. These were located primarily in counties which, according to 1850 Census figures, produced prodigious amounts of cotton and had correspondingly large numbers of slaves. The total amount of revenue realized from section 16 sales was $1.57 million, which means the average price could not have been lower than $3.07 an acre. Most likely it was considerably higher. Although some land brought very high prices during the "Alabama Fever" years of 1817-1819, federal land prices in Alabama had settled back down to the minimum $1.25 an acre several years before sales of section 16

commenced. Once again, the evidence runs overwhelmingly against the Federal Competition Hypothesis.

As reported in the previous chapter, in 1853 the state legislature called for an advisory referendum to elicit opinion concerning the consolidation of township funds into a single state fund. As we see in Table 5:7, the pattern of voting was highly correlated with section 16 revenue totals. There were 194 townships that netted $2560 or more—implying an average price of at least $4.00 an acre if all 640 acres in section 16 had been sold. Voters in these townships, who stood to lose money through consolidation, opposed the policy by a margin of more than two to one. There were an additional 42 townships in this bracket that, instead of listing vote totals, reported only whether a majority of voters had favored or opposed the measure. They, too, rejected consolidation, by a margin of 35 to 7. Three major cotton-producing counties—Dallas, Lawrence, and Wilcox—were all in the top quintile of section 16 revenue collected, but they did not participate in the referendum.

Table 5:7 about here

It is not surprising that most voters in these townships, which would have lost funding under consolidation, opposed the measure. What is surprising is how many of them supported consolidation anyway. To be sure, the referendum was not binding, and talk is cheap. Why not take the opportunity to express some noblesse oblige? Some plantation owners in these areas of high cotton production might also have voted in favor of consolidation because it made no difference to them whether their township kept section 16 sales revenue or not. As Hyde (2017) points out, they were sending their children to private academies or boarding schools, or employing private tutors. They were not going to send their children to public schools in any case, and so could well have felt that it was just as well for section 16 revenue be distributed evenly across the state. Nevertheless, their choices at the ballot box does reflect support for the Equal Funding Principle—albeit for white children only.

Townships in the next bracket had collected between $2559 and $1971 in the sale of school land. Assuming all 640 acres of section 16 in the township had been sold, this implies prices that ranged from $3.99 per acre down to $3.07, which is our estimate of the state average. These townships would have been slightly hurt by consolidation, but we see that over 60 percent of their voters were in favor of it. Four out of the five townships that reported election outcomes only, however, were opposed. Revenue totals ranging from $1970 to $1280 imply average prices of $3.06 to $2.00, again assuming that all school land in the township has been sold. Sixty percent of the voters in these townships, which would have benefited slightly, supported consolidation. Township outcomes were five in favor and six against. In the rest of the brackets, composed of townships that would have clearly benefited from consolidation, voters supported the policy by overwhelming margins. Those in townships that had collected less than $640, implying sales price of no more than $1.00 an acre, cast 96 percent of their ballots in favor, as did 92 percent of voters in the townships for which there are voting results but no sales data. Overall, support for the idea of pooling township funds into a single state fund earned the support of over four out of five Alabama voters. It is true that results were split evenly in the township that reported only outcomes, and some of the richest counties did not hold a vote. Still, it is puzzling, in light of these results, that the legislature chose not to move forward with consolidation.

Mississippi

Although most states that received section 16 land grants were in their enabling acts which granted them statehood, the grants to Mississippi came several years before statehood. 1803 ACTS OF THE SEVENTH CONGRESS OF THE UNITED STATES, Passed at the second session, pp. Reserved in each township for the support of schools within the same. It was not until sixteen years after statehood, however, that Mississippi state legislature determined what was to be done with the land. Like Ohio, Illinois, and other states

that also initially authorized leases. 99-year leases on parcels of at least 80 acres in size which were to be auctioned off to the highest bidder. Buyers had up to four years to pay for their leases, (*Laws of the State of Mississippi Passed at the Sixteenth Session of the General Assembly*, 1833, pp. 146-149). but Mississippi never subsequently authorized the sale of the land.

Missouri

Missouri became the 24th state in 1821, but the state legislature held its first session almost a year before that.[26] It enacted legislation that called upon the county courts to appoint five school commissioners, whose duty it was to "preserve from waste and damage" the section 16 land that Congress had granted to Missouri. Those convicted of such wrongdoing were liable for a fine of up to one thousand dollars. Commissioners were also authorized to lease school land for periods of up to five years (*Acts of the First General Assembly of the State of Missouri Passed at the First Session*, 1820, pp. 80-81). We do not know how much revenue the leases produced, if any, nor if anyone was ever convicted of damaging school land. Later in the decade the legislature voted to forbid commissioners from leasing school land that was believed to contain lead or iron ore (*Laws of the State of Missouri Passed at the First Session of the Fifth General Assembly,* 1829, p. 49).

As in the other states we have previously examined, Missouri set about selling section 16 soon after Congress affirmed their right to do so. The School Land Law of 1830 ordered section 16 to be surveyed into 40 and 80 acre lots. This legislation permitted public auction sales to commence after three fourths of the "free white householders" in the township registered their written assent, in precisely the same stringent manner that had been specified in the Illinois law adopted a year earlier. The minimum price for section 16 land was set at the federal minimum of $1.25 per acre. Buyers were required to pay in specie or specie-backed bank notes, with full payment due the day after the auction. In contrast to Illinois and the federal government, Missouri did not provide for the collusion-friendly

practice of allowing private entry purchases to be made after land put up for auction failed to sell (*Laws of the State of Missouri Passed at the First Session of the Sixth General Assembly,* 1830, pp. 82-86).

Under the terms of Missouri's Enabling Act, all proceeds from the sale of section 16 were to be retained by the township in which it was located (*U.S. Statutes at Large, 16th Congress 1st Session,* 1820 pp. 545-548). As in the other states that have been investigated up to this point, these provisions gave local authorities strong incentive to garner as much revenue as possible from the sale of their school land. The 1830 law further provided that sales revenue was to be loaned out by local authorities in the form of real estate mortgages, and that only the interest earned was to be apportioned to the schools.

Auctions of section 16 land began in 1832, but as shown in Table 5:8, only 67,000 acres were sold during the 1830s. The slow pace of sales was likely due, at least in part, to the difficulties entailed in obtaining the written approval of three fourths of the householders in a township. Sales picked up somewhat in the 1840s and 1850s, but by the start of the Civil War only about a half a million acres had been sold. The average price obtained for this land was $1.92 an acre. This is a good deal lower than what it brought in Ohio, Indiana, Illinois, and Alabama, but still much higher than the $1.25 an acre average price of federal land sold during the 1830s and 1840s. It is over three times as much as the average federal price of 62 cents an acre in the 1850s, when prices were significantly discounted by the Graduation Act of 1854, and double the average price that military warrants went for in the marketplace. As in the other states examined so far, the Federal Competition Hypothesis is not borne out by the data on school land sales in Missouri.

Table 5:8 about here

When federal land sales ended in 1862, only small remnants of section 16 land remained unsold in Ohio and in Illinois. In Missouri nearly 60 percent of it was still available. From then until the beginning of World War I, federal competition thus came in the form of homesteading. The figures reported here are for final entries, which means that a

patent was granted for the land, which would have occurred at least five years after an initial claim was made. Settlers put no money down to stake out a homestead, so it is not surprising that many abandoned their claims. Missouri homesteaders ultimately secured title to only 56 percent of the total acreage that they had initially claimed. Still, as we see in Table 5:8, this still amounted to over 3.6 million acres.

There is a certain amount of pointlessness involved in evaluating the Federal Competition Hypothesis when competition came in the form of homesteading. Homesteaders did pay small filing fees for their claim and patent, but the payment of almost any positive price for school land would mean that the contest between data and hypothesis was over as soon as it started. A possibility that is worth entertaining, however, is that the drop in the price of federal land, from around 62 cents an acre in the decade prior to adoption of the Homestead Act to zero afterwards, might have put downward pressure on the price of school land. As we see in Table 5:8, however, there is no evidence of this occurring. Even though federal land could now be obtained without paying anything for it, the average price of section 16 nevertheless rose over pre-1862 levels—to $2.15 an acre in the 1860s and to $2.62 an acre in the 1870s. Prices did decline slightly in subsequent decades, but there is no obvious connection between homesteading and the prices paid for section 16.

Because so much of the school land in Missouri sold after the Civil War, it makes sense to see if prices during this period reflected the inflation that occurred during the War and the long period of deflation that followed. According to Officer and Williamson's (2020) estimates, when section 16 sales began in Missouri in 1832 the Consumer Price Index stood at 8.30 ($1983-84=100). It remained steady for the next three decades, registering 8.54 in 1861. By 1865, however, the price index had jumped to 15.8. By 1870 it had fallen back to 12.70, and the slow deflationary burn of the next three decades brought the CPI all the way back down to 8.04 by 1900. Prices remained close to that level until 1914. These movements in the overall CPI appear to have had no effect upon section 16 prices in Missouri. For the entire 1832-1914 period, the Pearson *r* correlation between the year

the land was purchased and the average price per acre was -.003. For the post-Civil War period only (1866-1914), it was -.08.

In his history of public education in Missouri, Mayo (1902) notes that "There was a great deal of inequality in the value of township lands, some being of good quality and furnishing an income sufficient to educate the children, while others were almost worthless" (p. 379). An analysis of section 16 sales data yields findings that are consistent with his report. The average price of school land in counties along the Mississippi River was $3.24 an acre. School land averaged $3.23 an acre in five Western counties that had good farmland, and $2.37 along the Missouri River corridor. In the rest of the state the average price was only $1.68 an acre. The highest prices paid were for two 20-acre lots in Cole County (where the capital Jefferson City is located), which sold for $133 an acre. Another impressive sale was the Virginia Lead Mining Company's purchase of an entire section of school land in Franklin County for $58.59 an acre. Several sections around St. Louis brought between $7.32 and $12.01 an acre, which, given their location, seems low. It is likely that St. Louis schools derived substantially more revenue from a separate federal grant.[27]

Township retention of section 16 sales revenue thus generated a considerable amount of inequality in Missouri, but not as much as in Illinois. Outlier observations at the top end were less extreme and fewer in number in Missouri than in Illinois, where prices in Chicago and Peoria reached $500 an acre. At the bottom end, all but 5,000 acres in Missouri sold for at least the minimum statutory price of $1.25 an acre—a tiny fraction of the 115,000 acres in Illinois that were let go for less than that. Standard measures of inequality register these differences. The 90/10 ratio of section 16 sales prices, which was 7.1 in Illinois, was only 2.8 in Missouri. The Gini Coefficient of .33 for Missouri was also much lower than the .54 figure for Illinois.

The pattern of inequality that has so far been identified is that which is present within states, arising from differences in section 16 sales revenue across townships and the

retention of this revenue by the townships in which the land was located. As can be seen here, however, the section 16 grant—the First Great Devolution in public school finance—generated a substantial amount of interstate inequality as well. The average price of school land in Missouri—$1.92 an acre before the Civil War and $2.24 after—is much higher than what the Federal Competition Hypothesis would predict, but well below the average price of $4.10 that section 16 brought in Ohio townships between 1829 and 1841, or the $5.00 an acre minimum price that was required between 1842 and 1851. The prices paid for school land in Missouri were also well below the average prices that prevailed in Indiana, Illinois, and Alabama.

These differences reflect the fact that farmland tended to be of higher quality in these other states. That a fourth of all federal land in Missouri was sold under the terms of the 1854 Graduation Act is an indicator of how poor much of the land was. Census of Agriculture data also confirm that the amount of very good land was limited. In 1850 the population of Missouri was 80 percent that of Illinois, but Missouri produced only 63 percent as much corn and 32 percent as much wheat. The total value of farmland and buildings in Missouri was only 65 percent as much as in Illinois, even though Missouri is about 20 percent larger in area. By 1860, wheat production in Missouri was only 18 percent that of Illinois and the value of farmland and buildings only 56 percent.

What Missouri did produce in large quantities was hemp—nearly 16,000 tons in 1860, accounting for nearly a third of the nation's total. Soil quality did matter in hemp production, but what was more important was marshalling the extreme amount of labor required to produce it. Large number of slaves worked in the hemp fields, located primarily in the western part of the state. Slave labor was also employed on cotton plantations in the southeast part of the state, but the 42,000 bales that Missouri produced in 1860 amounted to less than one percent of the total for the country. The state's lead mines also depended upon slaves to do hard and dangerous work. Most slaveholders in Missouri, however, owned only one or two slaves who performed general farm work and household

chores (Trexler 1912). It is also the case that the importance of slavery to Missouri's economy declined steadily over time. In 1830 slaves made up nearly 18 percent of the state's population, but by 1860 the percentage had fallen to under 10 percent.

Arkansas

Arkansas became a state 1836, but seven years earlier Congress had given the territorial government authority to lease the land for periods of up to five years (*U.S. Statutes at Large, 20th Congress 2nd Session,* 1829. pp.329-30). Weeks (1912) was unable to find any evidence that such leases were ever issued. As for establishing any public schools before statehood, he reports that "…substantially nothing was done" (p. 29). In 1837 the Arkansas state legislature, meeting in its first session, sent a request to Congress for authorization to sell section 16 in fee simple. Permission was given six years later, in legislation which also authorized, retroactively, the sale of section 16 in Illinois, Louisiana, and Tennessee (*U.S. Statutes at Large, 20th Congress 2nd Session,* 1843, pp. 392). When Congress gave Arkansas its approval to sell section 16, it also reaffirmed what had been stated in the enabling act: revenue generated by the sale of section 16 would stay with the township in which it was located.

The Act to Establish a System of Common Schools, adopted in 1843, set the conditions under which section 16 was to be sold. It required that there be at least five adult white male householders and at least 15 unmarried white children between the ages of 5 and 21 residing in the township before any sale could occur. A majority of the householders could then petition the county court to set the date for electing a commissioner and township trustees to organize, publicize, and oversee the auction. The land was to be surveyed into 40-acre lots, and the minimum price set at $2.00 an acre. Buyers were given up to 10 years to pay, with an interest rate of 8 percent charged on remaining principal (*Acts Passed at the 4th Session of the General Assembly of the State of Arkansas,* 1843, p. 139).

An indication that the Arkansas legislators expected revenue from section 16 to cover only a portion of school funding is that the 1843 school law authorized commissioners to also collect subscription fees from the students' parents. Other provisions of the law reflected concern for the least well off in ways that are consistent with the Maximin Funding Principle. When conducting the annual census of those between the ages of 5 and 21 in their township, trustees were to report the number who had attended school during the past year. They were to also ascertain how many had attended school without paying a subscription fee, as well as how many did not attend because their parents could not afford to pay. Two-thirds of the householders in a township could also approve a "laboring school" and devote the proceeds from the sale of up to 50 acres of section 16 to support it. Here students would work a portion of the day to cover what would otherwise be their subscription fee. We do not know if any such schools were ever established. If they were, the small amount of acreage involved would have yielded only tiny amounts of revenue.

Sales of section 16 in Arkansas began in late 1843, As shown in Table 5:9, until 1854 the amount of land sold never exceeded ten sections a year. Only 154,000 acres had been sold by the time the Civil War started and federal land sales came to an end. It is likely that the imposition of the $2.00 an acre minimum price kept some land from selling, but the slow pace of sales was primarily due to the slow pace of settlement. In 1860 Arkansas had only a third the population of Missouri and only a quarter that of Illinois. In recognition of how sparsely most of the state was populated, the 1843 school law allowed two or more townships to merge their school funds. It was not possible to determine whether any townships exercised this option, but perhaps some did. As pointed out in the previous chapter, the sparseness of Arkansas' population also led Governor Roane in 1850 to urge the legislature to consolidate section 16 sales revenue into a single state fund. He reasoned that it would be more cost-effective to support existing academies with this money than to have it spread much too thinly across the various townships of the state. The legislature was not receptive to his proposal and failed to act on it.

Table 5:9 about here

As in Missouri, millions of acres of federal land in Arkansas were sold at the discounted prices specified by the 1854 Graduation Act. This brough the average price of federal land before the Civil War to 86 cents an acre, which was only slightly higher than the market price of 81 cents an acre for military warrants. At an average price of $2.76 an acre, school land sold in Arkansas during the antebellum period brought over three as much. Granted, this was less than what section 16 sold for in Ohio, Indiana, Alabama, and Illinois during this period, but much higher than the $1.92 average for Missouri. Buyers could take up to a decade to pay for school land, but the annual interest rate of eight percent charged on remaining principal was a high price to pay for credit. In over 56 percent of the transactions for which we had data on purchase and patent dates, the buyers paid for the land in full the same year that they bought it. Another 9 percent owned the land free and clear within a year of the purchase date.[28]

The chief agricultural product of Arkansas before the Civil War was cotton. The 367,000 bales produced in 1860 amounted to 7 percent of total U.S. production. While slavery was declining in Missouri, it was thriving in Arkansas. As cotton production grew, larger and larger percentages of whites in Arkansas owned slaves, and those that did owned more of them (Bolton 1999). By 1860 there were 111,000 slaves in Arkansas, constituting 26 percent of the total population. The role of cotton in the Arkansas economy is evident in the prices paid for section 16. Although much of the school land sold before the Civil War brought only the minimum price of $2.00 an acre, high-quality cotton land, typically sold in 20-acre to 80-acre parcels, brought between $15 and $30 an acre. Transportation costs were also a factor. On average, buyers paid $4.52 an acre for school in the counties along the Mississippi River but only $2.50 an acre in counties lacking ready access to the river. In short, we see that school land in Arkansas sold for considerably higher prices than federal land, and that purchase prices were a function of both soil quality and

location. As in the case of all other states examined previously, these data strongly refute the Federal Competition Hypothesis.

Sales came to a halt after Arkansas seceded from the Union, but picked up again after the state was readmitted in 1868.[29] Like the figures we reported for Missouri, the eight million acres of homesteads reported in Table 5:9 are for those that were successful enough to be patented. In Arkansas, this amounted to about 58 percent of the acres that were claimed. As we see in this table, 585,000 acres of school land were sold after the Civil War—nearly four times as much as before the war. Despite the vast amounts of free land available to homesteaders, the average price remained above $2.00 an acre through the 1870s, and just below that in two decades that followed.

The large amounts of section 16 acreage sold in Arkansas just before and just after the turn of the twentieth century were associated with massive increases in logging. After the serial depletion of more desirable species in the timber lands east of the Mississippi, the yellow pine of the Ouachita Mountains in Western Arkansas—what Smith (1986) calls the "last great virgin forest east of the Rocky Mountains" (p. 3)—was now in demand. Lumber companies, either directly or through their agents, purchased large tracts of hardwood forest here, as well as in the Ozarks and in the northwestern parts of the state. Many of the section 16 sales that occurred during this period were of entire sections to major lumber companies, such as the Western Tie and Timber Company, the Quigley Stave and Heading Company, and the Arkadelphia Lumber Company. Well over 300 of these purchases were for 500 acres or more. If anyone in Arkansas reasoned that it would be profitable to hang on to section 16 for a while and sell it later at higher prices, it would have—but the wait would have been a long one. Most of the timberland sold before 1910 brought only $2.00 to $3.00 an acre. Only where there were still trees standing after that did section 16 fetch $5.00 an acre or more. Buyers paid nearly $80.00 an acre on average for section 16 sold over the 73-year period beginning in 1921, but these purchases involved less than 10,000 acres.

Michigan

Michigan had less land suitable for farming than Ohio, Illinois, and many other states, and by 1860, over 7.2 million acres—about one eighth of the entire state—had been officially designated as Swamp Land (Gates 1968). It was, on the other hand, endowed with vast forests of valuable white pine and other excellent hardwoods. Because Isaac Crary had managed to get Congress to make the reservation of section 16 in Michigan to the state as a whole instead of to the townships, all revenue from sales flowed to the state's Primary School Fund. This also meant that the prices obtained for school land depended entirely upon policies enacted and implemented at the state level. In its first session, the Michigan state legislature took stock of the state's highly prized timberlands and authorized section 16 to be sold for no less than $8.00 per acre, which is far higher than the minimum price imposed by any other state. Buyers got a big break, however, on the terms of the sale. The law required them to put only 25 percent down, and they did not need to make another payment for five years. They could choose to take up to another 20 years to pay off the balance, financed at an annual interest rate of seven percent on remaining principal. These were already quite generous terms, but three months later the legislature reduced the down payment to ten percent, with the remainder due in nine equal annual payments (*Acts of the Legislature of the State of Michigan Passed at the Annual Session of 1837*, pp. 210, 316).

When the initial auctions of section 16 were held, bidding was inspired by what Franklin (1842) describes as "a kind of mono-maniac acquisitiveness" (p. 61). In 1837, the first year of sales, school land commanded an average price of nearly $12 an acre (Knight 1885). In Branch County, located on what was now the official border with Ohio, school land averaged over $17 an acre. Some choice lots there went for as high as $35 an acre. A writer for the *Michigan Star*, a short-lived newspaper published in Branch County, calculated that down payments made on this land, combined with the seven percent due

annually on the remaining principal, would yield county schools an annual income of $7,000. If such prices prevailed throughout the state, he conjectured, “Michigan can educate every child and youth in the state, with little or no direct expense to their parents” (quoted by Dain 1968, p. 243).

Unfortunately, demand for section 16 in Michigan, along with that for public land in general (see Figure 5:1), collapsed during the long, deep recession that set in after the Panic of 1837. The legislature responded by enacting what Knight (1885) describes as “a long line of relief legislation which ended in dire disaster to the school funds” (pp. 91-92). In 1839 the legislature granted buyers even more time before they needed to make interest or installment payments (*Acts of the Legislature of the State of Michigan Passed at the Annual Session of 1839*, p. 13). In 1841 they cut the minimum price to $5.00 per acre. Buyers who had paid 20 percent of the purchase price could put off additional principal payments indefinitely and just pay the annual interest charge (*Acts of the Legislature of the State of Michigan Passed at the Annual Session of 1841*, p. 157-158). A year later, buyers who had paid $8.00 or more for school land were given the right to petition local judges for a reappraisal of their land, thus reducing the purchase price by as much as 40 percent (*Acts of the Legislature of the State of Michigan Passed at the Annual Session of 1842*, pp. 45-47).

As hard times persisted, Michigan, along with seven other states, defaulted on the bonds that it had issued (English 1996). Sales of school land remained depressed. By 1842 only 63,000 acres had been sold, and those who had made purchases were falling behind on their payments (Sawyer 1842). It did not help that a large amount of section 16 land that was suitable for farming was occupied by squatters (Knight 1885). In dire financial straits, Michigan resorted to issuing scrip and other treasury warrants, which were accepted in the place of cash on section 16 purchases (Dain 1968).

To have a severe recession occur so soon after section 16 sales began was a case of bad timing, and there is not much that Michigan could have done about that. Long-term credit

sales, however, are another matter. Such sales make sense in the case of farmland, where significant investment of labor and capital is required to bring land into cultivation. The resultant improvements make it much more productive and much more valuable. Owners will therefore seek to ride out hard times and are unlikely to default. In the case of timberland, in contrast, the consequences of credit sales were disastrous. After making the required ten percent down payment, buyers could clear the land of its valuable timber and then, after thereby extracting almost all its value, abandon their holding and make no additional payments. To add insult to injury, when title reverted to the state, the property also fell off the tax rolls (Greffenius 1968). There are two possible reasons why the Michigan legislators approved such a bad policy. One is that they failed to understand what terrible incentives they had created with their policy of easy credit sales. The other is that they were in league with, or beholden to, those who exploited the law to reap hefty profits at the state's expense, and they knew exactly what they were doing. It is hard to know which is worse.

In 1842, an exasperated Franklin Sawyer, Michigan's Superintendent of Public Instruction, informed the legislature that "the Superintendent is abundantly satisfied that but a small portion of those who purchased at the time [1837-1838], and who are in arrears of instalment and interest, will ever pay another dollar, either in interest or principal" (1842, p. 60). The many thousands of acres that had been forfeited could be resold, but there was not likely to be much demand for timberland stripped of its timber. According to Sawyer's calculations, the state would have been far better off selling section 16 at $3.00 an acre with a substantial amount paid up front than it was selling it for $8.00 an acre but with a required down payment of only ten percent. It was not until 1873 that the State Land Office began requiring those purchasing school land suitable for farming to put 50 percent down, and those purchasing timberland to make full cash payment at the time of sale (*General Acts and Joint Concurrent Resolutions of the Legislature of the State of Michigan Passed at the Annual Session of 1873*, pp. 79-80).

In 1846 the legislature made yet another effort to spur sales of section 16 by cutting the minimum price to $4.00 an acre (*Acts of the Legislature of the State of Michigan Passed at the Annual Session of 1846*, p. 239). The reductions in minimum sales price, combined with economic recovery, eventually led to significant gains in section 16 sales volume. By the beginning of the Civil War, Michigan had sold 314,000 acres of section 16—about 45 percent of what was available in the Lower Peninsula—and the balance of the Primary School Fund was $697,626 (McKinney 1860). This works out to an average price of $2.22.[30] Most buyers, of course, had agreed to pay much higher prices for section 16 when they purchased the land. The small down payment that was required, the very generous terms of credit, and the incentive to let the land go back to the state after clearing it of its valuable timber meant that what buyers agreed to pay and what the state of Michigan actually got from them were two very different numbers.

Despite the poor economic times that Michigan had endured and the terrible blunder it had made in selling prime timberland on credit, the average price of $2.22 an acre for section 16 was still nearly twice as much as the average price of $1.22 an acre that federal land in Michigan sold for during the antebellum period (see Table 5:1). Even here, under what would seem to be the most unfavorable conditions possible for the sale of school land, the Federal Competition Hypothesis fails to garner empirical support. This was likely of little consolation to the people of Michigan, who had come to realize that proceeds from the sale of section 16 would cover a much smaller portion of the costs of education than they had anticipated when sales began.

Florida

Federal land sales in Florida began in 1825, 20 years before admission to the Union. Little of the state was suitable for settlement. Over 20 million acres—about half of Florida's total area—would come to be designated as Swamp Land, and most of it really was swampy. In the two decades prior to statehood, the government sold only 1.14 million

acres. As shown in Table 5:1, before 1854 prices averaged a few cents higher than the $1.25 per acre minimum. The 685,000 acres sold under the terms of the Graduation Act, however, netted an average price of only 44 cents an acre. By the time of the 1860 Census, only 634,000 acres, located mainly in the northern tier of counties along the borders with Georgia and Alabama, had been put into cultivation. This ground was devoted primarily to raising cotton, but some tobacco was cultivated production in Calhoun and Franklin counties. The state's population had reached only 140,000, and over 60,000 of the inhabitants were slaves. By way of comparison, the population of Iowa in 1860, which entered the Union a year and a half after Florida, was nearly 675,000.

The early history of legislation in Florida regarding the section 16 grant is much the same as in the other states that have been examined. In 1827 Congress authorized the territorial government to issue one-year leases for section 16 but not to sell it (*U.S. Statutes at Large, 19th Congress 2nd Session*, 1827, pp. 201-202). Ten years later the Legislative Council instructed the territorial treasurer to collect lease payments and to fine those who were trespassing on school land (*Acts of the Legislative Council of the Territory of Florida Passed at its Fifteenth Session*, 1837, pp. 24-25). Cochran (1921) was unable to find any evidence that such leases were ever issued or that any money was ever obtained from them. When Florida became a state in 1845 and was authorized to sell section 16, this land was originally reserved for the townships. As detailed in the previous chapter, however, in the waning days of 1848 the state legislature enacted legislation to consolidate all proceeds from section 16 sales into a single state fund. Several other states had considered consolidation, but only in Florida was this accomplished.

Legislation that authorized the Register of Public Lands to sell school land adopted the sort of pricing formula that was incorporated into the federal Graduation Act five years later. It called for each 80-acre parcel to be assigned to one of five categories, based upon the value of the land. The minimum price for first-rate land was set at $3.00 an acre, second-rate at $1.50 an acre, third-rate at $1.00 an acre, fourth-rate at 75 cents an acre,

and fifth-rate at 50 cents an acre. A companion bill permitted those who were already living on section 16 to make a preemptive claim for up to 160 acres, under terms that were even more favorable than what the federal government offered. They were to pay the minimum price specified by the graduated pricing formula but needed to make a down payment of only 25 percent. The rest was to be paid in three annual installments, although they could pay it off sooner if they wished. As in Arkansas, school trustees were also authorized to collect rate bills, based upon the number of children who attended school, for expenses that were not covered by public funds that they received (*Acts and Resolutions of the General Assembly of the State of Florida Passed at its Fourth Session*, 1849, pp. 31, 34-35, 39-41).

As shown in Table 5:10, by the time federal land sales ended in 1862, the Register of Public Lands had sold only a little over 66,000 acres of section 16 (Corley 1860). The average price of $1.58 an acre was a good deal lower than in any of the other states we have examined. This was due, at least in part, to the fact that even the land in northern Florida that had been brought into cultivation was not that good—or at least not nearly as good as the prime cotton land in Alabama, located 150 or so miles to the north of the state border. Still, this was higher than what people paid for federal land in Florida—especially after 1854, when implementation of the Graduation Act pulled the average price for the decade down to 60 cents an acre. As in all the other states we examined, there is no evidence that the very low price of federal land in Florida put a cap on the prices that were obtained for school land.

Table 5:10 about here

The state of Florida continued to sell school land throughout the years of the Civil War and Reconstruction, but at the same slow pace that prevailed before the War. In nominal terms the average price obtained between 1863 and 1880 was about the same as it had been before the War, but lower in constant (1900) dollars once post-War deflation is taken into account. Sales picked up considerably after that, and during the next three decades,

between 1881 and 1910, over 644,000 acres—the lion's share of the section 16 grant that had been made to the state—moved into private hands. The prices that Florida obtained for this land continued to be lower than in any other state we have previously investigated. Whatever equalizing impact the consolidation of section 16 revenue might have had was of little consequence, given the fact that there was such a limited amount of revenue to equalize.

Would section 16 have fetched more if the townships had been allowed to keep the sales revenue? It seems more than likely that they would have. The willingness of the state to let section 16 go at very low prices is particularly evident in its policy regarding the School Indemnity Land, or what has previously been referred to as in lieu land, selected in place of section 16 when section 16 is of little or no value. The individual sales records that are available indicate that about 12 percent of all school land sold in Florida was of a section other than section 16. In 1893 the state entered into a contract with James Graham and his attorney, Benjamin F. Hampton. Hampton was charged with identifying and selecting all the School Indemnity Land in the state, for which Graham agreed to pay the state $1.25 an acre. Graham and Hampton inked an even better deal six years later. The state awarded Hampton 20 percent of all indemnity land that he selected in the 1.4 million-acre Forbes Purchase, discussed previously in this chapter, in exchange for Hampton's agreement to pay $1.00 an acre for the rest of it (McLin 1903). By far the largest transaction ever involving school land in Florida occurred when Hampton purchased 25,333 acres, at $1.00 an acre, in 1902.

In January of 1912 Henry Flagler had extended his East Coast Railway all the way down to Key West, and Florida began to rapidly become what it is today. The average price of section 16 rose to $4.97 in the ensuing decade, and then jumped to $38.14 during the Florida real estate boom of the 1920s. Unfortunately, by this time most of section 16 in Florida had already been sold. Average prices would have been somewhat higher were it not for the contracts regarding in lieu land that had been signed years earlier. Between

1911 and the final transaction they made in 1928, Graham and Hampton picked up another 7116 acres from the state, for which they paid either $1.00 or $1.25 an acre.

Section 16 prices slumped badly during the Depression and World War II but recovered somewhat after that. As we see in the far-right column of Table 5:10, however, when converted into constant dollars, postwar prices were only about half of what they had been in the 1920s. Sugar, citrus, and timber land continued to sell for under $10.00 an acre, while land destined for real estate development brought substantially more. A typical purchase was that of an entire section 16 in Dade County in 1950 for $50.00 an acre, although other large parcels in the county brought as much as $100.00 an acre. Inflation or no inflation, today these prices strike us as ridiculously cheap.

Iowa

When the General Land Office held its first auction in the Iowa Territory in 1838, over 23,000 settlers had already found their way there (Lokken 1942). At that time much of Iowa was still, at least technically speaking, in the possession of native Indian tribes.[31] In 1844, Samuel Bayard of the Fairfield Iowa Land Office wrote to Michigan politician Lucius Lyon, telling him that "…population is vastly ahead of the public sales in this Territory…I suppose I speak within bounds when I say that a million & a half [acres] of the public lands in this Territory are overrun & occupied—converted into farms—bargained & sold under the Territorial laws, over which the chain of the surveyor has not yet been carried." More evidence of premature entry came in 1846, when the Des Moines River Navigation Improvement Act granted the state alternate sections, five miles deep, along the river. When this land was put up for sale, two-thirds of the 327,000 acres that the state received under the grant was claimed by people who were already living there. Under terms of the Preemption Act, they obtained title to their land for $1.25 an acre (Swierenga 1968).

What drew these early arrivals to Iowa was the unmatched quality of the soil. Promoting the sale of 1.7 million acres that the federal government had granted them, the Iowa

Rail Road Land Company, a real estate development agency formed by a consortium of four major railroads, described it "as fertile and desirable as any in America." The climate, they added, was "healthful and bracing" (McAlvin 1871). Few people would describe hot humid summers and bitter cold winters in this way, but the advertisement was spot on about the dirt. Over 75 percent of the land in Iowa is of the highest quality Grade I rating. Iowa, in fact, contains 25 percent of all Grade I soil in the continental United States (Marbut 1934).

Commencement of federal sales in Iowa set off one of the greatest land booms in American history. As shown in Table 5:11, the General Land Office sold two million acres before Iowa was admitted to the Union, and almost twelve million acres before federal sales ended in 1862. Almost all federal land went for the minimum price of $1.25 an acre. Another 13.6 million acres, far more than in any other state, was obtained for under a dollar an acre with post-Mexican War military bounties. It is no accident that 15 of Iowa's 99 counties are named after major military and political figures associated with that conflict, or the key battles of Buena Vista and Cerro Gordo. Railroad land grants accounted for another four million acres, and another large swath of land was taken up by the Des Moines River Navigation Grants. Less than a million acres of Iowa was left for homesteaders to claim (Lokken 1942).

Table 5:11 about here

In its first session, held in 1847, the Iowa state legislature authorized township trustees to sell section 16 land at a minimum price of $1.25 an acre. Buyers could make a down payment of one fourth the purchase price and finance the remaining principal over the next ten years at an interest rate of ten percent (*Acts and Resolutions Passed at the First Session of the General Assembly of the State of Iowa,* 1847, p. 160). As seen in Table 5:11, this prompt action resulted in a far shorter lag between federal sales and section 16 sales than in the other states we have so far examined. Over 470,000 acres—nearly half of all section 16 land in Iowa—was sold at the peak of the 1847-1858 Iowa land boom. Selling

land at this time was something that other recipients of federal land grants chose not to do, and for good reason. As the leading Iowa historian notes, "The railroads in Iowa, whose large land holdings came in competition with the government lands, kept their land off the market in order to realize greater profits. This was especially true of the Chicago and Northwestern Railway, which waited until the government lands were taken up before offering its holdings for sale" (Lokken 1942, p. 142).

Much of the school land that passed into private hands during the boom years never even made it to the auction block. The 1847 legislation that authorized sales also permitted squatters to file a preemptive claim for up to 160 acres at appraised value. Appraisals were to exclude the value of any improvements made, so this was tantamount to $1.25 an acre. Squatters on section 16 put the state government in the same bind as the federal government. They were there, and no one was going to kick them off the land they were occupying. This policy is understandable, as far as it goes. But the Iowans could have done what other states did, which was to recognize preemptive claims to section 16, but designate another in lieu section and sell the land there at a higher price. What they did instead was to simply accept the preemption price of $1.25 for the school land. They even allowed preemptors to buy school land on credit—20% down, the rest financed at an annual interest rate of 10 percent, with the balance due in 10 years. These terms were amended a year later to require a down payment of 50%, but this was still a better deal than what the federal government was offering to preemptors (Swierenga 1968).

The impact of Iowa's home-grown preemption policy is evident in the sales data. First, in lieu land located outside of section 16 constituted only 1.4% of the purchases.[32] True, there was little section 16 land in the state that was not suitable for cultivation, but this low figure also reflects the fact that so much school land was sold under the terms of the preemption policy that the state had adopted. Secondly, between 1847 and 1858, sales records for over 161,000 acres failed to include the price at which the land sold. This information is almost never missing in data for subsequent years. The best explanation for

the failure to report a price is that the land was obtained through preemption. Another possibility is that those recording sales saw no reason to report a price when the land sold at the "government price" of $1.25 an acre. The average prices that are reported in Table 5:11 for the 1847-1858 period are thus based on the assumption that any land for which there is no price listed sold for $1.25 an acre.

As the entries in 4:11 show, the average prices that were obtained for section 16 in the 1847-1850, 1851-1854, and 1855-1858 brackets were all in excess of what buyers paid for federal land or for military warrants. At the same time, a considerable amount of the data on Iowa section 16 sales is consistent with the Federal Competition Hypothesis. As we have just surmised, over 161,000 acres was obtained, through preemption, for the federal minimum price of $1.25 an acre. Of the 307,000 acres sold between 1847 and 1858 for which a price was reported, acre, over 52 percent also brought the minimum federal and state price of $1.25 an acre. Another 20 percent of it went for between $1.25 and $2.00 an acre.[33] The school land in Iowa was the finest farmland in the world, but, between 1847 and 1858, the state sold it at prices well below what section 16 brought in Indiana, Illinois, Alabama, and Arkansas. The state sold school land for prices that were even lower than what section 16 sold for in Missouri, and only slightly more than what it was bringing in Florida.

Why did this happen? Surely the Iowans could see what school land was bringing right across the river in Illinois. Between 1851 and 1854, section 16 in Illinois fetched an average price of $2.97 an acre—double the Iowa average of $1.48. Between 1855 and 1858 the average price in Illinois was $8.17 but only $2.04 in Iowa. By waiting to sell section 16 until most of the federal land in the area had been sold, and, in many places, until the railroad came through, people in Illinois were able to obtain four times as much per acre of school land than what it was selling for in Iowa. Why did the Iowans not simply adopt the Illinois strategy of waiting to sell section 16 until most of the federal land was off the market, thereby capture similar gains in prices? Why did they instead unload so much of

it at the height of the Iowa land boom, when so much federal land was available for $1.25 an acre—or even less if you had military warrants?

According to Bogue (1958), collusive claims clubs were especially strong in Iowa. If so, they may have been able to control section 16 auctions in the same way they controlled federal land auctions. But if this were the case, it should have made state officials in Iowa even more inclined to wait until most of the federal land had been sold. By then the claims clubs would presumable have faded away, making it possible to get fair prices for section 16.

The primary reason why so much school land in Iowa was sold at the minimum price of $1.25 an acre, or claimed for the same price through preemption, can be traced back to incentives. In Ohio, Indiana, Illinois, Alabama, Missouri, and Arkansas, township retention of section 16 sales revenue gave local officials the incentive to run competitive auctions and to obtain as high a price as possible. The language in Iowa's Enabling Act, in contrast, was identical to what Isaac Crary had crafted a decade earlier for Michigan, i.e., "That section numbered sixteen…shall be granted to the State for the use of schools." While the legislature in Iowa delegated authority to township trustees and school-fund commissioners to sell the school land, it directed that all sales proceeds flow to the state Permanent School Fund. Each township in Iowa is one of nearly 1600 others in the state. Unable to retain the proceeds from the sale of section 16, those in charge of selling it had little incentive to do what they did in Illinois—to hold off until after most of the federal land in the area had been sold, and until the value of the land was further enhanced by the construction of railroads and improvements in water transportation.

What local authorities in Iowa had instead was considerable incentive to get the land into private hands as quickly as possible. There it would be put on the local tax rolls and generate revenue that they would be able to retain. Under the terms of the 1847 school law, buyers could take up to ten years to pay for their land and would not receive a patent until the final payment had been made. Their land would be taxed, however, as soon as

the ink was dry on the sales agreement: "All lands contracted for under the provisions of this act shall be subject to taxation from the day of making the contract of purchase" (*Acts and Resolutions Passed at the First Session of the General Assembly of the State of Iowa,* 1847, p. 164).

The incentives that were present at the local level, however, do not constitute a full explanation for why so much school land in Iowa was let go at such low prices. While it is true that local authorities lacked the incentive to get as much for section 16 as possible, why were authorities at the state level not similarly motivated? The Iowa legislature could have set a much higher minimum price than $1.25 an acre. As noted previously, the state legislature in Arkansas set the minimum price of section 16 at $2.00 an acre—well above the federal minimum price of $1.25. In 1855 the Ohio legislature set the minimum price of school land at $5.00. A great deal of revenue from section 16 in Michigan was lost because of the poorly designed policy of credit sales, but the legislature did set a minimum price of $8.00 an acre. Why did the Iowa legislature not set a higher minimum price? Why would state legislators in Iowa be more willing than their counterparts in other states to sacrifice the interests of school children—as well as the interests of their parents who were paying for their education?

After reviewing debate in the Iowa State Senate, Swierenga (1968) concludes that the legislators favored a policy of rapid sales—which the low prices certainly assured—in order to avoid "undue interference with the settlement of the country," and to prevent "depredation and waste" of the public lands (pp. 56-57). The latter concern is a valid one, but in the case of Iowa it is not a compelling justification for quick sales at very low prices. Iowa had far less valuable timberland than most other states, which meant that it was nearly as vulnerable to the wholesale plundering of unsold land. The argument that the price for school land should be kept very low in order not to impede the course of the ongoing Iowa land boom does not make sense, either. At the very least it was shortsighted. After all, the whole point of reserving section 16 for the support of public

education was to attract settlers! Getting as much as possible for section 16 would defray the costs of education as much as possible, which should have made Iowa land even more appealing. This should have had a positive effect on the trajectory of land prices, and so would seem to be in the interest of all those who had come to buy land in Iowa—small-scale farmers and large-scale speculators alike.

In the first decade of school land sales in Iowa, prices were, on average, higher than the "government price" of $1.25 an acre and higher than the price of military warrants. The Federal Competition Hypothesis, as in all other states that have so far been examined, can still be rejected. The data also suggest, however, that the Federal Competition Hypothesis should be recast. We have so far taken it to mean that state and local officials *could* not sell section 16 for prices higher than what the federal government was charging for land in the public domain. In Iowa, at least in the 1850s, officials *chose* not to sell large amounts of section 16 for prices higher than what the federal government was charging.

Authorities in many other states managed to sell section 16 at prices above, and often well above, the prices at which the federal government was selling land. Had they pursued different courses of action, the Iowans could have done so as well. Instead of selling at the height of the land boom, they could have made kept school land off the auction block until all (or at least most) of the federal land in the area surrounding it had been sold. Instead of setting a higher minimum price, they opted instead to match the federal minimum of $1.25 an acre. It is true that they, like the federal government, had little choice but to allow squatters to remain on section 16 land, but they could have designated different sections as in lieu land and sold them for higher prices. They instead crafted a preemption policy that accepted payment from squatters on even better terms than what they could get from the federal government.

In late March of 1858, by which time about half of all section 16 in the state had been sold, the Iowa legislature did act to remedy the situation by raising the minimum price of school land to $2.50 an acre. They also required all sales to receive prior approval from

the county judge and two township trustees (*Acts and Resolutions Passed at the Seventh General Assembly of the State of Iowa,* 1858, p. 393), Two years later, however, they took a big step backward when amendments made to the school law in 1860 eliminated the minimum sales price altogether (*Revisions of 1860, Containing All the Statutes of a General Nature of the State of Iowa,* 1860, p. 350). It appears that few people noticed the lapse. Two sections in Butler County townships sold for less than 50 cents an acre and another 1500 acres sold for less than a dollar, but the average price of section 16 between April of 1858 and the end of 1862 overall was $3.49 an acre. Buffum (1907) surmises that the omission of a minimum price requirement in the 1860 law was unintentional. Perhaps so. In any case, the damage resulting from this legislative oversight, if that is what it was, would have been much worse were it not for the fact that sales fell off dramatically during the deep recession that followed the Panic of 1857, and remained at low levels during the early years of the Civil War. Federal land sales during this time were depressed as well (see Figure 5:1), as were railroad stocks and other investments (Calomiris and Schweikart 1991).

Section 16 sales picked up appreciably as the Civil War wound down, and prices averaged $2.56 an acre in the 1863-66 period. Between 1867 and 1870, when over a fifth of all the school land in the state passed into private hands, the average price was $2.96 an acre. By 1870 only about 17 percent of section 16 in Iowa remained unsold, but at this point the legislature adopted measures that enabled the state to obtain much higher prices than it had previously. It raised the minimum price to $6.00 an acre, and required that there be at least 25 legal voters residing in a township before any of section 16 could be sold (*Acts and Resolutions Passed at the Regular Session of the Thirteenth Session of the General Assembly of the State of Iowa,* 1870, pp. 28-30). The new minimum price was much more in line with actual land values. Estimates of raw land prices made by Agricultural Societies in 19 central Iowa counties ranged as high as $10 an acre, with a median estimate of around $6.00 an acre Swierenga (1968). The requirement that there be at least 25 voters

in the township would have delayed the sale of section 16 until a substantial amount of federal land had been sold. This should have helped drive up prices, and it appears that it did. During the next ten years, section 16 averaged of $7.53 an acre. This, too, was at the market price or close to it. Railroad advertisers at the time told potential buyers that they should expect to pay $8 to $10 an acre for land near the tracks, more if it were located near a station, and somewhat less if it were farther away (McAlvin 1871). The 125,000 acres that remained to be sold after 1880 —about one eighth the total amount of school land that Iowa had been granted—brought an average price of $8.81 an acre.

The question as to why the Iowa legislature chose to raise the minimum price and require a substantial degree of settlement before selling section 16 answers itself—it was to get more money for the school land. The more pertinent question is why it took so long to implement these policy changes. For this there is no ready answer. It cannot be attributed to shifting political tides. Iowa had been solidly Republican since the party first appeared and would remain so for many decades to come. The major issue occupying the attention of the state legislature in 1870 was that of the railroads—or, more specifically, how to encourage the construction of new railroad lines in underserved parts of the state while at the same time constraining freight and passenger charges on existing lines. The most significant economic problem was the invasion of grasshoppers. So vast in number that they darkened the sky, this plague of insects ravaged crops in the western half of the state (Gue 1903). Exactly what events or developments persuaded the Iowa state legislature in 1870 to stop selling section 16 at bargain basement prices is thus a matter left for future research.

Wisconsin

Many years before Wisconsin entered the Union in 1848, territorial authorities there were concerned about the fate of the school land. Wisconsin contained considerable amounts of land suitable for agriculture, but it was endowed with vast forests as well. They

were thus fearful that rich timberlands would be plundered before section 16 sales began. The territorial legislature approved a bill forbidding the "cutting down, destroying or carrying from off the same any timber or wood of any kind, mineral, stone or stone coal" from section 16, and made each offense punishable by a fine of twenty dollars (*Acts Passed at the First Session of the Legislative Assembly of the Territory of Wisconsin*, 1836, p. 95).[34] According to Patzer (1924), the law did little to deter the theft of timber from school lands. To obtain a conviction it was necessary for an accusing party to appear in court and prove the charge—which, "…because of the attitude of the early settlers, was often a difficult matter to do" (p. 2)

As in Michigan, Florida, and Iowa, section 16 in Wisconsin was reserved to the state and not to the townships in which it was located. Under the terms of legislation enacted in 1849, sales were put under the jurisdiction of the Commissioners of the State and University Lands, a board made up of the secretary of state, the state treasurer, and the attorney general. Instead of setting as minimum price, the law stipulated only that the land could not be sold for less than its appraised value. Potential buyers had to be pleased with these terms of sale, which closely resembled those of Michigan. They were required to put only ten percent down, could take up to 10 years to pay, with the remaining principal subject to an annual interest rate of seven percent. They could pay off as much as they wanted to at any time, but they could also make annual payments covering only the interest until the final installment was due. Iowa's preemption policy struck as especially solicitous of the squatters occupying section 16, but Wisconsin's policy was almost identical (*Revised Statutes of the State of Wisconsin Passed at the Second Session of the Legislature, Commencing January 10, 1849*, pp. 210-226).

Section 16 sales in Wisconsin started off in what appeared to be a propitious manner. As shown in Table 5:12, between 1850 and 1852 over 150,000 acres sold for an average price of $4.41—well above the federal minimum of $1.25, and far more than the 80 cents an acre that one needed to pay for military warrants. The $4.41 figure, however, is illusory,

which is why it is printed in italics and put in parentheses. It is based upon what was specified in the sales contracts and does not reflect what the state actually received. As should have been expected, the same unfortunate policies that had been adopted in Michigan produced the same unfortunate outcomes that they did in Michigan. While buyers agreed to pay handsome sums for section 16 at the time of purchase, the small down payment that was required gave them great incentive to clear the land of its valuable timber, make no additional payments, and let it revert back to the state.

Table 5:12 about here

The legislature took a stab at remedying this situation in 1855, when it required that henceforth "…no person shall purchase any pine lands without paying the whole of the purchase price at the time of the sale" (*General Acts Passed by the Legislature of Wisconsin in the Year Eighteen Hundred and Fifty-Five*, p.23). It was to no avail. According to the Commissioners of the School and University Lands, it was common practice going forward to classify all section 16 land as farmland and continue to require only ten percent down with ten years to pay, regardless of how many trees were there for the taking. Between 1854 and 1865, buyers forfeited over 186,000 acres to the state after making only the down payment or, in some cases, after a year or two of interest payments. The state had to satisfy a series of legal requirements before they could put the land back on the market, but when they did it was under the same easy credit terms as before. In any case it was doubtful that they would recover more than a fraction of the original purchase price (Harvey *et al.* 1860, p. 37-38). Indeed, the price of school land dropped precipitously after 1852, to an average price of only $1.48 an acre between 1853 and 1856 and $1.50 an acre between 1857 and 1862. These prices were a bit higher than what the federal government was getting for its land, either through direct sales or through the purchase of military warrants, but they reflected only a fraction of true market value.

As in Florida and Iowa, there remained several hundred thousand acres of section 16 in Wisconsin left to sell after the Civil War. Although the Iowa legislature increased the

minimum price of section 16 to $6.00 an acre in 1870, no such action was taken in Florida, nor, as we see here, in Wisconsin. As shown in Table 5:12, between 1863 and 1890 Wisconsin sold several hundred thousand acres of section 16 for less than $1.50 an acre. This was a bit higher than what they had to pay for official designated Swamp Land, but not by much. It was in all likelihood also more than what buyers had to pay for military warrants; we do not know what their market value was during this period, but we doubt that prices were any higher than they were before the War. What remained after 1890 brought an average price of $2.23 an acre, but this involved less than 60,000 acres.

Earlier in this chapter, it was noted that in 1920, Henry Johnson, State Treasurer of Wisconsin, accused the state of having sold "hundreds of thousands of acres of fine timber land for a mere song." By all indications he was correct in this assessment. This raises the question, again, of why the state government did not set a higher minimum price for section 16, or pursue other policies and courses of action that would generated more revenue. Indeed, the prices that were realized for school land in Wisconsin were lower than in any other state we have examined.

Patzer (1924) offers an explanation. As he tells it, "…early legislatures and the land commissioners were controlled by selfish and dishonest interests that prevented the proper conservation of the school and university lands and the resultant funds" (p. 110). This may be true, but why would selfish and dishonest interests hold more sway in Wisconsin than in other states? Another reason why section 16 sold for such low prices in Wisconsin may be the nature of the land itself. While prairie land required considerable upfront investment to make farming it profitable, timberland was always vulnerable to plunder. Having people pay something for school land was preferable to having them pay nothing, which is what a great number of them were paying for the valuable trees growing on section 16. Report after report made by the School and University Land Commissioners referred to the ongoing theft of timber, especially of white pine, cedar, oak, and hemlock: "Quietly but actively trespassers have been stripping off this timber, sometimes

merely for their own use, sometimes making small sales, and sometimes carrying on the shameful business so extensively as to cover the rivers with stolen logs" (Fairchild *et al.* 1865, p. 343). They bemoaned the fact that the interests of the state, of its school children, and of those lumbermen who played by the rules were constantly being undermined by illegal timber harvesting.

The commissioners asked the legislature to impose stiffer penalties on timber thieves. They reported that they had already hired timber agents to police the school land. These agents could fine violators and seize timber that had been illegally cut, and in the previous year they had collected $8,970 (Fairchild *et al.* 1865). More timber agents would hopefully deter more of the theft that was occurring, but it was difficult to find men willing to do this dangerous work. Such efforts undertaken to preserve section 16 timber resources were laudable, but whatever positive effect they might have had were not reflected in section 16 prices. As we have just observed, the average price of section 16 remained quite low until a small tick upward in the last decade of the century.

Another explanation for why section 16 prices were so low in Wisconsin has been put forward in the previous analyses of sales in other states: it was because this land was reserved to the state and not townships. As in Michigan, Florida, and Iowa, local authorities in Wisconsin had little incentive to maximize section 16 sales revenue. While state authorities in Wisconsin and in these other states could have pursued policies that would have yielded more revenue from section 16, for the most part they did not. It is true that action to obtain higher prices was taken in Iowa in 1870, but by then most of the school land there had already been sold. This line of reasoning is supported by a comparison of Wisconsin with Arkansas, another state in which a considerable amount of section 16 was timberland, but where it had been reserved to the inhabitants of the township in which it was located. As shown previously in Table 5:9, the 450,000 acres of school land sold during the 1890-1920 timber boom in Arkansas brought an average price of $2.66 an acre. This may well have been less than its market value, but it was considerably more than the

prices obtained for section 16 in Wisconsin. This was despite the fact, as previously noted, that the timber in Arkansas was of lower quality, and was harvested only after more valuable species present in other states, including Wisconsin, had been thoroughly exploited.

The Impact of Section 16 Sales Revenue on Public School Finance

In the years before the Civil War, how much did proceeds from the sale of section 16 contribute to the overall costs of primary education? In order to make this assessment, it is necessary to know 1) the amount of revenue obtained from school land sales, 2) total expenditures on education, and 3) the number of school-age children. It is possible to calculate these figures in a meaningful way for a couple of states—Ohio and Illinois—where almost all section 16 had been sold before the War. Missouri, Iowa, and Wisconsin had sold less than half of section 16 before fighting started, so most of the revenue was still to come in. Arkansas had sold less than a quarter of its school land, and Florida hardly any of it. We also lack the data needed to assess the impact of section 16 sales in Indiana, Alabama, and Michigan.

Section 16 sold for higher prices in Ohio and Illinois than in many of the other states that have been investigated, so the contribution that these sales made to education is correspondingly greater than in the other states. Ohio and Illinois differed from most other states in another important way. In the Congress Lands of Ohio (about 60% of the state) and in all of Illinois, section 16 sales revenue stayed with the township in which it was located. In almost every state admitted to the Union from Michigan onwards, section 16 was granted to the state as a whole. In addition to determining how much revenue the school land yielded, it is thus important to document how land sales revenue in these states was distributed.

The entries in the first two rows of Table 5:13 register the cumulative amount of revenue obtained from school land sales, along with the annual payments made from those funds, in 1840, 1850, and 1860. The figures for Ohio include section 16 sales made in the

Congress Lands, as well as the sale of land to support schools in the Virginia and U.S. Military Districts and in the Western Reserve. As we see here, sales revenue totals grew significantly between 1840 and 1860, more than doubling in Ohio and tripling in Illinois, as land remaining unsold was auctioned off. By 1860 the section 16 land in Illinois had yielded a little over three million dollars, which was about 14 percent more than Ohio collected from sales of its school land. Illinois is 29 percent larger than Ohio, however, and so had 29 percent more school land to sell. The annual payouts to schools, based upon the assumption of a constant yield rate of six percent, increased accordingly.

Table 5:13 about here

The third row in this table reports total expenditures on education in Ohio and Illinois in 1840, 1850, and 1860. Figures for 1850 and 1860 are taken from the U.S. Census, but such data for 1840 are not available in the Census nor anywhere else. The 1840 figures reported here are instead derived in a manner, similar to that employed by Fishlow (1966a), wherein expenditures on education are assumed to be a function of the amount of schooling that children receive. Fortunately, Turner *et al* (2006) and Tamura *et al* (2016) provide estimates of the average amount of schooling received by children in Ohio and Illinois in both 1840 and 1850. Their estimates are used much more extensively in the following chapter, and how they were generated will be explained in greater detail at that point. They are used here in the following formula:

$$EXP_{1840} = EXP_{1850} * (AYS_{1840} / AYS_{1850}) * .9$$

Expenditures on education in 1840 (EXP_{1840}) are thus estimated to be equal to expenditures made in 1850 (EXP_{1850}), multiplied by the ratio of average years of schooling in 1840 versus 1850 (AYS_{1840}/ AYS_{1850}). Children received fewer years of schooling in 1840 than in 1850, so the amount of money spent on education was correspondingly lower. The second discount term, .9, is based on the assumption that the costs of schooling were 10% higher in 1850 than in 1840. It would be desirable to have a better measure of the cost

increases that occurred between 1840 and 1850, but, as we will see in the following chapter, it would be exceedingly difficult to come up with one.

The number of school-age children depends upon the definition of "school-age." In the first part of the 19th century, some children were sent to school, usually accompanied by older brothers and sisters, when they were as young as three. Others might still be there, after frequent and extended absences, in their late teens and even their early twenties (Go and Lindert 2010). Still, it is reasonable to assume that at this time the vast majority of children obtained whatever education they were going to get before they were 15. The 1840, 1850, and 1860 U.S. Censuses all report the number of boys and girls between 5 and 9 and between 10 and 14, and so the school-age population is taken to be the sum of these two cohorts. These figures are reported in the fourth row of Table 5:13. Dividing by them produces the per-child revenue and expenditure figures reported in rows five and six. These figures in turn are used to calculate the contribution that school land sales made to total educational expenditures, which is reported in row seven.

The entries in this row indicate that in 1840, the annual payments generated by school land sales revenue covered 18 percent of total educational expenditures in Ohio. In 1840 the population of Illinois was much smaller than that of Ohio, and sales got off to a timelier start. For these reasons it seemed likely that early school land sales there would have a much more significant impact than in Ohio, and this was indeed the case. In 1840, the annual payment generated from section 16 sales revenue in Illinois covered 41 percent of total educational expenditures.

What should not be inferred from these calculations is that educational expenditures in 1840 were 18 percent higher in Ohio and 41 percent higher in Illinois than they would have been without the revenue generated by Section 16 land sales. Programs by which the federal government (or state governments) provide financial assistance to local jurisdictions, be they counties, cities, or school districts, constitute what economists call grants-in-aid. As public economists see it, this is equivalent to an exogenous increase in personal

income. While such assistance enables local jurisdictions to make higher expenditures on the services they provide, it also allows them to reduce taxes on their residents while maintaining desired service levels (Inman 2008). Indeed the expectation of most economists is that the tax subsittion grants-in-aid —which would incluse Section 16 land—should provide far more tax relief than expenditure increase x rleif than higher expenditures finance Tax substitution effect Indeed reason people were so excited is that they thought sec 16 revenue would get rid of taxes entirely

Tax relief was no doubt welcome but it almost surely did no increase expenditures on education by as much as might have been viewed.

In subsequent decades the relative importance of this source of revenue declined in both states. By 1860, the annual six-percent payout accounted for only about 5 percent of total expenditures in Ohio and a bit over 7 percent in Illinois. Not as great due to tax substitution, but it appears that school land sales did serve primarily to provide an early boost to public education. This was not due, however, to the front-loading of expenditures in the way that Taylor (1922) proposed. On the contrary. As we have just seen, the annual payouts made to schools based upon interest earned from land sales revenue grew markedly between 1840 and 1860. At the same time, though, the fraction of total educational costs covered by these payments declined markedly. This was a consequence of two major developments. The first was what Mayo (1902) calls the growing “army of children” (p. 378). Ohio had experienced a substantial amount of settlement by 1840, but by 1860 the number of school-age children had still grown by 42 percent. In Illinois there were nearly three and a half times as many children in the 5-14 age cohort in 1860 as there had been in 1840. The second major development was the amount of money spent to educate each child, which rose dramatically in both states, from a little over a dollar in 1840 to $5.46 and $5.63, respectively in 1860. As will be seen in the next chapter, what was happening in Ohio and Illinois mirrored trends that were nationwide, as what historians call the Common School Movement took hold. In these states, as in the rest of the country, more

and more children were attending more years of school, for more months each year, and they were being taught by better paid teachers in better facilities.

What is not shown in Table 5:13 is the fact that the army of children continued to swell in number. In Illinois, the 5-14 cohort exceeded 600,000 by 1870 and 800,000 by 1880. The average amount of schooling that children received also continued to increase, by about a year per decade, and the number of days they were in school each year grew as well (Turner *et al.*, 2006). Once all the section 16 land had been sold, however, it was gone. No additional revenue would be coming in, and the amount of interest on school funds paid out every year necessarily stayed constant. The contribution of section 16 land sales, which was already small by 1860, continued to decline in importance as the years rolled on.

The bottom two rows in Table 5:13 recapitulate something that has already been covered extensively in this chapter—the inequality that was present in the distribution of section 16 sales revenue in the states where the townships retained the money. As we see here, townships at the 10th percentile in Ohio received annual payments of only two to three cents per child, while those at the 90th percentile received payments that ranged from 61 cents per child per year to 82 cents. This is because school land in Ohio that had been leased on a permanent basis sold for mere pennies on the acre when leases were surrendered and fee simple title conveyed. Large amounts of section 16 in southern Illinois were also sold at low prices, but Illinois did not commit the error of issuing permanent leases. Sales prices and annual interest payments in townships at the 10th percentile were thus considerably higher. Because of the excellent prices obtained for some of the school land, townships at the 90th percentile in Illinois also received substantially higher levels of support than those at the 90th percentile in Ohio. A comparison of those townships at the top and those at the bottom of the distribution, however, reveals that the great disparities present in Ohio were also present in Illinois.

Summary

After initially seeking to sell the public domain at a measured, manageable pace, every subsequent policy innovation undertaken by the federal government lowered the price of land and hastened its transfer into private hands. In 1820 the minimum price was cut to $1.25 an acre. Preemption laws permitted squatters to buy at that price. Collusive behavior was omnipresent, openly tolerated, and in most cases the minimum price set by Congress was exactly what the government received. Tens of millions of acres were obtained at even lower prices in exchange for military bounties, purchased from the veterans who had been awarded them. The Graduation Act of 1854 cut the price of federal land to as low as 12.5 cents an acre. After passage of the Homestead Act in 1862 the federal government stopped selling land altogether and gave it to those who agreed to settle on it.

When the public domain was demarcated by the Public Land Survey, section 16 in each township was reserved to state or local governments for the support of public schools. According to the Federal Competition Hypothesis, section 16 could not be sold for prices that were higher than what the federal government was charging for the rest of the land. In the view of historians and contemporary observers alike, this meant that little revenue was raised when school land was put up for auction. Section 16 grants marked an unprecedented pledge of public support for education, but, due to federal competition in the land market, it was widely accepted that the amount of revenue raised from these endowments was disappointingly small.

Nowhere, however, do the data on section 16 sales support the Federal Competition Hypothesis. In ten of the eleven states examined in this chapter, state and local authorities sold school land at higher prices, and sometimes at much higher prices, than what federal land brought. This was not the case in Tennessee, but there, even more significantly, the state reserved a much smaller fraction of land for schools than what was provided to other states by the section 16 grant.

Many factors worked against the Federal Competition Hypothesis, but perhaps the most important was that of delay. While the federal government begin selling land in areas as soon as they were organized into territories, states were not able to dispose of the school lands until after they had been admitted into the Union. It was often decades after statehood before section 16 auctions commenced. Although not the product of a deliberate strategy, this lapse of time meant that when section 16 was put up for auction, most or all of the federal land in the area had already been sold, developed, and made productive. With little or no federal competition remaining, it was possible to obtain much higher prices for the school land.

Another important factor that served to undercut the Federal Competition Hypothesis was that of incentives. In most of the first group of states admitted to the Union, section 16 was reserved to the inhabitants of the township in which it was located. This gave local authorities strong incentive to get as much as they could for it. Large differences in land quality and sales prices, however, meant that some schoolchildren in these states drew much greater benefit from the school land endowment than did others. Starting with Michigan in 1837 and in almost every state subsequently admitted to the Union, section 16 was reserved to the state as a whole. This enabled state governments to create a single state fund and to apportion revenue across all schools in the state, thus equalizing the educational offerings available to children across the state. Without the strong incentives present at the local level, however, these states collected considerably less revenue from section 16 sales than they might have. Iowa was home to a large share of the best farmland in the world, but authorities there chose to sell much of it for the federal minimum price. In Michigan and Wisconsin, several hundreds of thousands of acres of valuable timberland were sold on credit with little money down. Predictably, many buyers made the small down payment required to purchase the land, stripped it of its valuable timber, made no additional payments, and let the land go back to the state. Michigan and Wisconsin also suffered significant losses due to the outright theft of timber from school lands.

Section 16 sales in Ohio and Illinois supplied a significant fraction of the revenue needed to build and operate the schools that were established before the Civil War. In other states, where school land did not bring as much at auction, the contribution of this revenue to public education was necessarily smaller. In any case, proceeds from the sale of section 16 school land necessarily topped out when all the land had been sold. As the population of the country kept growing, so, too, did the army of children being sent to school. Moreover, at the Common School Movement took hold, children attended school for more and more years and received more and more days of schooling per year. Ever increasing sums of money were required to pay for the educational offerings that people demanded. As will be shown in the next chapter, the key feature of the Common School Movement—the transition from private to public sources of revenue— enabled parents who could not otherwise afford to do so to not only send their children to school, but to keep them in school for longer periods of time. This created a positive feedback loop which simultaneously encouraged and required greater and greater amounts of revenue to be directed to education.

Table 5:1 Federal Land Sales, 1800-1860

	1800 - 1820			1820 - 1840		
	Acres Sold (thousands)	Pct. of State Area	Average Price	Acres Sold (thousands)	Pct. of State Area	Average Price
Ohio	7,566	29.6	$2.14	6,283	24.6	$1.27
Louisiana	—	—	—	2,858	10.7	$1.38
Indiana	2,491	11.5	$2.06	12,397	57.0	$1.26
Mississippi	1,148	3.8	$2.00	8,780	29.1	$1.30
Illinois	1,593	4.5	$2.03	10,874	30.7	$1.25
Alabama	3,957	12.2	$4.09	8,639	26.6	$1.31
Missouri	1,249	3.0	$2.68	7,260	17.3	$1.26
Arkansas	—	—	—	2,578	7.7	$1.26
Michigan	—	—	—	9,148	25.3	$1.26
Florida	—	—	—	850	2.0	$1.30
Iowa	—	—	—	1,141	3.2	$1.25
Wisconsin	—	—	—	1,923	4.6	$1.28
	1841 - 1854			1854 – 1862		
	Acres Sold (thousands)	Pct. of State Area	Average Price	Acres Sold (thousands)	Pct. of State Area	Average Price
Ohio	725	2.8	$1.89	88	0.4	$0.56
Louisiana	1,303	4.9	$1.27	1,968	7.4	$0.59
Indiana	1,657	7.7	$1.48	406	1.9	$0.24
Mississippi	778	2.6	$1.28	2077	6.9	$0.45
Illinois	5,758	16.2	$1.39	1,892	5.3	$1.19
Alabama	2,097	6.5	$1.26	5,662	17.4	$0.35
Missouri	4,427	10.6	$1.25	10,794	25.7	$0.51
Arkansas	1,054	3.2	$1.25	4480	13.4	$0.53
Michigan	1,102	3.1	$1.34	1,552	4.3	$0.77
Florida	339	0.9	$1.25	685	1.8	$0.44
Iowa	4,331	12.3	$1.25	6119	17.4	$1.26
Wisconsin	3,907	11.3	$1.26	3,687	10.7	$0.83
Minnesota	—	—	—	2,461	4.6	$1.23

Figure 5:1 Volume of Federal Land Sales, 1800-1860

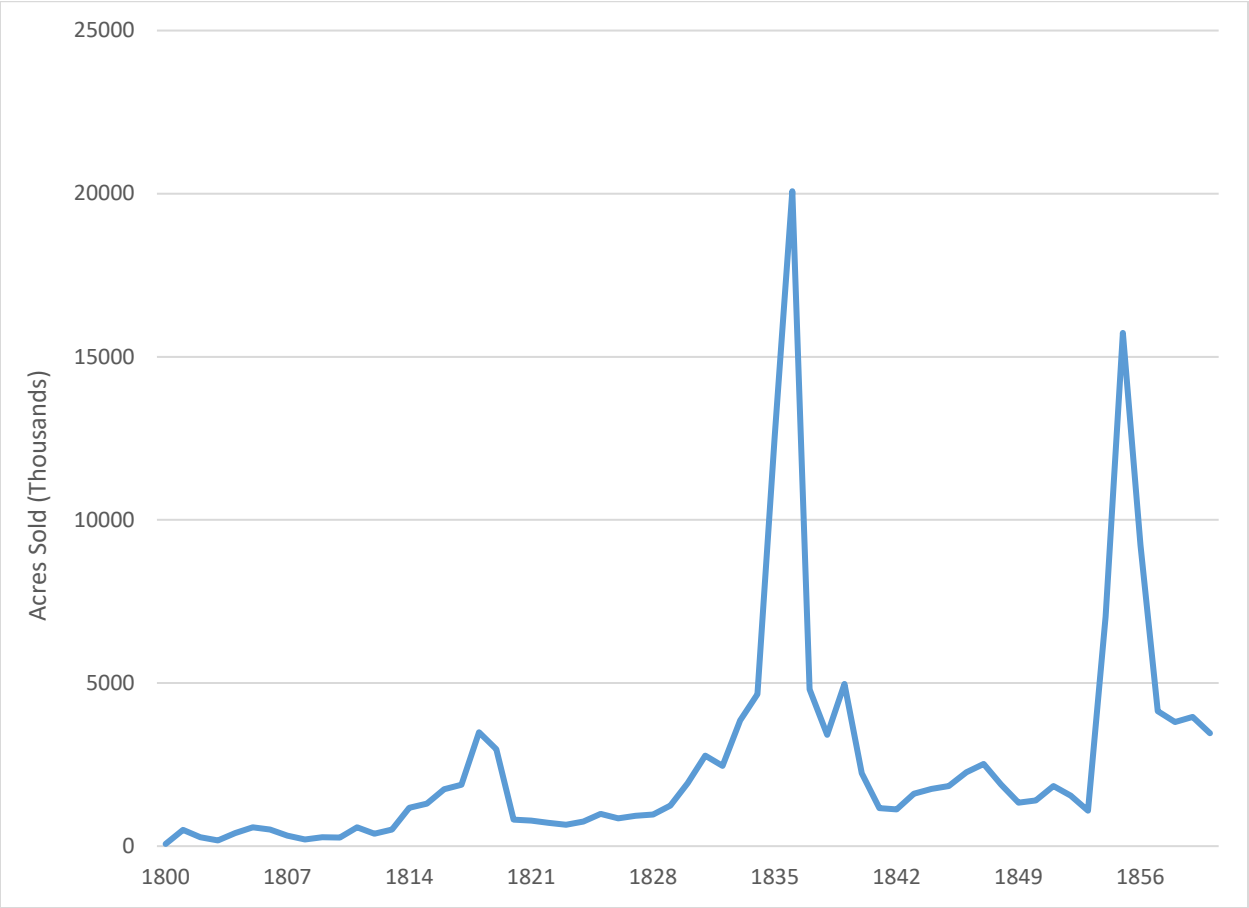


Figure 5:2 Federal Land Sales Contract, Iowa 1852

No. 20381 **LAND OFFICE** at Fairfield Iowa July 23 — 1852

I, Amasa Hoit of Mahaska County Iowa

do hereby apply to purchase the North West ¼ of South East ¼

Section thirty two in Township Seventy five N. of Range

Seventeen W. containing 40 Acres, according

to the returns of the Surveyor General, for which I have agreed with the Register to give at the rate of One Dollar and Twenty-five cents per acre.

Amasa Hoit

I, Francis Springer ***Register of the Land Office at*** Fairfield Iowa

do hereby certify, that the Lot above described contains Forty Acres,

as mentioned above, and that the price agreed upon is One Dollar and Twenty-five Cents per acre.

$50-00 Francis Springer *Register.*

Table 5:2 Sale of School Land in Ohio, 1829-1851

	Acres	Average Price
Section 16, 1829-1842		
Original Areas of Settlement	36,598	$0.74
River Ports	4,505	$8.78
Miami and Erie Canal Route	22,999	$9.32
Ohio and Erie Canal Route*	31,289	$5.56
All Other School Land	91,374	$3.39
Total	186,765	$4.10
Section 16, 1842-1851		
Law of 1843 (Appraised Value)	20,000	___
Law of 1845 ($5.00 minimum)	93,680	___
Over $5.00	4,160	___
Under $5.00	5,120	___
Virginia Military District	105,600	$1.49
U.S. Military District	72,031	$1.67
Western Reserve	92,692	$2.76

* In counties outside areas of original settlement

Table 5:3 Sale of School Land in Indiana, 1828-1856

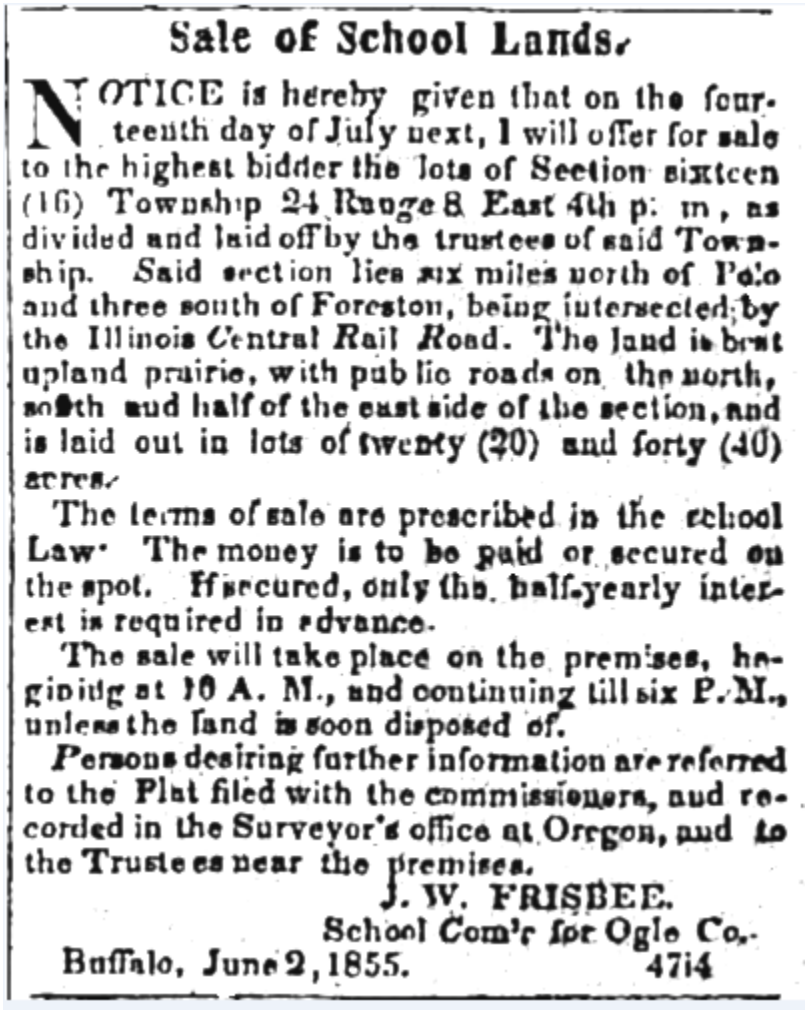
County	Sections sold	Ave. Price per Acre	County	Sections Sold	Ave. Price per Acre
Adams	11	2.78	Marion	16	2.37
Allen	17.5	3.93	Marshall	11	2.48
Blackford	4	2.70	Miami	10	4.59
Clinton	11	3.09	Monroe	11	3.78
Crawford	7	2.20	Montgomery	13	2.54
Daviess	11	2.39	Ohio	4	5.83
Decatur	11	2.77	Owen	9	2.77
DeKalb	12	2.30	Parke	12	4.37
Delaware	12	2.98	Porter	13	3.08
Elkhart	12	5.23	Putnam	15	2.54
Fayette	5	4.75	Randolph	16.3	2.89
Floyd	3	7.27	Shelby	12	2.64
Franklin	11	6.35	Spencer	9	2.16
Fulton	9	2.78	Switzerland	9	2.13
Grant	12	4.00	Tipton	6	2.25
Hamilton	9	3.83	Union	4	9.22
Howard	7	4.11	Vanderburgh	7	4.13
Huntington	11	4.13	Vermillion	12	4.04
Jefferson	10	3.89	Vigo	11.5	7.12
Johnson	9	3.07	Warrick	13	2.36
Kosciusko	14	2.83	Washington	1	42.97
LaGrange	12	2.25	Wayne	12	3.37
Lake	10	1.89	Wells	1	38.36
Madison	14	2.85			
			State Total	472.3	3.55

Table 5:4 Federal and State School Land Sales in Illinois, 1814-1862

Years	Federal Sales		Military Warrants		School Land Sales	
	Acres	Avg. Price	Acres	Avg. Price	Acres	Avg. Price
1814-1830	2,577	1.73	3,039	—	—	—
1831-1834	1,281	1.25	7	—	69	2.24
1835-1838	7,088	1.25	12	—	184	3.18
1839-1842	2,295	1.26	1	—	112	2.52
1843-1846	1,858	1.26	12	—	109	2.18
1847-1850	1,468	1.25	2,365	0.72	178	1.88
1851-1854	2,715	1.37	4,538	0.95	210	2.97
1855-1858	954	1.65	173	0.93	92	8.17
1859-1862	41	0.81	36	—	9	7.62
Totals	20,159	1.35	10,183	0.88	995*	3.68

* Includes 34,536 acres sold between 1863 and 1897.

Figure 5:3 Newspaper Advertisement for Sale of School Land in Ogle County Illinois, 1855



Sale of School Lands.

NOTICE is hereby given that on the fourteenth day of July next, I will offer for sale to the highest bidder the lots of Section sixteen (16) Township 24 Range 8 East 4th p. m., as divided and laid off by the trustees of said Township. Said section lies six miles north of Polo and three south of Foreston, being intersected by the Illinois Central Rail Road. The land is brat upland prairie, with public roads on the north, south and half of the east side of the section, and is laid out in lots of twenty (20) and forty (40) acres.

The terms of sale are prescribed in the school Law. The money is to be paid or secured on the spot. If secured, only the half-yearly interest is required in advance.

The sale will take place on the premises, beginning at 10 A. M., and continuing till six P. M., unless the land is soon disposed of.

Persons desiring further information are referred to the Plat filed with the commissioners, and recorded in the Surveyor's office at Oregon, and to the Trustees near the premises.

J. W. FRISBEE.
School Com'r for Ogle Co.

Buffalo, June 2, 1855. 47t4

Table 5:5 Comparison of Section 16 with Other Land Grants in Illinois

Grant	Acres	Ave. Price	Section 16 Acres	Ave. Price
Saline (1831-38)	121	0.59	253	2.93
Swamp (1851-62)	292	1.37	311	4.64
Canal (1851-62)	163	8.71	311	4.64
Railroad (1853-62)	176	10.17	193	6.07

Table 5:6 Determinants of the Price of Section 16 Land in Illinois, 1830-1862

Variable	All Town-ships	Military Tract Excluded	Log (Price)
c	-7.93	-8.46	-1.66
	(.47)	(.52)	(.08)
County Farmland Value	.25	.32	.08
	(.03)	(.04)	(.06)
Percent of Federal Land Sold	3.10	3.26	.93
	(.29)	(.34)	(.05)
Farm Product Wholesale Prices	.10	.10	.018
	(.01)	(.01)	(.001)
River Port	3.30	3.23	.61
	(.45)	(.51)	(.08)
Illinois Michigan Canal Route	-.52	-.69	-.13
	(.39)	(.49	(.07)
Illinois Central Railroad Route	1.91	1.67	.32
	(.46)	(.26)	(.043)
R^2	.42	.43	.51
n	1620	1365	1620

Table 5:7 Advisory Referendum on Consolidation of Sixteenth Section Funds, Alabama 1853

Section 16 Sale Proceeds	Number of Townships	Votes Yes	Votes No	Pct. Yes	Townships Yes	Townships No
$2560 and up	194	636	1436	31%	7	35
$2559 - $1971	57	434	268	62%	1	4
$1970 - $1280	83	645	437	60%	5	6
$1279 -$640	153	2,131	384	85%	9	5
$639 and less	384	7,314	287	96%	10	1
No sales	380	5,128	550	92%	28	8
Totals	1,252	16,288	3,362	83%	60	59

Table 5:8 Federal and School Land Sales in Missouri, 1818-1914

Years	Federal Sales		Military Warrants		School Land Sales	
	Acres	Avg. Price	Acres	Avg. Price	Acres	Avg. Price
1818-1820	1,274	2.65	—	—	—	—
1821-1830	1,104	1.26	—	—	—	—
1831-1840	6,131	1.26	—	—	67	2.20
1841-1850	2,640	1.25	736	.73	139	1.91
1851-1862	12,545	.62	4,944	.91	302	1.87
Totals	23,701	.99	5,680	.89	508	1.92
	Homesteads					
1863-1870	16	—	—	—	182	2.15
1871-1880	959	—	—	—	103	2.62
1881-1890	663	—	—	—	110	2.30
1891-1900	1208	—	—	—	101	1.96
1901-1914	773	—	—	—	142	2.00
Totals	3,619	—	—	—	685*	2.24

*Includes 47,245 acres sold between 1915 and 1967.

Table 5:9 Federal and School Land Sales in Arkansas, 1821-1994

Years	Federal Sales		Military Warrants		School Land Sales	
	Acres	Avg. Price	Acres	Avg. Price	Acres	Avg. Price
1821-1830	65	1.25	—	—	—	—
1831-1840	2,513	1.26	—	—	—	—
1841-1850	597	1.25	352	.70	16	3.01
1851-1862	5,005	.60	656	.87	138	2.73
Totals	8,181	.86	1,008	0.81	154	2.76
	Homesteads					
1863-1870	_	_	—	—	14	2.46
1871-1880	976	_	—	—	50	2.32
1881-1890	1,545	_	—	—	72	1.92
1891-1900	1,828	_	—	—	156	1.96
1901-1910	2,120	_	—	—	247	2.61
1911-1920	1,307	_	—	—	47	5.29
1921-1994	342	_	_	_	10	78.08
Totals	8,126	—	—	—	596	2.61

Table 5:10 Federal and School Land Sales in Florida, 1825-1958

	Federal Sales		School Land Sales		
Years	Acres	Ave. Price	Acres	Ave Price	$=1900
1825-1850	1027	1.29	—	—	—
1851-1862	847	.60	66	1.58	1.56
	Homesteads				
1863-1880	192	—	45	1.56*	1.07
1881-1890	793	—	251	1.38	1.21
1891-1900	872	—	119	1.14	1.14
1901-1910	687	—	274	1.45	1.38
1911-1920	594	—	28	4.97	4.15
1921-1930	178	—	28	38.14	17.71
1931-1945	8	—	43	7.43	4.35
1946-1958	2	—	45	30.39	9.32

Table 5:11 Federal and State School Land Sales in Iowa, 1838-1900

Years	Federal Sales		Military Warrants		School Land Sales	
	Acres	Avg. Price	Acres	Avg. Price	Acres	Avg. Price
1838-1842	1,265	1.25	—	—	—	—
1843-1846	727	1.25	—	—	—	—
1847-1850	638	1.25	2,728	.71	57	1.69*
1851-1854	4,823	1.25	2,668	.99	242	1.48
1855-1857	4,110	1.27	7,672	.96	169	2.04**
1858-1862	19	1.61	532	0.71	20	3.49
Totals	11,602	1.26	13,664	0.91	488	1.78
1863-1866	—	—	—	—	121	2.56
1867-1870	—	—	—	—	215	2.96
1871-1880	—	—	—	—	42	7.53
1881-1900	—	—	—	—	132	8.81
Totals	—	—	—	—	510	4.70

*Prices were not entered on records of the sales of 161,027 acres of Section 16 land sold between 1847 and 1857. Average price figures for those years are based upon the assumption that these were preemptive claims and that the land sold for $1.25 an acre.

** This figure is for land purchased before the $2.50 minimum was put in place in late March 1858.

Table 5:12 Federal and School Land Sales in Wisconsin, 1838-1900

Years	Federal Sales		Military Warrants		School Land Sales	
	Acres	Avg. Price	Acres	Avg. Price	Acres	Avg. Price
1834-1839	1,794	1.28	—	—	—	—
1840-1849	3,055	1.26	1,904	0.73	—	—
1850-1852	199	1.26	568	0.80	155	(*4.41)**
1853-1856	4,183	0.89	2,364	1.02	263	1.48
1857-1862	285	1.11	1,616	0.79	190	1.50
Totals	9,516	1.10	6,462	0.86	608	2.16
	Swamp Land Sales					
1863-1870	491	1.04	1000	—	378	1.47
1871-1880	952	0.97	392	—	296	1.35
1881-1890	842	1.24	304	—	223	1.32
1891-1900	276	1.44	64	—	56	2.23
Totals	3,317	1.19	1,792	—	959**	1.45

* Much of this land, which was purchased with no money down, reverted back to the state. Little revenue was collected from the initial sales.

** This total includes approximately 250,000 of the 500,000 acres that Wisconsin received from the federal government under the Preemption Act of 1841.

Table 5:13 The Contribution of Section 16 Land Sales to Ohio and Illinois Schools, 1840-1860

	Ohio			Illinois		
	1840	1850	1860	1840	1850	1860
School Land Revenue (thousands $)	1294	1535	2635	919	1594	3002
Annual Payments (thousands $)	78	92	158	55	96	180
Total Expenditures	440	892	3221	136	390	2422
Children 5-14 (thousands)	415	539	590	132	243	430
School Land Revenue Per Child	.19	.17	.27	.42	.39	.42
Expenditures per child	1.06	1.65	5.46	1.03	1.61	5.63
School Land Revenue Pct. of Total	17.9	10.3	4.9	40.8	24.2	7.4
Annual Payments 10^{th} Percentile	.02	.02	.03	.18	.20	.17
Annual Payments 90^{th} Percentile	.64	.61	.82	1.46	1.25	1.34

References

Abernethy, Thomas. 1955. *From Frontier to Plantation in Tennessee: A Study in Frontier Democracy*. Memphis, TN: Memphis State College Press.

Adams, Donald. 1970. "Some Evidence on English and American Land Rates, 1790-1830." *Journal of Economic History* 30:499-520.

Adams, Jane. 1996. *All Anyone Ever Wanted of Me Was to Work: The Memoirs of Edith Bradley Rendleman*. Carbondale, IL: Southern Illinois University Press.

Alston, Lee, Gary Libecap, and Bernardo Mueller. 1999. *Titles, Conflict, and Land Use: The Development of Property Rights and Land Reform on the Brazilian Amazon Frontier*. Ann Arbor, MI: The University of Michigan Press.

Anderson, Gary, and Dolores Martin. 1987. "The Public Domain and Nineteenth Century Transfer Policy." *Cato Journal* 6:905-23.

Anderson, Terry, and Peter Hill. 1990. "The Race for Property Rights." *Journal of Law and Economics* 33:177-197.

Arrington, Benjamin. 2012. "'Free Homes for Free Men': A Political History of the Homestead Act, 1774-1863." Ph.D. Dissertation. Lincoln, NE: University of Nebraska.

Bamman, Gale. 2021. "This Land Is Our Land! Tennessee's Disputes with North Carolina." Retrieved from https://www.tngenweb.org/tnland/bamman.htm.

Barnard, Charles M., and John Jones. 1987. *Statistical Bulletin 751: Farm Values in the United States by Counties, 1850-1982*. Washington, D.C.: National Resources Division, Economic Research Service, Department of Agriculture.

Barney, H. H. 1855. *Annual Report of the State Commissioner of Common Schools, to the Governor of the State of Ohio, for the Year 1854*. Columbus, OH: Statesman Steam Press.

Bates, Samuel. 1884. *History of Erie County, Pennsylvania*. Chicago, IL: Warner, Beers and Company.

Bioren, John, John Duane, and R.C. Weightman. 1815. *Laws of the United States from the 4th of March, 1789, to the 4th of March, 1815, including the Constitution of the United States, the Old Act of Confederation, Treaties, and Many Other Valuable Ordinances and Documents; with Copious Notes and References*. Washington DC: John Bioren and W. John Duane, Philadelphia, and R.C. Weightman, Washington City.

Bogue, Allan. 1958. "The Iowa Claims Clubs: Symbol and Substance." *Mississippi Valley Historical* Review 45:231-53.

Bolton, S. Charles. 1999. "Slavery and the Defining of Arkansas." *The Arkansas Historical Quarterly* 58:1-23.

Boone, Richard G. 1892. *A History of Education in Indiana*. New York: D. Appleton & Company.

Borit, G.S. 1974. "Lincoln's Opposition to the Mexican War." *Journal of the Illinois State Historical Society* 67:79-100.

Bossert, Michael. 1930. "Early Schools in Franklin County." *Indiana Magazine of History* 26:218-236.

Browning, Andrew. 2019. *The Panic of 1819: The First Great Depression*. Columbia, Mo: University of Missouri Press.

Bruce, Andrew. 1920. "State Socialism and the School Land Grants." *Harvard Law Review* 33:401-419.

Buck, Solon, and Elizabeth Buck. 1939. *The Planting of Civilization in Western Pennsylvania*. Pittsburgh, PA: University of Pittsburgh Press.

Buffum, Hugh Straight. 1907. "Federal and State Aid to Education in Iowa." *Iowa Journal of History and Politics* 4:554-598, 5:3-45, 147-192, 311-325.

Calomiris, Charles, and Larry Schweikart. 1991. "The Panic of 1857: Origins, Transmission, and Containment." *The Journal of Economic History* 51:807-834.

Cochran, Thomas Everette. 1921. "History of Public School Education in Florida." Philadelphia, PA: Ph.D. Dissertation, University of Pennsylvania.

Colton, Calvin. 1857. *The Speeches of Henry Clay, vol. 2*. New York: A. S. Barnes & Co.

Cook, John Williston. 1912. *Educational History of Illinois: Growth and Progress in Educational Affairs of the State*. Chicago, IL: The Henry O. Shepard Company.

Corlew, Robert. 1981. *Tennessee: A Short History*. Knoxville, TN: University of Tennessee Press.

Corley, Hugh. 1860. "State Register's Report." In *Journal of the Proceedings of the Senate of the General Assembly of the State of Florida, at the 10th Session, Begun and Held in the City of Tallahassee, on Monday, November 26, 1860*. Tallahassee, FL: Printed at the "Floridian Sentinel" Office, by Hart & Barefoot, 1860.

Culp, Peter, Diane Conradi, and Cynthia Tuell. 2005. *Trust Lands in the American West: A Legal Overview and Policy Assessment*. Cambridge, MA: Lincoln Institute of Land Policy/Sonoran Institute.

Dailey, John. 2004. "Ohio Lands and Survey Systems." *The American Surveyor* 1:1-8. Retrieved from https://amerisurv.com/issue/volume-01-issue-07/.

Dain, Floyd. 1968. *Education in the Wilderness*. Lansing, MI: Michigan Historical Commission.

Danhof, Clarence. 1941. "Farm-Making Costs and the Safety Valve, 1850-1860." *Journal of Political Economy* 49:317-359.

Dennen, R. Taylor. 1977. "Some Efficiency Effects of Nineteenth-Century Land Policy: A Dynamic Analysis. *Agricultural History* 51:718.736.

Dick, Everett. 1970. *The Lure of the Land: A Social History of the Public Lands from the Articles of Confederation to the New Deal*. Lincoln, NE: University of Nebraska Press.

Elsmere, Jane. 1967. "The Notorious Yazoo Land Fraud Case." *Georgia Historical Quarterly* 51:425-442.

Emerson, Edward Waldo and Waldo Emerson Forbes (eds.). 1913. *Journals of Ralph Waldo Emerson, with Annotations*. London, UK: Constable & Co., Limited.

Emill, Martin. 1933. "The Illinois Central and the Development of Illinois." Chicago, IL: M.A. Thesis, Loyola University of Chicago.

English, William B. 1996. "Understanding the Costs of Sovereign Default: American State Debts in the 1840s." *American Economic Review* 86:259-275.

Fairchild, Lucius, Samuel Hastings, and Winfield Smith. 1865. *Annual Report of the Commissioners of School and University Lands of the State of Wisconsin for the Fiscal Year Ending September 30, 1865*. Madison, WI: William J. Park, State Printer, Wisconsin Capitol Office.

Fairfax, Sally, Jon Souder, and Gretta Goldenman. 1992. "School Trust Lands: A Fresh Look at Conventional Wisdom." Environmental Law 22:798-910.

Faust, Ernest. 1951. "The History of Malaria in the United States." American Scientist 39:121-130.

Finkelman, Paul. 1989. "Evading the Ordinance: The Persistence of Bondage in Indiana and Illinois." *Journal of the Early Republic* 9:21-51.

Fliege, Stuart. 2002. *Tales and Trails of Illinois*. Champaign, IL: University of Illinois Press.

Foner, Eric. 1995. *Free Soil, Free Labor, and Free Men: The Ideology of the Republican Party before the Civil War*. Oxford, UK: Oxford University Press.

Forbes, Robert. 2007. *The Missouri Compromise and Its Aftermath: Slavery and the Meaning of America*. Chapel Hill, NC: University of North Carolina Press.

Ford, Seabury. 1850. "Special Message of the Governor in Relation to Western Reserve School Lands." In *Documents Including Messages and Other Communications Made to the Forty-Eighth General Assembly of the State of Ohio, Vol. XIV—Part I*. Columbus, OH: S. Medary, Printer.

Foster, Emily, (ed.). 1996. *The Ohio Frontier: An Anthology of Early Writings*. Lexington, KY: The University Press of Kentucky.

Frymer, Paul. 2014. "'A Rush and a Push and the Land is Ours': Territorial Expansion, Land Policy, and U.S. State Formation." *Perspectives on Politics* 12:119-144.

Gaff, Alan. 2004. *Bayonets in the Wilderness: Anthony Wayne's Legion in the Old Northwest*. Norman, OK: University of Oklahoma Press.

Gailmard, Sean, and Jeffery Jenkins. 2018. "Distributive Politics and Congressional Voting: Land Reform in the Jacksonian Era." *Public Choice* 175:259-275.

Gambino, Megan, and T.A. Frail. 2012. "Document Deep Dive: How the Homestead Act Transformed America." *Smithsonian Magazine*. Retrieved from https://www.smithsonianmag.com/history/document-deep-dive-how-the-homestead-act-transformed-america-60005030/.

Gates, Paul. 1963. "Free Homesteads for All Americans: The Homestead Act of 1862." Washington, D.C.: Civil War Centennial Commission.

Gates, Paul. 1968. *History of Public Land Development*. Washington, D.C.: Government Printing Office.

Gerson, Noel. 1968. *Franklin: America's "Lost State."* New York: Crowell-Collier Press/The MacMillan Company.

Gill, McCune. 1922. "The Beginnings of Title in St. Louis." *University of St. Louis Law Review* 7:69-84.

Go, Sun, and Peter Lindert. 2010. "The Uneven Rise of American Public Schools to 1850." The *Journal of Economic History* 701-26.

Goodpasture, Albert. 1899. "Education and the Public Lands in Tennessee." *The American Historical Magazine* 4:210-228.

Greever, William. 1951. "A Comparison of Railroad Land-Grant Policies." *Agricultural History* 25:83-90.

Greffenius, Ruben. 1968. "Development of Michigan Land Policy." Ann Arbor, MI: Ph.D. Dissertation, University of Michigan.

Grubb, Farley. 2011. "U.S. Land Policy: Founding Choices and Outcomes, 1781-1802. In Irwin, Douglas, and Richard Sylla (eds.), *Founding Choices: American Economic Policy in the 1790s*. Chicago, IL: University of Chicago Press.

Harrell, Isaac S. 1926. "North Carolina Loyalists." *The North Carolina Historical Review* 3:575-590.

Hatcher, Harlan. 1991. *The Western Reserve: The Story of New Connecticut in Ohio*. Kent, OH: Kent State University Press.

Heidelberg, C. Maison. 1992. "Closing the Book on the School Trust Lands." *Vanderbilt Law Review* 45:1581-1619.

Hibbard, Benjamin Horace. 1924. *A History of the Public Land Policies*. New York: The MacMillan Company.

Howe, Henry. 1907. *Historical Collections of Ohio in Two Volumes*. Cincinnati, OH: C.J. Krehbiel & Co., Printers and Binders.

Huber, Bruce. 2015. "The Fair Market Value of Public Resources." *California Law Review* 103:1515-1560.

Hurt, R. Douglas. "John Cleves Symmes and the Miami Purchase." 2003. In Van Tine, Warren, and Michael Pierce, (eds.), *Builders of Ohio: A Biographical History*. Columbus, OH: Ohio State University Press.

Hyde, Sarah L. 2017. *Schooling in the Antebellum South: The Rise of Public and Private Education in Louisiana, Mississippi, and Alabama*. Baton Rouge, LA: Louisiana State University Press.

Inman, Robert. 2008. "The Flypaper Effect." National Bureau of Economic Research, Working Paper 14579.

Irwin, Douglas. 2003. "New Estimates of the Average Tariff of the United States, 1790-1820." *Journal of Economic History* 63:506-513.

Irwin, Douglas, and Richard Sylla (eds.) 2011. *Founding Choices: American Economic Policy in the 1790s*. Chicago, IL: University of Chicago Press.

Jones, Thomas. 1968. "The Public Lands of Tennessee." *Tennessee Historical Quarterly* 27:13-36.

Kaestle, Carl. 1988. "Public Education in the Old Northwest: 'Necessary to Good Government and the Happiness of Mankind.'" *Indiana Magazine of History* 84:60-74.

Keith, John, and William Bagley. 1920. *The Nation and the Schools: A Study of the Application of Federal Aid to Education in the United States*. New York: The MacMillan Company.

Knepper, George. 2002. *The Official Ohio Lands Book*. Columbus, OH: The Auditor of the State.

Knight, George. 1885. *History and Management of Land Grants for Education in the Northwest Territory*. New York: G. P. Putnam's Sons.

Larrabee, William. 1853. *First Annual Report of the Superintendent of Public Instruction for the State of Indiana*, December 1852. Indianapolis, IN: J.P. Chapman, State Printer.

Larson, Lawrence. 1903. "History of Land Grants in Illinois." Urbana-Champaign, IL: B.A. Thesis, University of Illinois.

Lebergott, Stanley. 1984. *The Americans: An Economic Record*. New York: W.W. Norton.

Lechner, Carl. 1992. "The Erie Triangle: The Final Link between Philadelphia and the Great Lakes." *The Pennsylvania Magazine of History and Biography* 116:59-85.

Lewis, Samuel. 1839. *Third Annual Report of the Superintendent of Common Schools Made to the Thirty-Eighth General Assembly of the State of Ohio*. Columbus, OH: Samuel Medary, Printer to the State.

Lewis, William. 1857. *Biography of Samuel Lewis, First Superintendent of Common Schools for the State of Ohio*. Cincinnati, OH: R. P. Thompson, Printer.

Lokken, Roscoe L. 1942. *Iowa Public Land Disposal*. Iowa City, IA: State Historical Society of Iowa.

MacDonald, William. 1916. *Documentary Source Book of American History*. New York: The Macmillan Company.

Madison, James. 1782. "Letter to Benjamin Harrison," 15 November. Reprinted in Hutchinson, William, and William Rachal (eds.), *The Papers of James Madison, Volume 5*. Chicago, IL: University of Chicago Press.

Marbut, Curtis, 1934. "Report to the National Resources Board." Washington, D.C.: U.S. Department of Agriculture, Bureau of Chemistry and Soils.

Mayo, Armory. 1902. "The Common Schools in the Southern States Beyond the Mississippi River, 1830-1860." In Barnard, Henry, *Report of the Commissioner of Education for the Year 1900-1901, vol. 1*. Washington, D.C.: Government Printing Office.

McCullough, David. 2019. *The Pioneers: The Heroic Story of the Settlers Who Brought the American Ideal West*. New York: Simon & Schuster.

McGrane, Reginald. 1924. *The Panic of 1837: Some Financial Problems of the Jacksonian Era*. Chicago, IL: University of Chicago Press.

McAlvin, J.T. "Map Showing Locations of Lands Belonging to the Iowa Rail Road Land Company, Iowa Falls and Sioux City R. R. Land Company, Sioux City and Pacific Land Company, & Elkhorn Land Company." Cedar Rapids, Iowa. Retrieved from https://www.loc.gov/item/98688687/.

McKinney, John. 1860. "Annual Report of the State Treasurer." In *Joint Documents of the State of Michigan for the Year 1860*. Lansing, MI: Hosmer & Kerr, Printers to the State.

McLin, Benjamin. 1903. *Report of the Commissioner of Agriculture, State of Florida, for the Period Beginning January 1, 1901, and Ending December 31, 1902*. Tallahassee, FL: I.B. Hilson, State Printer.

Merk, Frederick. 1969. "Dissent in the Mexican War." *Proceedings of the Massachusetts Historical Society* 81:120-36.

Merkel, William. 2008. "Jefferson's Failed Anti-Slavery Proviso and the Nascence of Free Soil Constitutionalism." *Seton Hall Law Review* 38:555-603.

Miller, Edward Alonson. 1920. *The History of Educational Legislation in Ohio from 1803 to 1850*. Chicago, IL: The University of Chicago.

Mitchell, James T., and Henry Flanders. 1909. *The Statutes at Large of Pennsylvania from 1682 to 1801, Volume XIV, 1781-1793*. Harrisburg, PA: Harrisburg Publishing Co., State Printer.

Mitchell, Thornton W. 1993. "The Granville District and Its Land Records." *The North Carolina Historical Review* 70:103-129.

Murtazashvili, Ilia. 2013. *The Political Economy of the American Frontier*. New York: Cambridge University Press.

North, Douglass. 1966. *The Economic Growth of the United States, 1790-1860*. New York: W.W. Norton & Company.

Oberly, James. 1985. "Gray-Haired Lobbyists: War of 1812 Veterans and the Politics of the Bounty Land Grants." *Journal of the Early Republic* 5:35-58.

Oberly, James. 1990. *Sixty Million Acres: American Veterans and the Public Lands before the Civil War*. Kent, OH: Kent State University Press.

O'Callaghan, Jerry. 1954. "The War Veteran and the Public Lands." *Agricultural History* 28:163-168.

Onuf, Peter. 1986. "Liberty, Development, and the Union: Visions of the American West in the 1780s." *William and Mary Quarterly* 43:179-213.

Osborn, Ralph. 1825. "An Abstract of the School Lands of This State." *Journal of the Senate of the State of Ohio, First Session, Twenty-fourth General Assembly*. Columbus, OH: George Nashee, State Printer.

Owens, Robert M. 2007. *Mr. Jefferson's Hammer: William Henry Harrison and the Origins of American Indian Policy*. Norman, OK: University of Oklahoma Press.

Pattison, William. 1959. "The Survey of the Seven Ranges." *The Ohio Historical Quarterly* 68:115-140.

Patzer, Conrad. 1924. *Public Education in Wisconsin*. Madison, WI: State Department of Education.

Perdue, Theda, and Michael D. Green (eds.). 1995. *The Cherokee Removal: A Brief History with Documents*. Boston, MA: Bedford Books of St. Martin's Press.

Phillips, Claude. 1911. *A History of Education in Missouri: The Essential Facts Concerning the History and Organization of Missouri's Public Schools*. Jefferson City, MO: The Hugh Stevens Printing Company.

Putnam, James. 1918. *The Illinois and Michigan Canal: A Study in Economic History*. Chicago, IL: The University of Chicago Press.

Pyburn, Nita. 1954. *The History of a Single System of Education in Florida, 1822-1903*. Tallahassee, FL: Florida State University.

Quaife, Milo, (ed.). 1910. *The Diary of James K. Polk During His Presidency, 1845-1849*. Chicago, IL: A. C. McClurg & Co.

Rae, John. 1944. "Federal Land Grants in Aid of Canals." *The Journal of Economic History* 4:167-77.

Ress, David. 2019. *The Half-Breed Tracts in Early National America: Changing Concepts of Land and Place*. London, UK: Palgrave Pivot.

Richardson, Joseph, and Allen Trimble. 1824. "School Lands in Ohio." In *American State Papers, Volume III: Public Lands* (1834). Washington, D.C.: Gates and Seaton.

Rohrbough, Malcolm. 1968. *The Land Office Business: The Settlement and Administration of American Public Lands, 1789-1837*. New York: Oxford University Press.

Rousseau, Peter. 2002. "Jacksonian Monetary Policy, Specie Flows, and the Panic of 1837." *Journal of Economic History* 62:457-488.

Sakolski, Aaron. 1932. *The Great American Land Bubble: The Amazing Story of Land-Grabbing, Speculations, and Booms from Colonial Days to the Present Time*. New York: Harper& Brothers Publishers.

Sanderlin, Walter. 1946. *The Great National Project: A History of the Chesapeake and Ohio Canal*. Baltimore, MD: Johns Hopkins Press.

Sawyer, Franklin. 1842. *Annual Report of the Superintendent of Public Instruction*. Detroit, MI: Bagg & Harmon, Printers to the State.

Skeen, Edward. 1981. "'The Year without a Summer': A Historical View." *Journal of the Early Republic* 1:51-67.

Sioussat, St. George. 1908. "Some Phases of Tennessee Politics in the Jackson Period." *American Historical Review* 14:51-69.

Smith, Kenneth. 1986. *Sawmill: The Story of Cutting the Last Great Virgin Forest East of the Rockies*. Fayetteville, AR: The University of Arkansas Press.

Smoot, Frederick. 1998. "Tennessee's Surveyors' Districts. Retrieved from http://usgwarchives.net/maps/tennessee/tnsrvdis.htm.

Sowers, Don C. 1914. *The Financial History of New York State from 1789 to 1912*. New York: Columbia University.

Sugden, John. 1985. *Tecumseh's Last Stand*. Norman, OK: University of Oklahoma Press.

Swierenga, Robert. 1968. *Pioneers and Profits: Land Speculation on the Iowa Frontier*. Ames, IA: Iowa State University Press.

Swift, Fletcher Harper. 1911. *A History of Public Permanent Common School Funds in the United States, 1795-1905*. New York: Henry Holt and Company.

Tappan, Eli. 1876. "School Legislation." In White, Emerson, and Thomas Harvey, (eds.) 1876. *A History of Education in the State of Ohio: A Centennial Volume*. Columbus, OH: The Gazette Printing House.

Taylor, Howard. 1922. *The Educational Significance of the Early Federal Land Ordinances*. New York: Columbia Teachers College.

Tamura, Robert, Curtis Simon, and Kevin M. Murphy. 2016. "Black and White Fertility, Differential Baby Booms: The Value of Equal Education Opportunity." *Journal of Demographic Economics* 82:27-109.

Toulmin, Harry. 1816. "Letter to James Madison," 20 January. Washington, D.C.: National Archives, Founders Online. Retrieved from https://founders.archives.gov/documents/Madison/99-01-02-4891.

Treese, Lorett. 1992. The Storm Gathering: The Penn Family and the American Revolution. University Park, PA: The University of Pennsylvania State University Press.

Trexler, Harrison. 1912. Slavery in Missouri, 1804-1865. Baltimore, MD: The Johns Hopkins Press.

Turner, Frederick Jackson. 1920. *The Frontier in American History*. New York: H. Holt and Company.

Turner, Chad, Robert Tamura, Sean Mulholland, and Scott Baier. 2006. "Education and Income of the States of the United States, 1840-2000." Journal of Economic Growth 12:101-58.

Tyack, David, and Thomas James. 1986. "State Government and Public Education: Exploring the 'Primeval Forest.'" *History of Education Quarterly* 26:39-69.

Van Atta, John. 2014. *Securing the West: Politics, Public Lands, and the Fate of the Old Republic, 1785-1850*. Baltimore, MD: Johns Hopkins University Press.

Washington, George. 1785. "Letter to David Stuart," 30 November. Washington, D.C.: National Archives, Founders Online. Retrieved from https://founders.archives.gov/?q=Project%3A%22Washington%20Papers%22&s=1111311111&r=37562.

Watson, Blake. 2013. "Buying West Florida from the Indians: the Forbes Purchase and Mitchel v. United States." Florida International University Law Review 9:361-390.

Watson, Michael. 2024. Secretary of State of Mississippi website. https://www.sos.ms.gov/public-lands/16th-section-lands.

Weeks, Stephen. 1912. History of Public Education in Arkansas. Washington, D.C.: Government Printing Office.

Welden, Charles. 1935. "Alabama Sixteenth Section Lands." Auburn, AL: M.A. Thesis, Alabama Polytechnic Institute (now Auburn University).

Wilkinson, Norman B. 1958. "Land Policy and Speculation in Pennsylvania, 1779-1800." Philadelphia, PA: Ph.D. Dissertation, University of Pennsylvania.

Williams, Virginia, 1944. "*Tennessee Public School Lands*." Tennessee Historical Quarterly 4:335-348.

Wilson, John. 1853. *Report of the Commissioner of the General Land Office*. December 5, 1853. Senate Document 1. Washington, D.C.: Government Printing Office.

Woodward, Grace Steel. 1963. *The Cherokees*. Norman, OK: University of Oklahoma Press.

Wright, John. 1819. *Letters from the West; Or a Caution to Emigrants*. Salem, NY: Dodd & Stevenson.

Endnotes

[1] To say that something was sold for inadequate consideration means that it was sold for less than it was worth. This does not in and of itself provide grounds for voiding a sales contract, and the law instructs judges to be strongly inclined to uphold and enforce commercial agreements. It is only when the discrepancy between sales price and actual value becomes quite large that the courts are to take a look at it. Or, more precisely, "It is only where the inadequacy of consideration is grossly shocking to the conscience of the court that it will interfere." (*Pascarella v. Bruck*, 190 New Jersey Superior Court, 118, 124-5 (New Jersey Appellate Division 1983).

[2] Before the sale could take place, the federal government had to first persuade New York, Connecticut, and Massachusetts to abandon their claims to the area. The acquisition of this land gave Pennsylvania a valuable port on Lake Erie, which would serve as a major terminal of a canal system connecting Philadelphia with the Great Lakes (Lechner 1992).

[3] "The Year without a Summer" is something of a misnomer, in that average temperatures in 1816 were only slightly below normal. What actually devastated crops were three cold snaps, in June, July, and August, that produced snow throughout New England and hard killing frosts as far south as Virginia. According to the meticulous records kept by Thomas Jefferson, in 1816 the Middle Atlantic states also suffered from severe drought. There were recurrent periods of unusually cold weather in Europe as well, but crops there failed due to excessive rainfall and extensive flooding (Skeen 1981).

[4] One example, albeit an extreme one, is that of William Collins, who in 1819 bought 490 acres in Mississippi for $980. After putting down $245, he failed to make any subsequent payments. A private bill enabled his heirs to secure title to the land by paying the government the remaining $735 balance of the loan. Congress approved this bill in 1948 (Dick 1970).

[5] The anopheline mosquito was present in North America prior to colonization, and most European colonists had had some exposure to malaria. Far more virulent strains, however, were brought in by slaves imported from West Africa. White colonists were severely

affected, but not as badly as native Americans who had no resistance whatsoever to the pathogen (Faust 1951).

[6] In Article 8 of the treaty the United States promised to confirm the claims of those who possessed land in the area "…to the same extent that the same grants would be valid if the territories had remained under the dominion of His Catholic Majesty" (quoted by Watson, 2014, p. 368).

[7] The standard approach taken by Ensign Armstrong was to make a show of force, extract a promise from the intruders to leave the area within a few weeks, and march on. As he reported to his superiors, "This indulgence I thought proper to grant, the weather being too severe to turn them out of doors" (quoted in Foster 1996, p. 74). April in Ohio can be cold and rainy, but we suspect that Armstrong used weather as a convenient cover for his general reluctance to send the squatters packing.

[8] North (1966) reports no statistics, but the charts on pages 124 and 137 show that the positive association between commodity prices and federal land sales is due primarily to the sharp increases that both series exhibit in the 1816-1819 and 1835-1836 periods. Across the entirety of the 1815 to 1860 period, the Pearson *r* correlation between total acreage sold annually in the seven states of the Midwest and the average price of a bushel of corn was a modest .22.

[9] Land set aside for army veterans in Michigan proved to be of poor quality. The military reservation was transferred from there to Missouri, even though the ground there was not very good, either.

[10] This is not to say that investors like Watson were guaranteed hefty profits. Demand for raw, uncleared land evaporated during recessionary periods. Large landholders often chose to cut their losses, default on loans and taxes, and thereby forfeit their holdings. A "tax title" to the land could then be purchased at an attractive price—often by squatters who were already living there (Gates 1968).

[11] In seeking to obtain as much swamp land as possible, Louisiana hired lobbyist John McEnery, whose contract awarded him title to one half of all additional land he could persuade Congress to hand over. This turned out to be 107,712 acres (Gates 1968).

[12] It was long accepted by historians that Lincoln continued to oppose the Mexican War even after being warned by law partner and future biographer William Herndon that it

was political suicide to do so. Lincoln may well have received such advice, but, according to Borit (1974), Lincoln was in step with mainstream Whig sentiment of the time and there is no evidence that his stance was politically costly, either at the time or in the future.

[13] In 1872 Congress voted to allow Union Army veterans to apply their years of military service to the five-year residency requirement (*U.S. Statutes at Large, 42nd Congress 2nd Session, 1872, pp. 49-50*).

[14] Apples were a mainstay of the early American household. They could be eaten out of hand, but their primary use was in the production of cider. Cider is a tasty alcoholic beverage. It was also much safer to drink than water, which was often polluted, or, more often, the source of disease-causing bacteria. In the in the late 18th century, Americans consumed over 35 gallons of cider per capita per year. Apples also yielded cider vinegar, which was needed to preserve vegetables and other fresh foods (Watson 2013).

[15] Eighty years later, some section 16 land was still held by tenants with permanent leases. In 1919 the state legislature enacted legislation stipulating that "…such lands shall be considered, for all intents and purposes, as the property of the lessees and shall be assessed in their names." This gave the leaseholders strong incentive to obtain ownership of their land, as they were now going to have to pay taxes on it as if they owned it. A separate bill passed during the same session established procedures for negotiating the replacement of these leases with fee simple title (*Legislative Acts Passed and Joint Resolutions Adopted by the Eighty-third General Assembly, Volume CVIII*, 1919, pp. 612-622). It seems likely that this legislation prompted the liquidation of all remaining permanent leases.

[16] In order to proceed with the project, the Potowmack Company needed approval, as well as substantial financial assistance, from both Virginia and Maryland. To get these, Washington was forced to engage in a vigorous lobbying effort and to resort to some distasteful logrolling. This was one of the major sources of frustration that led Washington to throw his considerable support behind the idea of calling a convention to amend the Articles of Confederation. It was of course this convention that produced the Constitution of the United States (Sanderlin 1946).

[17] The North Carolina legislature ceded the area that became Tennessee to the Congress of the Confederation in April of 1784, but rescinded this action in November due to fears

that land titles that had been granted by North Carolina might be compromised. In the meantime, in August of 1784, residents of northeastern Tennessee declared independence and formed the State of Franklin. Franklin became a "lost state" when North Carolina ceded this area to the United State a second time, in 1789, after receiving assurance from the federal government that all North Carolina land titles would be recognized (Gerson 1968).

[18] According to Sioussat (1908), these innovative pricing plans strongly appealed to Missouri Senator Thomas Hart Benton, who came from Tennessee and who continued to follow political and economic developments there. Benton spent the next 30 years in Congress seeking adoption of a similar plan for federal land. As indicate previously in this chapter, his efforts culminated in passage of the Graduation Act of 1854, which allowed tens of millions of acres of federal land to be obtained for as little as 12.5 cents an acre.

[19] The memorial they sent to Congress requested that the federal government sell to the state, at a low price, all unsold land remaining in the public domain—almost 21 million acres (*Acts Passed at the Ninth Annual Session of the General Assembly of the State of Alabama*, 1828, pp. 161-165). The Alabama legislators pointed out that a large surplus was building up in the Treasury, where it would lie "dormant," and so there was no need for the federal government to collect any more money from land sales. Turning the land over to Alabama would also save the federal government the cost and inconvenience of processing hundreds of thousands of individual sales transactions and patent issues. Upon obtaining the land at a low price, the state of Alabama could then use the profits made from reselling it to underwrite major internal improvement projects, including a canal or a railroad to bypass the obstructions impeding navigation on the Tennessee River at Muscle Shoals, and a canal or railroad to connect the Tennessee River with Mobile Bay. The federal government did not accede to their request, but one cannot blame them for trying.

[20] The Public Land Survey in Illinois marked out only section (square mile) boundaries. In order to enable buyers to purchase smaller parcels of land, e.g., quarter sections (160 acres), half quarter sections (80 acres), or quarter quarter sections (40 acres), it was necessary for state and local authorities to have land surveyed within each section.

[21] When multiple parties purchased land jointly in Illinois, separate records for each of them were entered. This assists genealogical research, but it means that there are duplicate records of some transactions. In addition to eliminating duplicate entries, it was also vitally important to discover and to correct transcription errors in price and acreage. The most frequent error was an absent or misplaced decimal point, e.g., 4000 acres sold instead of 40.00, or $18.00 instead of $1.80. It was possible to correct the vast majority of these errors by cross-checking the three separate entries that were made, i.e., number of acres purchased, the price per acre, and the total amount of money paid.

[22] What Fithian purchased was worthless as farmland, which is why he was able to pick it up for next to nothing. The story, though, does have a happy enough ending. In 1939 the land became part of the Shawnee National Forest. The rolling hills, bluffs, lakes and streams of the area encompass some of the most beautiful scenery in the country.

[23] Although these were good prices for swamp land, they should have held on to it for another 25 years or so. In the last part of the 19th century, the development of ceramic tile drainage technology transformed millions of acres of chronically waterlogged soil in Illinois into some of the most productive ground in the world (Bogue 1951).

[24] By 1850 a substantial amount of land along the six-mile corridor was already in private hands. The Illinois Central was therefore authorized to claim unsold land extending out as far as fifteen miles from its tracks in order to obtain all the acreage it had been granted (Emill 1933).

[25] The $8832 in sales revenue delivered to the township school fund, paying out 6 percent annually, would have generated an impressive flow of $530 a year. It is nice to think that this financial backing helped provide young German immigrants Jacob and Rachel Kiewiet, who arrived in Brookville in 1861 and attended school in the township, with an excellent primary school education.

[26] That the state legislature was formed and began operating well before Missouri became a state is due to a controversy that arose after Missouri's admission had been agreed to under the terms of the Missouri Compromise. Enabling acts that authorized a new state to write a constitution and form a state government were almost always followed soon thereafter by an act admitting that state to the Union. In the case of Missouri, however, the state constitution that was adopted forbade "…Free blacks or mulattoes from coming

to or settling in the state, upon any pretext whatsoever." This clause was in clear violation of Article IV of the U.S. Constitution. The Missouri legislature eventually acceded to the demand of Congress to pass a "solemn public act" indicating that no legislation would ever be passed to implement this clause. With this assurance given, Missouri was admitted into the Union, over fifteen months after Congress had approved its enabling act (Forbes 2007).

[27] Legislation enacted by Congress in 1812 assigned land held in common by St. Louis, St. Charles, and other small towns in the area to the "domaine de sa majeste." Any lots that were not otherwise claimed by private individuals or by municipal authorities was reserved for the support of schools, although the total amount of land so reserved was limited to five percent of the area of the town or village (*U.S. Statutes at Large, 12th Congress 1st Session,* 1812, p. 748-52). Gill (1922) reports that as a consequence of this legislation, "…the public schools of St. Louis were provided with a large fund, which was their main support for many years, and to which fact can be attributed some of their early excellence" (p. 77) Phillips (1911), on the other hand, claims that although the land was valuable, the schools received very little income from it. We leave it to future research to evaluate the merits of these conflicting accounts.

[28] The Arkansas section 16 sales data are not as complete as the data for Illinois and Missouri. There are sales records for a bit over 826,000 acres, but for 86,000 acres the price or sales date are missing. A major reason why sales dates were missing is because for much of this period, deeds (including patents) did not have to be recorded at the time they were executed. The buyer could simply hold onto the deed or patent until they wanted to sell the land, transfer ownership, or mortgage it. We are grateful to Desmond Walls Allen for bringing this information, as well as that in the previous footnote, to our attention.

[29] A little over 16,000 acres was sold when Arkansas was not a state, i.e., between secession on May 6, 1861 and reentry into the Union on June 22, 1868. Arkansas was knocked out of the War when Union troops occupied Little Rock in 1863, and this allowed section 16 sales to resume.

[30] This is a slight overestimate of section 16 revenue, as the Primary School Fund also collected revenue from the escheats of intestate property to the state (Swift 1911).

[31] The Indians lost the eastern portion of Iowa in the Black Hawk "Purchase" of 1832. The bulk of the state was transferred to the federal government by the Sauk and Fox Cession of 1842 and the Potawatami Cession of 1846 (Lokken 1842).

[32] This calculation does not involve 3300 acres of in lieu school land selected in the Half Breed Tract (*U.S. Statutes at Large, 27th Congress 2nd Session, 1842, p. 522*). This was an area of 119,000 acres in Lee County, the appendage in the southeast corner of the state that protrudes below the rest of the border with Missouri. Created under the terms of a treaty between the United States and the Sauk and Fox tribes, it was meant to serve as a refuge for the offspring of white and Native American parents, whose status was problematic in both societies. Half-Breed Tracts were also created in Minnesota, Wisconsin, and Nebraska, but land in these areas was soon occupied and claimed by white settlers and land speculators (Ress 2019).

[33] As indicated at the beginning of this chapter, the only previous study based upon individual section 16 sales records is Swierenga's (1968), of Royce Cession 262. This area, ceded to the federal government by the indigenous tribes in 1839 and 1843, makes up about a third of Iowa. The findings of his analyses of this subset of Iowa are quite similar to those reported here, which cover the whole state.

[34] Most other states and territories had similar laws on the books. In Illinois, for example, anyone caught cutting down a tree or sapling on school land without authorization was liable for a fine of eight dollars for each instance, or between three and six times the amount of damage that they caused (*The Laws of Illinois Passed by the Twelfth General Assembly*, 1841, p. 261).