

Land, Debt, and Taxes: Origins of the U.S. State Default Crisis, 1839 to
1842.

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Of all the United States's abundant resource endowments perhaps the most generous was arable land. The new nation possessed hundreds of millions of acres of good land, whose inherent fertility could be exploited only by the development of transportation and financial systems. Not surprisingly, the new American states embarked on ambitious plans of infrastructure investment in canals and banks financed by extensive public borrowing, much of it from foreign investors. Apparently ambition exceeded ability. By 1842, eight states and the Territory of Florida were in default on their loans. Four states would ultimately repudiate all or part of their debts. It was a debt and default crisis not unlike late 20th century emerging-market crises.

As the title of Reginald McGrane's classic *Foreign bondholders and American State debts* suggests, most of the scholarly attention paid to the 1840s crisis focuses on international financial aspects and what happened when the states found themselves unable to meet their interest obligations.¹ Later in the 1840s, American states began rewriting their constitutions to change their fiscal institutions in ways designed to reduce the frequency of default crises in the future. They drew lessons from the mistakes they believed they had made in the 1820s and 1830s when debts for canals, banks, and railroads were incurred. If we are to understand why the states changed their constitutions, we need to understand and explain why, when, and how they borrowed in the first place. Our focus, therefore, is on the events leading up to the default crisis.

After a brief introduction to the history of the state borrowing, we will answer the why, when, and how questions in turn. Why were state willing to borrow such large amounts? Equally important, why were domestic and foreign lenders willing to lend so much? The answers involve not the profits expected to flow from state investments in canals and banks, but instead the enormous potential property tax revenues expected to flow from the large amounts of land within state borders brought into use in the 1830s. At reasonable estimates of land values and tax rates in 1836, most states could expect to cover all of their debt service out of property tax revenues.

Land is also critical to understanding when states borrowed. The Panic of 1837 did not stop state borrowing. In fact it did not even slow borrowing down. More state debt was issued in calendar 1838 than in any other year in the 1830s. Because of a little noted but important legal provision of public-land privatization, states in the west in the 1830's could not tax federal land sold to individuals for five years from the date of sale. The boom in land sales in 1835 and 1836 therefore led many western states to anticipate large increases in property tax revenues in 1840 and 1841. Consequently, states borrowed heavily in 1837 and 1838 because values per acre and the total acreage of soon-to-be-taxable land had risen so sharply in 1835 and 1836.

The answer to the question of how states borrowed varies by region, and is related to the fiscal and collateral role played by land. Northeastern states borrowed without raising property taxes, funding interest payments in the short term out of borrowed funds while anticipating that earnings from their transportation investments would eventually cover debt-servicing costs. Southern states borrowed almost exclusively to establish banks. The banks themselves were responsible for servicing state bonds and southern states never expected to service their debts. Northwestern states did raise property taxes when they began borrowing during and after 1836. In every region, states counted on a rising base of taxable acreage to cover debt service.

How states borrowed up to 1838 proved to be a critical determinant of how they behaved after the crisis broke out in 1841. Northeastern states raised property taxes to cover debt service. Pennsylvania and Maryland, however, temporarily defaulted because of delays in implementing tax increases. Southern states never expected to pay debt service, and when the banks to which they had issued state bonds went bankrupt, southern states often repudiated their debts. Our interpretation of the northeastern and southern states is enriched by including land in the story, although it accords with previous interpretations.

It is for the Northwest that we open up a fundamentally new understanding of the default crisis itself. Northwestern states were counting on rising land values to service debts, not on the completion of their canals and the realization of toll revenues. When Indiana, Illinois, and Michigan were forced to stop construction on their canal networks in 1839, land values

immediately began falling. When new taxable acreage finally came onto the tax rolls in 1840 and 1841, land values had fallen so far that these states were unable to service their debts. They defaulted on interest payments until land values recovered in the late 1840s. The Northwestern states are particularly important, because recent research shows that they were the focal point of the economic downturn that began in 1839.² Although we do not go into the macro-economic background of the Northwestern state crisis of 1839, we explain how the crisis was caused by the stoppage of work on canal and other projects in Indiana, Illinois, and Michigan beginning in the summer of 1839. This not only leads us to a different interpretation of the 1840s debt crisis, but it gives us insights into the institutional reforms in politics and public finance that the states implemented in the wake of the crisis.

AN OVERVIEW

Basic information on state debt in September 1841 and its accumulation from 1830 onwards are presented in Tables 1 and 2. Table 1 gives total debt in dollars, in per capita terms, whether and when the state defaulted, and whether and when the state repudiated its debts. Table 2 gives information on annual debt authorized. The most complete survey of state borrowing up to September 1, 1841, is the “William Cost Johnson Report.”³ Congressional investigators gathered a complete legislative history of state debt authorization, producing a series on debt authorized by year for each state: “debt outstanding on September 1, 1841 by year of authorization.” Since debt was often authorized in one year and issued over several following years, the annual figures in Table 2 do not represent debt issued by year. The table also does not report debt which was issued but had been repaid. So, for example, most of the original New York debt for the Erie canal and some of the early canal debt in Ohio and Maryland do not appear in the table. The final columns of Table 2 give the percent of debt issued to establish banks and the percent of all debt outstanding in 1841 that was issued between 1837 and 1841.

Aside from the overall level of debt, three features of Table 2 are noteworthy: regional variations, purpose of debt issued, and timing. Southern states borrowed almost exclusively to create or invest in banks. Northeastern states borrowed exclusively to invest in transportation

projects, either canals or railroads. Northwestern states borrowed primarily for transportation, but also for banks. The answer to why the South borrowed to finance banks and the North to finance transportation seems to be a straightforward result of geography. The southern states had workable access to water-borne transport through their river systems. The Northeast had access to the sea, but possessed neither a good navigable system in their hinterlands nor good routes over the mountains into the Ohio River valley. The Northwest, of course, had neither ocean transport nor a good system of rivers. States in the South and Northwest found it difficult to establish private banks and so encouraged bank development through state participation.

The second difference is timing. State borrowing in the 1820s and early 1830s was concentrated in New York, Ohio, Pennsylvania, Maryland, and Louisiana. Northwestern and southwestern states borrowed little before 1835. One question is why western states did not borrow before 1836.

The wave of borrowing after 1836 occurred throughout the west and northeast, but unevenly in the south. Indiana, Illinois, and Michigan jumped into the transportation boom with both feet. Arkansas became a state in 1837 and immediately borrowed to establish two banks. Mississippi borrowed \$5 million in 1838 to establish the Union Bank. Alabama borrowed heavily after 1836 to rescue its State Bank. Missouri, Kentucky, and Tennessee began to borrow. The second timing question is why borrowing expanded so rapidly in 1837 and 1838, particularly in the west.

WHY? EXPECTATIONS AND HOW MUCH STATES COULD BORROW

Explanations of how much states borrowed involve the expectations of borrowers and lenders about future revenues available to service bonds. Economic historians traditionally focus on the revenues from the projects themselves, drawing the quite reasonable inference that states defaulted because expected revenues, either in the form of tolls or dividends, failed to materialize.⁴ Yet the inference is, generally, unwarranted. The borrowing capacity of states did not depend on expectations about the returns from state investments. Both state borrowers and lenders, foreign and domestic, anticipated that states could tax land if their bank and

transportation projects failed. We begin by constructing hypothetical estimates of the borrowing capacity of each state, then consider the interaction between borrowing capacity and the method of state borrowing in each of the three primary regions.

The arithmetic of state borrowing and taxation of property is straightforward. A typical, and quite low, rate of property taxation at the state level in the early 19th century was 1 mil (Table 3, Panel A). Bonds paying a 5 percent coupon were often issued, even though market rates for state bonds before 1838 and 1839 were in the neighborhood of 4 percent. Property worth \$1,000 would pay an annual tax of \$1, and that tax could be used to service \$20 in debt (at a 5 percent coupon rate). A 1 mil tax could be used to service bonds equal to 2 percent of the value of property taxed. The borrowing capacity of state governments, based solely on the taxable value of their lands can be expressed:

$$(1) \text{ Borrowing Capacity} = [(\text{Taxable Acres}) * (\text{Value Per Acre}) * (\text{Tax Rate})] / [\text{Interest Rate}]$$

Taxable acres are the number of acres subject to tax; Value Per Acre is in dollars; the Tax Rate is in mils (.001); and the Interest Rate in levels (.05). Table 4 calculates the per acre borrowing capacity for a state paying a 5 percent coupon rate, under different assumptions about the value of taxable land and the tax rate. The box highlights the borrowing capacity per taxable acre that we believe is most relevant for the 1830s.

Indiana shows why expectations about land values underlay the state's ability to borrow and the willingness of creditors to lend, despite what seems to most observers to be Indiana's fiscal madness (Indiana will be discussed in greater detail below.) In 1836, Indiana had a population of roughly 600,000 people, and a state budget of about \$50,000. Revenues were divided roughly equally between a poll tax and a per acre tax on land. Yet in 1836, the Indiana legislature authorized the canal fund to borrow up to \$10,000,000 in 5 percent, 30 year bonds, carrying an annual interest service of \$500,000 per year! How could any rational investor lend any money at all to Indiana? How could any voter support a legislator who voted for such a scheme?

In 1836, Indiana legislators knew that the state would be able to tax 15,000,000 acres of

land by 1841, and based on 1836 values, the land would be worth somewhere between \$5 and \$10 an acre. The total value of Indiana's taxable land, therefore, was between \$75,000,000 and \$150,000,000. In 1841, Indiana property tax rates reached 4 mils. A tax rate of 4 mils in 1836 could be expected to comfortably service between \$6,000,000 and \$12,000,000 in state bonds. Indiana taxed wealth in addition to land. Non-land wealth amounted to \$54,000,000 in 1842, capable of supporting an additional \$4,320,000 in bonds. Although historians regularly excoriate Indiana for its fiscal irresponsibility in 1836, there can be little doubt that both investors and state politicians had solid grounds for believing that Indiana would be able to service \$10,000,000 in canal debts.⁵

A tax rate of 4 mils was a high but feasible tax rate for the 1830s. Rates of 4 mils or higher were levied in Indiana, Illinois, Ohio, and Michigan in the early 1840s (Table 3, Panel B). Since most states also taxed non-land wealth as well as land, we will use a tax rate of 5 mils on the value of land as an appropriate estimate for evaluating the ability of state to borrow. The first column of Table 5 gives total land area in each state. The second column gives "potential taxable acres," based on the assumption that 75 percent of the land area in a state was taxable. The third column gives the hypothetical borrowing capacity of each state, based on an assumed tax rate of 5 mils, a land value of \$7.50 an acre, and a coupon rate on state bonds of 5 percent. The assumed values serve as a useful benchmark to help understand why creditors were willing to lend so much to western states with small, poor, rural populations in the 1830s. The assumption of a 5 mil tax rate and a 5 percent coupon rate implies that the borrowing capacity of the state is 10 percent of the value of taxable land.

We do not know exactly how much land was taxable in each state in each year in the 1830s. We do have figures on taxable acres for some states given in column 4 of table 5 (an incomplete time series is given in Table 7). By the early 1840s, Indiana taxed 15,000,000 acres of land; Illinois, 15,000,000 acres; Ohio, 20,000,000 acres; and New York, 27,000,000 acres. This land was the valuable fiscal reserve standing behind state borrowing.

The figures indicate that land provided a sufficient reserve to explain why states

borrowed and why creditors lent. If investors and borrowers expected that land would or could be used to service debts, we should expect to see such wide-spread sentiments reflected in contemporary writing. They were. Alexander Trotter, in his *Observations on the Financial Position and Credit of such of the States of the North American Union as have Contracted Public Debts*, published in London in 1839, wrote about investments in internal improvements:

In such works a considerable time will, in general, elapse before any profitable returns are made; and in a variety of cases many of them will doubtless fail altogether to produce a revenue sufficient to keep them in repair, and to pay the interest on the cost of their construction. If this is foreseen in the case of any particular work, still it may not be a sound objection against engaging in it, as by its accomplishment the state may adequately benefit, if it can attract, through its means, to itself a portion of the trade which might otherwise be withdrawn, through other channels, to rival states; or such a work may, by its contributions to other main lines of improvement, compensate the state for the amount expended on its construction; but the prospect that many, and the certainty that some, of the public works undertaken by the states will not produce revenue adequate to their cost make it incumbent, where the results anticipated have not been verified by tried success, to examine whether a state possesses other means to redeem the sums borrowed, when the periods of payment arrive, and to preserve unimpaired the credit which it has pledged for the punctual payment, in the mean time of the interest. (p. 74)

Trotter's inquiry is particularly relevant, because he begins with the assumption that most of the projects states are engaged in will not be profitable. He continues, on page 105, to argue that while returns from proposed projects ought not to be lost sight of, "it is of no less importance to keep in view the wealth and general resources of the borrowing state. In the following chapter an attempt will be made to bring such facts before the reader as will enable him to form a judgement on these points." The chapter that follows in Trotter details the assets and finances of the state governments, paying particular attention to the amount of landed wealth subject to or potentially subject to taxation. For example, he concludes his section on Indiana by noting that "The property subject to taxation in this state is estimated at \$75,000,000 00, which is considered a low valuation" (p.305).

Another European observer was Alex Lombard, a Swiss banker writing in Geneva in 1841. Like Trotter, Lombard is positive about investments in American state securities and he

too holds no naive expectations about profits from state investments:

In fact, however overdone the simultaneous development of so large a number of projects may have been, and although some of them could actually be called insane, with a cost all out of proportion to their return, it is fair to say that they have all more or less contributed to that majestic pattern of business activity and growing prosperity that the United States represents. Nearly all of these enterprises have provided or will provide their quota of revenue, and several are already achieving the wildest forecasts. Furthermore, however deep in debt many of the States of the Union may appear, it should be noted that their public debts not only loom less large in proportion to their territory, but they also bear much less heavily on the people, to the extent that they do at all, for commerce alone, or virtually alone, meets the cost. In fact, so far direct taxes in the United States are insignificant... (pp. 9-10)

Despite Lombard's contradictory statements that some projects might be called insane paired with the assertion that nearly all the projects have provided their quota of revenue, he reaches the bottom-line conclusion that Americans had lots of land to tax, that their existing debts were not large compared to their taxable lands, and that land taxation was insignificant. The implication is clear that American states could raise property tax revenues to service their internal improvement debts even if the projects failed.

Trotter and Lombard hint at another aspect of the importance of land that modern scholars have found strong evidence for: that internal improvements generated substantial increases in the value of land. Why did voters support projects and politicians? If a state borrowed 10 percent of the value of taxable land to finance projects, then the projects had to raise the value of land by more than 10 percent to be socially beneficial. A large literature on the value of transportation improvements in the 19th century suggests that access to a canal or river raised the value of farm land by roughly 100 percent. If land values rose by a sufficient amount when a canal or railroad was built, the state government would have been able to repay its bonds out of higher property tax revenues even if the state received no direct financial return on its investment. Heckelman and Wallis (1997), Wallis (2003), Eschelback and Coffman (1998), and Weiss, Craig, and Palmquist (1998) all document how transportation improvements significantly raised land values. There can be little doubt that, *ex ante*, individual land owning voters on or

near proposed transportation routes had ample reasons to support projects. The ideas that land could serve as a fiscal reserve ultimately available to service state debts and that transportation investments would augment the reserve of land value were accurate perceptions in early 19th century America.

WHEN? THE TIMING OF STATE BORROWING

One of the most striking feature of state borrowing is the sharp increase after 1836, particularly to those raised on an economic history in which the Panic of 1837 signals the end of the 1830s land boom and the beginning of the depression that concludes with the state defaults. The timing of state borrowing can easily be understood in light of a feature of federal land-sale policy little noticed by historians of the era. When Ohio became a state in 1803, Congress agreed to dedicate 5 percent of federal land sale revenues in Ohio to the building of transportation improvements to and within Ohio. In return, Ohio agreed to promote land sales by not taxing land the federal government sold to private individuals until five years after the sale. The five-year tax moratorium became a provision of enabling acts by which other western territories became states.⁶

During the great land boom of the 1830s, when tens of millions of acres were transformed from public land to private property, the states of the old Northwest and the old Southwest saw their *potential* property tax bases increase enormously. Indiana, for example, taxed 4 million acres of land in 1833, but would tax 15 million acres in 1843. Land sales nationally and for a selection of states are given in Table 6. Table 7 shows information on acres subject to taxation, by year, for several states for the period 1835-1844. More land was sold in 1836 than in any year between 1790 and 1860. Equally important for understanding state borrowing, land sales in 1839 were still well above average for the ante-bellum period. The land boom did not end until 1839.

The effect of the property tax moratorium can be seen in the five-year lag between federal land sales and the increase in taxable acreage in each state in Table 7, panel A. Note the significant increase in taxable acres in Indiana and Illinois in 1841 and 1842. Not only did

taxable acres increase greatly, but the value of land per acre was also rising, as shown in Table 7, panel B. Between 1835 and 1837, for example, the assessed value per acre in Indiana rose from \$5.41 to \$9.87.⁷ Per acre land values in New York rose from \$12.49 in 1835 to \$21.86 in 1838. The combined effect of massive land sales and rising land values dramatically changed the fiscal and economic outlook for western states, north and south, between 1835 and 1837. This is the primary reason why these states borrowed so much for internal improvements after 1836: greater fiscal resources were suddenly available. Because of the moratorium, a good portion of those resources would not be taxable for five years, which made borrowing against foreseeable future revenues all the more attractive.

Expectations of increased future tax revenues led states in the Northwest to borrow large sums for transportation improvements. Political leaders and voters in these states did not delude themselves, as is sometimes alleged, into thinking that improvement projects would pay for themselves through canal tolls and the like.⁸ Governor Noah Noble of Indiana, addressing the state legislature in December 1834, made it clear that taxes, not project revenues, would be the primary source of debt service:

The Treasury of a well-managed Government, is the pockets of the people, in which something should be placed by wise legislation, before much is required. To borrow money at a fair rate of interest, and expend it upon some well selected objects of paramount public utility, will not embarrass the Government or impoverish the people, but on the contrary will enrich both. *If the interest is annually raised by taxation*, the ability of the people to pay these taxes is proportionally increased, because the principal of the debt is expended among them.... This is not mere speculation; it is theory based upon reason and abundantly verified by facts and experience. (Riker and Thornbrough, *Noble Papers*, p. 320; emphasis added.)

The idea that states expected improvement project revenues to service debts incurred to finance them, but then those expectations went unfulfilled, is not a valid explanation of the debt crisis.

After 1836, increasing land values and taxable acreage were the common factor underlying state fiscal policies, bank investments, and transportation improvements nationwide. Northeastern states knew they had large amounts of untaxed land, rising in value. It was a fiscal

reserve against which they could borrow to finance extensions of their transportation systems. Western states, north and south, were in the midst of the greatest land boom in American history. If northwestern states were uncertain about just when transportation investments would generate revenues, they nonetheless anticipated that many more, and more valuable, acres could soon be taxed. States were thus confident that property tax proceeds would provide adequate fiscal resources to service the debts they incurred. Investors in state bonds concurred.

HOW? MODELS OF STATE BORROWING

How did the states propose to service their debts? There were three fiscal models used to borrow and repay debt, which we identify with the states of Indiana, Pennsylvania, and Mississippi. We describe the models first, and then set forth how they developed out of the interaction of land values, property taxation, and investment opportunities.

The Indiana model is distinguished by raising taxes, or providing for new tax instruments, at the time debt is first issued. This method was used by New York in the 1810s, as well as by Ohio in the 1820s, and Indiana and Illinois in the 1830s. When New York began the Erie Canal in 1817, the canal's financial prospects were uncertain. So the state funded canal debts by dedicating two revenue sources to debt service: auction duties and a salt tax. New York also passed a special canal tax to be levied along all property within 25 miles of the canal, but only if the canal fund was unable to service bonds from other revenues. In 1824, the proceeds of these two taxes amounted to \$290 thousand, which was nearly enough to service canal bond interest of \$350 thousand. Moreover, canal tolls generated more revenue than had been expected. New York never implemented the special property tax and was easily able to service and redeem its debts.

The idea behind the special property tax was to levy taxes on the primary beneficiaries of the canal. Ohio, Indiana, and Illinois followed the same policy when they authorized their first bond issues. All three states instituted *ad valorem* property taxes and increased tax rates. Their new tax policies (as in New York) were explicitly designed to capture the rising value of land near transportation improvements. These states hoped to service debts with the revenue proceeds

of an expanding tax base. The Indiana model was to create and raise new taxes to service debt at the time borrowing commenced.⁹

Pennsylvania, in contrast, did not raise taxes when it began issuing debt to finance its transportation projects in 1828. Instead, Pennsylvania borrowed money to pay interest, counting on expected canal toll revenues to service debts when the system was to be completed in 1835. As a result, Pennsylvania had to borrow more money than New York to finance a given amount of canal construction, and its debts increased over time as the state borrowed more and more to cover interest payments. The Pennsylvania model was to borrow, pay interest with the proceeds of more borrowing, count on eventual project revenues to service most debts, and delay taxing until such time as it became absolutely necessary. Pennsylvania hoped taxes would never become necessary, but if pressed Pennsylvania knew that it possessed ample amounts of land that could be taxed. The Pennsylvania model was adopted in Maryland, Massachusetts, and, interestingly enough, in New York and Ohio in the late 1830s when those states undertook an expansion of their canal networks.

Mississippi, whose internal improvements were entirely in banking, followed a third model. When the state chartered and invested in a bank, it did so by issuing bonds to the bank to purchase bank stock, or it simply issued bonds in favor of the bank. The bank was then required, by explicit terms in its charter, to service both interest and principal on the state bonds from dividends on the state's bank stock. Dividends on bank stock, based on previous American experience, were expected more than to cover debt service requirements. Although the state pledged its faith and credit to repay the bonds to help market them, the state never intended to pay either interest or principal on them. The Mississippi model was to issue debt that the state never intended or expected to service with tax revenues. This model applied in Florida, Mississippi, Louisiana, and Arkansas.

The three fiscal models were not exclusive categories. States could blend each of the three forms, and many did a little of each. But the three basic models are readily apparent in the state histories. Some states raised taxes when they borrowed, other states put off tax increases by

borrowing to meet current interest obligations, and other states never expected to pay interest or principal on the bonds they issued.

The underlying reasons for adopting each of three methods resulted from the timing of debt issue and the purposes for which debt was issued, as well as several unique features of property taxation. Ohio, Indiana, and Illinois all switched from flat per acre land taxes to *ad valorem* land taxes when they began their internal improvements. The motivation was explicit: land owners along canal routes would reap higher benefits from state investments and through *ad valorem* taxation would bear a higher share of the cost. The problem for state governments, of course, is that many voters are also land owners. As a result, property taxes were politically unpopular. Whenever possible, states preferred to levy taxes on businesses or to derive income from asset ownership such as state investments in bank stock. Table 8 shows property tax revenues as a share of non-loan state revenues in eastern and western states between 1835 and 1841, and between 1842 and 1848. Eastern states had a long history of taxing banks and other corporations and investing state resources in private corporations. Canal tolls from the Erie Canal enabled New York to suspend the state property tax in the 1820s. Alabama and Georgia were able to suspend their state property tax in the 1830s because of rising dividends from their bank investments. Western states, however, had few banks and businesses to tax and so relied heavily on the property tax for state revenues.

Timing matters again. When New York began the Erie Canal in 1817, it was not clear that the Erie would pay its own way. As a result, New York raised taxes when it started borrowing. But the apparent success of the Erie by 1825 suggested that canal tolls would be forthcoming in other states when their canals were completed. These expectations, combined with the ability of eastern states to raise revenues from other tax sources, enabled Pennsylvania and Maryland to borrow in the 1820 without levying raising property taxes at all. When Massachusetts began borrowing in the late 1830s and New York and Ohio resumed borrowing to extend their transportation network, these states did not raise property taxes.¹⁰

Ohio in the 1820s and Indiana, Illinois, and Michigan in the 1830s were in similar

positions to New York in the 1817. They had land to tax, and because of the tax moratorium on public land sales all four states knew in 1836 that their tax revenues would rise in 1841. But they were uncertain of the fiscal prospects for their proposed canals and railroads. So they changed their tax structures as they began to borrow and, critically, they anticipated that property tax revenues would be available to service debt. As we will show later in detail, these states did not anticipate that canal revenues would be available to service debts in 1841, and therefore did not default because their canals were not completed. They defaulted because land values in 1841 were half of what they had been in 1837. But that is getting ahead of our story.

The method of borrowing used by southern states epitomized by Mississippi was chosen because southern debt was issued in favor of banks. These banks were closely tied to the land. With a few exceptions, southern states invested in land banks. Private shareholders purchased stock in these banks by giving mortgages on their lands; the stock purchased was usually limited to half the value of the lands mortgaged.¹¹ Stockholders were then able to borrow from the bank to buy new lands as well. The state purchased its share of stock by issuing state bonds. The bank's liquidity came from sale of the bonds; their primary assets were the mortgages. In every case, the banks themselves were responsible for debt service on the bonds, although the details of the arrangements differed between banks.¹² In no case was a state directly responsible for paying interest on state bonds.

Southern state investment in land banks was unique. Backed by prime cotton and agricultural land, these banks were thought to be among the safest investments in the United States. Barings, the noted British merchant bank, was so confident in this type of bank that it urged Louisiana to form the Union Bank of Louisiana in 1832, and took the entire issue of state bonds at a premium as a demonstration of its confidence.¹³ Unlike transportation investments in the north, which were always regarded as speculative despite the success of the Erie Canal, land banks were thought to be close to a sure bet. The reason: the bonds were backed by the lands of the stockholders. Unlike the transportation investments in the North, which raised land values generally throughout the state, southern land banks benefitted only the shareholders who were

able to mortgage land to buy slaves or more land. Domestic and foreign investors who purchased southern state bonds thinking they were the safest investment available would be bitterly disappointed. When land values fell after 1839, the land banks collapsed, and southern voters who had never expected to pay debt service and who had not received any benefits from the creation of the banks, repudiated the bonds.

SUMMER 1839: THE MORRIS CANAL AND BANKING COMPANY

We arrive at the summer of 1839, and the onset of the default crisis and have yet to talk about the macro-economic situation, particularly the Panic of 1837. We pass over the panic because it had little effect on state borrowing: in calendar 1838, 1839, and 1840 states authorized a total of \$96 million in new bonds, of which \$78 million were actually issued (Table 2). By comparison, federal government borrowing to finance the War of 1812 totaled \$82 million, less debt than the states authorized after the Panic of 1837 had run its course.

The Panic of 1837 clearly did not stop state borrowing. The economic crisis that began in the summer of 1839, on the other hand, ultimately led to the state defaults in 1841 and 1842. The onset of the 1839 crisis is usually dated in October and associated with the second suspension of specie convertibility by the Bank of the United States of Pennsylvania. In the *Jacksonian Economy*, Temin suggests that the Crisis of 1839 was caused by the same forces that caused the Panic of 1837: “There is no single cause of the crisis in 1839, and the causes must be sought in the dislocations of trade and finance that started in 1837. The analysis of the proximate causes of the new crisis will make the connections with earlier events clear” (p. 152). As with 1837, Temin argues that international forces and credit tightening by the Bank of England explain the Crisis of 1839.¹⁴

While we do not offer a full analysis of the macro-economic events from 1839 to 1843, we can sort out enough of what happened to understand that the beginnings of the crisis in the summer of 1839 were associated with state finances. Kim and Wallis show that the Crisis of 1839 clearly started in the United States, not in Britain, and that credit conditions in 1839 were tighter in the United States than in Britain. Why were the causes of the 1839 crisis more

domestic than international?

When Indiana, Illinois, and Michigan authorized their internal improvement projects in 1836 and 1837, they were remote frontier states with small populations and little experience in national or international credit markets. After some difficulties in placing bond themselves, all three states were approached by investment banking houses, the most important of which was the Morris Canal and Banking Company of New Jersey. The investment banks offered to take large amounts of bonds from the states immediately on credit, in return for which the banks would repay the states in installments. The Morris Bank took \$3.5 million in Michigan bonds and \$3.8 million in Indiana bonds. In August 1839, the Morris Bank notified Indiana that it would not be able to fulfill its obligations to the state.¹⁵ Several other banks and individuals defaulted on credit sale contracts in 1839. The “suspended” debt was estimated at \$3,381,000; of which \$2,146,000 was for bonds issued to the Morris Canal and Banking Company.¹⁶ In the spring of 1840, the Morris Bank defaulted on its obligation to Michigan. Similar events occurred in Illinois in late 1839 and early 1840.

The immediate implication of the Morris Bank default on Indiana was an abrupt halt to construction on the state’s projected canals and railroads. Indiana had issued over \$3 million in bonds for which it had not yet been paid. The state was not prepared to go into the bond market and issue more bonds. By the fall of 1839 construction on most of the Indiana projects had come to a standstill. Land values began falling (Table 7, Panel B).

The effects of the Morris Bank default spread in a widening circle. The Morris Bank’s president was Edward Biddle, nephew of the Bank of the United States of Pennsylvania (BUSP) president Nicholas Biddle. The BUSP had purchased a quarter interest in the Morris Bank and, in a series of agreements, acquired a substantial number of Indiana, Michigan, and Illinois bonds. The BUSP was actively engaged in the market for state bonds throughout the United States. It had taken the entire \$5 million Mississippi bond issue in favor of the Union Bank of Mississippi in 1838. The BUSP had forwarded many of these bonds to London, where the BUSP’s agent Samuel Jaudon, attempted to place them with British investors.¹⁷ As land values began to fall in

the American West, the probability of default on western state bonds began to rise and western bond prices began to fall. The BUSP found itself in possession of large amounts of bonds whose values were falling. The value of BUSP assets declined relative to its liabilities in both Philadelphia and London.¹⁸

The third effect of the Morris default was to reduce land values in the south. Planters had purchased stock in southern land banks by giving mortgages on their lands, and the income of the banks depended on regular mortgage payments. Although stock was supposed to have been secured with mortgages on land double the value of the mortgage, in many cases land values had been overstated. As land values began to fall, stockholders increasingly chose to return their mortgages to the banks and default on their mortgage payments. Southern land banks came under increasing pressure and suspended interest payments on state bonds, which brought creditors to seek redress from state governments in Florida, Mississippi, Louisiana, and Arkansas. Taxpayers in these states had never expected to service any of these bonds. Therefore, the states defaulted on their obligations to bondholders, who were invited to seek recourse from the banks in the courts.

The final effect of the Morris default was to open discussion in western state legislatures about whether the bonds which states had issued but never been paid for (in the north) or the bonds which had been issued but which the states had never anticipated having to pay interest on (in the south) should be repudiated. As the crisis deepened the debates grew more heated and bond prices continued to fall in capital markets.

THREE CASES

We have argued that land, its value, and its taxation explain the behavior of states up to 1839. In this section we focus on three states, Pennsylvania, Mississippi, and Indiana and the regions they represent.

Pennsylvania:

Pennsylvania built the most ambitious transportation systems undertaken by any state, Pennsylvania borrowed more money than any other state, and its default was made infamous by

the Reverend Sydney Smith desire to “seize and divide” every Pennsylvanian he met for dinner.¹⁹ In 1835, the state debt was almost \$25 million, and gross annual canal tolls of \$684,357 fell far short of annual interest payments of \$1,169,455. (Hartz, 1948, p. 149). The state works were complete and it was apparent that canal profits would never cover even interest payments on the state’s bonds. Yet Pennsylvania continued to borrow, both to build canals and to finance current operating deficits. By the time Pennsylvania defaulted in 1842, the state debt was over \$36 million. Instead of continuing to rely on favorable capital market conditions, Pennsylvania should have stopped borrowing in 1835, raised taxes, and begun to pay off its bonds.

Two events helped Pennsylvania postpone the day of reckoning. First, in 1836, the state chartered the Bank of the United States of Pennsylvania and entered into a close financial relationship with the bank. The BUSP paid the state a charter bonus of \$2,000,000 and agreed to extend the state a line of credit worth over \$6,000,000.²⁰ Second, in 1837, the distribution of the federal surplus produced a \$2,900,000 windfall. The Bank bonus and the surplus distribution appeared temporarily to bring the state’s finances into balance in 1837 and 1838.

In 1839, the October suspension of the BUSP, growing interest payments, the onset of the business depression, and disappointing toll revenues on the State Works brought the state to the brink of default. Rather than raising taxes, Pennsylvania's borrowed almost \$4 million more in 1840. By 1841, the state was unable to sell any bonds at par (the governor was authorized to borrow up to \$3,100,000), and the failure of the Bank precluded additional loans from that source. Still, the state legislature refused to implement a realistic property tax that could have enabled the state to avoid default. In August, 1842, rather than paying interest due on its debt, the state issued to the debt holders “certificates of stock, bearing interest at five percent., for the amount of interest due, and payable on the first of August, 1843” (Worthington, p. 57). Pennsylvania was in default. Later in 1842, the state put a realistic 2 mil property tax in place, but it would be several years before the tax began to produce sufficient revenues to service Pennsylvania’s debts.

The Reverend Smith's flowery claims notwithstanding, Pennsylvania never considered repudiation and maintained from the very beginning that it would repay all of its debts.²¹ Pennsylvania resumed interest payments on February 1, 1845, refunding the state scrip into new bonds. The reason for Pennsylvania's default came down to a reluctance to impose a property tax. As an early analyst of Pennsylvania's default put it, "... if we feel called upon comment upon the crisis in state finance, which culminated in 1842, we must remember that it was brought about through ignorance, rather than deliberate dishonesty. Speculation and hatred of all forms of direct taxation were the causes of the downfall in Pennsylvania's credit" (Worthington, p. 38). Pennsylvania had not imposed a property tax since 1790s. The state put off a realistic property tax until the very last minute, and then it took time for the property tax to generate adequate revenues to service Pennsylvania's debts. Revenues in 1842 were only \$480,000, \$553,000 in 1843, and \$751,000 in 1844. When property tax revenues reached \$1,318,000 in 1845, Pennsylvania resumed servicing its debts, with back interest paid to all the bond holders. Had Pennsylvania's 2 mil tax raised \$1,000,000 in 1842, it would not have defaulted. Had Pennsylvania imposed a realistic property tax in 1836, when it was clear that the State Works would not produced the needed revenues, it certainly would not have defaulted.

The unwillingness to levy an adequate and effective property tax was the primary cause of the default in Maryland as well. Maryland established a property tax in 1842 and, as in Pennsylvania, the Maryland tax took several years to become fully operative. Maryland's default resulted from the decision not to impose the property tax soon enough.²²

New York began expanding its canal and railroad network in 1836, and borrowed over \$15,000,000 for such purposes between 1836 and 1841. Expansion of the New York canal system was not profitable and New York faced rising interest rates for its loans.²³ In March of 1842, New York passed a "Stop and Tax Law," which ended all new canal construction and reinstated the state property tax at a rate of 1 mil. By fiscal 1843, New York revenues from the property tax were \$514,000, and New York's potential default crisis passed.

Ohio also expanded its canal network in the 1830s.²⁴ Between 1838 and 1842, Ohio

spent over \$7,000,000 on canal construction, \$1,600,000 in 1841 alone. Ohio continued to expand its debt through the Panic of 1837, the Crisis of 1839, and the depression that followed. The canal board declared that all of the “new canals authorized in 1836 would indeed produce sufficient revenues to justify their construction. The board did qualify this view by stating that the new works would not produce revenues large enough to pay interest on the debt until ten years after their *completion*” (Scheiber, p. 168, emphasis added). Ohio did not expect that canal revenues would be available to service state debts in 1841 and 1842. Ohio continued to borrow through the early 1840s. In the worst years Ohio was forced to pay interest rates as high as 10 percent, but it was able to get new loans even at the height of the default crisis in 1842. Ohio steadily increased property tax rates from 2.35 mills in 1837, to 5 mills in 1843, and 8 mills in 1845 (Table 7, Panel D). Property tax revenues rose from \$201,629 in 1837 to \$642,154 in 1841.²⁵

Pennsylvania, Maryland, New York, and Ohio all raised property tax rates or instituted new property taxes in response to the crisis. In addition, Massachusetts, Georgia, and Alabama all re-instituted property taxes that had been discontinued in the 1820s or 1830s. The pattern of borrowing in these land-rich states was clear. Borrow, pay interest in the early years out of borrowed funds, and rely on property taxation in the future to service state bonds. Collectively these state cases belie Temin’s suggestion that credit markets dried up after 1839 and caused the state defaults. As Table 2 shows, Ohio, New York, and Pennsylvania continued to borrow substantial sums into 1841 and 1842, albeit at high interest rates. Credit markets for state debt did not dry up or collapse if a state did not default.

Mississippi:

Mississippi was the most notorious repudiator. Throughout 1820s there was only one bank in the state, the State Bank of Mississippi. It was succeeded in 1830 by the Planter’s Bank. The state issued bonds to purchase \$2,000,000 of the bank’s authorized capital of \$3,000,000. As stipulated in its charter, the Planter’s Bank paid interest on the state bonds out of the state’s dividends. The state chartered twenty four new banks between 1833 and 1836, most of them in

1836 and 1837.²⁶ The state did not acquire an interest in any of the new banks

Both the banks and the state were hit hard by the Panic of 1837. In the midst of the turmoil, Mississippi considered plans for yet another land bank, the Union Bank, to be capitalized at \$15,500,000 financed by state bonds. The state constitution required that any law authorizing debt be passed at two consecutive sessions of the legislature. The original bill passed on January 21, 1837, and again on February 5, 1838.²⁷ The bill was then amended on February 15, 1838. The amended bill reduced the total state investment from \$15,500,000 to \$5,000,000, and stipulated that “Said [state] bonds shall not be sold under their par value.” The act also reduced the amount that shareholders had to pay when they subscribed for their stock from \$10 (10 percent of the \$100 share value) to \$2.50. The amended bill passed the legislature only once, not twice, a violation of the constitutional provision. The state made over the bonds to the bank, which approached Nicholas Biddle, and on August 18, 1838 the whole lot was sold to the BUSP.

The contract reached with Biddle put the bonds further at risk. By selling bonds on credit the state clearly did not receive par value, since interest began accruing from the August 18, and the state did not receive payment until up to a year later. The sterling payment feature, moreover, required the Union Bank to repay \$2,189.92 in principle for every \$2,000 it received.²⁸

Biddle was under the impression that the Union Bank would use its resources “for the purpose of bringing back the state to a sound condition of currency.”²⁹ Instead of relieving the situation of Mississippi banks, however, the Union Bank borrowed even more money. In 1839, the Union Bank refused to provide details about its financial condition to the state, a violation of its charter and Mississippi law. In July of 1840, Governor McNutt proclaimed that the Union Bank had forfeited all of its banking powers and privileges because of its failure to pay specie, a proclamation the Bank refused to acknowledge.³⁰ In December 1840, the Bank provided information to the state indicating that it possessed \$7,768,433.73 in assets, of which only \$2,500,000 were providing any income to the bank. At that point the Bank had only \$19,500 in demand notes in circulation and held mortgages of only \$735,986.³¹ Instead of acquiring \$5,000,000 in mortgages to secure the state bonds, the Union Bank directors had spent

\$7,600,000 dollars of borrowed funds (state bonds and post notes) with only \$2,500,000 to show for it, and held almost no mortgages as security.

The Union Bank had been in operation for less than three years when it failed to meet the interest payment on the state bonds in 1841. The state formally repudiated the bonds on February 26, 1842. The reasons given by the state for repudiating were technicalities: the legislation had not been passed in a constitutional manner, the bonds were sold under a credit arrangement below par, and the final terms for paying interest in Britain in specie further violated the par sales provision.³² The real battle was not over technicalities; it began when the Union Bank refused to provide accurate information to the state. In January 1840, Mississippi Governor McNutt stated, “The fact that the [bank] managers have smothered the important facts called for, proves that culpable mismanagement and selfish favoritism have characterized their operations.”³³ In fact, the managers and directors of the Union Bank did steal from the state. They had managed to turn \$7,500,000 into \$2,500,000 in just two years. The popular perception in Mississippi was that the state and its people had been robbed. Default and repudiation in Mississippi were not caused by a lack of financial resources. In 1845, Mississippi collected enough in property tax revenues easily to service the Union Bank bonds.³⁴

Similar events occurred in Florida, Arkansas, and Louisiana. Political pressure to repudiate were greater in the South and resulted from three features of the land banks as internal improvement investments. First, unlike canals and railroads that benefitted all the land owners along their routes, the benefits of land banks were highly concentrated in the hands of the few wealthy individuals who held stock in the banks: “What right had a few hundred stockholders to make the whole people ... and their posterity... groan under a load of debt for these institutions.” These banks clearly served the interests of elites, and popular sympathies were not on the side of the bankers and stockholders.³⁵ Second, because the states purchased their stock with bonds given to the banks, the banks actually marketed the bonds. State restrictions on bond sales, the requirement that bonds be sold at par or better, for example, were often not honored by the banks. This provided the legal pretext for subsequent repudiation. Third, the banks had strong

incentives to overvalue lands. Directors represented stockholders, whose ability to purchase stock and get additional loans depended on the appraised value of their lands. When land values fell after 1839, many stockholders found that the face value of their mortgages were greater than the current market value of their lands. So they defaulted on their mortgages.³⁶ The banks were then unable to make interest payments and the bondholders turned to the states for payments. Overvaluation of stockholders' land also contributed to the popular perception that banks and bankers were corrupt.

Indiana:

Indiana, Illinois, and Michigan make the strongest case for incompetence and naivete on the part of state governments. In 1836, Indiana had a population of 600,000, tax revenues of roughly \$50,000 per year, and the legislature authorized the issue of \$10,000,000 in five percent bonds to build three canals, a railroad, and begin surveys on other projects. Illinois authorized \$10,250,000 in 1837 with a population of 400,000, and Michigan \$5,000,000 in 1837 with a population of only 200,000.³⁷ All three states started multiple projects simultaneously and appointed unqualified politicians to supervise construction. All three states sold bonds on credit to eastern investment banks which then defaulted on their obligations to the states in 1839. When the banks defaulted, construction on canals and railroads had been underway for less than two years, on projects that were anticipated to take seven or more years to complete. By 1840, construction had largely stopped. In each state, subsequent investigations brought instances of financial impropriety to light.

Did these states default because over-optimistic expectations could never be met, because state officials were incompetent, or because the investment banks with which the states dealt were corrupt? Indiana provides the best opportunity to answer these questions because of the wealth of information in the state records. Indiana was no newcomer to internal improvement when construction began on the "Mammoth" system in 1836. In combination with the federal government, the state began construction on the Wabash and Erie canal in 1832 and had issued \$500,000 in bonds by 1835.³⁸ Indiana chartered a State Bank, in which it invested \$1,390,000

between 1834 and 1836. On January 27, 1836, the Indiana legislature passed the “Mammoth Bill,” authorizing the Canal Board to borrow up to \$10,000,000 to construct two new canals, extend the Wabash and Erie Canal, construct one new railroad, survey three routes and begin construction on roads, railroads or canals along them, and clear obstructions in the Wabash river.³⁹ The state also changed its property tax structure in 1836, moving from a flat per acre tax on land to an *ad valorem* tax on all wealth. The *ad valorem* taxed was designed explicitly to capture the increase in land values along the planned canal routes, and it worked as planned. Between 1835 and 1837, land values throughout the state rose from \$5.41 to \$9.87 an acre, an increase of \$4.46; land values in canal counties rose by \$4.55 an acre and in non-canal counties by only \$2.74 an acre.⁴⁰

Borrowing and construction got underway in 1837. By early 1839, there were 491 miles of works finished or under contract.⁴¹ The State had received \$5,550,000 in cash for bonds issued on behalf of the Internal Improvement Fund and \$1,500,000 for the State Bank, while the total amount of bonds outstanding was over \$10,000,000. The \$3,000,000 gap represented bonds sold on credit to various investment banks. Then in August of 1839 the Morris Bank defaulted on its obligations to Indiana.

By the fall of 1839 construction throughout the state had stopped, land values began falling, the suspended debt raised questions about the state’s willingness to service bonds for which it had never been paid, and discussion of possible repudiation sent troubling signals to the credit markets. In 1840, the state issued \$1,500,000 in state notes. Property taxes had been rising since 1836, and in a last ditch effort to avoid default, Indiana raised the 1841 property tax rate to 4 mils. The state defaulted on its interest payments in July of 1841. Had Indiana stopped borrowing in July of 1839 and repudiated (or segregated) the suspended debt, the regular state debt would have been about \$7,000,000. Indiana would have been better off if it had defaulted immediately in 1839, but the state put off default until 1841 because state officials expected (or hoped) that new taxable acreage would come onto the tax rolls in 1841 and 1842 and provide enough in property taxes to save the credit of the state.⁴²

Could Indiana have paid its debts in 1841 even if the bankers had not defaulted?

Fortunately, we can see how Indiana planned to service its canal debts. In 1836, the Indiana Board of Internal Improvement reported estimates of anticipated annual interest payments, toll revenues, investment revenues, and property tax revenues available to the finance construction. These figures were only for internal improvements, over and above expenditures and revenues for ordinary activity, and do not include the Bank debt.⁴³ Column (1) of Table 9 breaks down the Board's estimates for 1842. The Board anticipated that debts would reach \$8,000,000 and that interest payments would total \$420,000. The Board assumed that tolls would not begin until 1840 and reach just \$120,000 in 1842. The report clearly indicates that the state did not expect the canals to be self-supporting in 1841. Line (4) gives anticipated revenues from investment of the federal surplus revenues in the stock of the State Bank of Indiana, at an 8 percent return.⁴⁴ Line (5) gives anticipated property tax revenues, based on projected assessed value, line (7), and tax rates, item 12. Line (6) gives the amount of excess or deficit in the canal fund. The report clearly envisioned that property taxes would be an important source of revenue.

The report assumed that property values would grow at ten per cent per year. The Board projected a total value of assessed property in the state of \$138,181,758 for 1842 (line (7), column (1)). This is an underestimate of the property tax base in 1842, since the Board knew in 1836 that the number of acres of land subject to taxation would at least double between 1836 and 1842.⁴⁵ On the other hand, the Board made over optimistic assumptions about canal tolls and interest income. What the Board did not expect to happen was a dramatic decline in the value of land. Assessed value per acre of land was \$8.23 in the 1837 tax year.⁴⁶ By 1842, value per acre of land had fallen to \$3.73 per acre. Column (2) gives the actual debt, interest payments, land values, property tax rates and property tax revenues that the state realized in 1842. The state could not make its interest payments and defaulted.

The fall in land values caught Indiana unprepared. If land values had stayed near their 1837 peak, the state would not have defaulted. A simple counterfactual, assuming that average land values maintained a level of \$7.05 an acre from 1837 to 1842, shows this in column (3).⁴⁷

We assume that the total debt was \$10,000,000, interest payments were \$500,000 a year, property tax rates were 4 mils, and land was valued at \$7.05 an acre.⁴⁸ We assume that personal wealth would have remain unchanged, line (9). Summing projected land value and personal wealth gives line (7), and when multiplied by .004 gives the projected property tax revenues shown in line (5). At those rates and values, the state would have been able to service the debt and cover normal operating expenses out of property tax revenues in 1842. The counter-factual is clear: Indiana defaulted in 1841 because land values declined.

CONCLUSIONS

The 1840s default crisis has rarely been a subject of study in its own right and no one has really asked how the states got into their predicaments in the first place. Since the cures that American states adopted in their new constitutions written in the 1840s were intended to prevent a repetition of the events that led to the crisis, understanding the origins of the crisis is quite important, particularly because the institutional changes made by American states in the 1840s have worked reasonably well.⁴⁹ We stress the central role played by land, both as a raw natural resource whose development was the central purpose of most of the state borrowing and as a fiscal base which states could draw on in need. Focusing on land illuminates three issues that the existing literature has overlooked, misinterpreted, or misunderstood.

First is the timing of borrowing. The heaviest years of state borrowing came after the Panic of 1837, not before. Federal land policy, specifically the five-year moratorium on state taxation of public land sold to private individuals, is the key to understanding the timing of the investment boom in 1838 and 1839. During 1835 to 1837, States in the west saw millions of acres sold to private individuals that they knew they could tax in 1840, 1841, and 1842. Not unreasonably, the states chose to borrow against those future revenues. The collapse of the land boom after 1839 was reflected in both declining federal land sales and in a reduction in the assessed value of private lands.

Second is the expectations of borrowers and lenders. States did not default because they expected revenues from their canal and railroad investments to service bond interest in 1841 and

1842. Again, this is an issue about timing. As we show conclusively for Indiana that states did not expect to rely on canal tolls to service bonds. Pennsylvania did not default in 1835 when it became clear that the tolls on the State Works would not cover interest payments. Pennsylvania defaulted seven years later, after the state had borrowed millions more, because Pennsylvania was slow to implement a viable property tax. States expected property taxes to be available to repay loans if necessary. Borrowers shared these expectations.

Third is the reason the crisis began. The default crisis was not caused by the Panic of 1837 or a tightening in international credit markets. If anything, tightening in credit markets in 1839 was the result of impending defaults in Indiana, Michigan, and Illinois. Once construction on northwestern canals and railroads came to a standstill, property values started falling. As land values fell, southern land banks found their assets declining in value and saw their stockholders defaulting on the mortgages secured by land. The crisis in American state bonds in 1839 began in the United States, not in Britain. American investors understood what the Morris Bank defaults meant for Indiana and they discounted the price of Indiana bonds appropriately. This was not a crisis caused in Britain and transmitted to the United States. It is more properly viewed as a U.S. crisis transmitted to British financial markets.

The larger issue, however, revolves around the centrality of land in the early 19th century American economy. In modern parlance, this was an emerging-market economy rich in natural resources, the most important of which was land. Land ownership was widely spread throughout the population, and the nascent American democracies gave voice to a demand for government policies that raised the value of land. Raising land values required investment in transportation and financial infrastructure, the pattern varying by geographic region. Private enterprise proved incapable of carrying out the investments. The federal government proved politically incapable of carrying out the investments.⁵⁰ The states stepped in from the very beginning of the 1790s, making a long and generally successful series of investments in banks, bridges, roads, canals, and ultimately railroads.

Mistakes, however, were made. The land boom of the mid-1830s dramatically increased

the fiscal capacity of states throughout the country. The ensuing investment boom was not driven by changed expectations about the profitability of canal investments. The combination of rising land values and increasing taxable acreage made it apparent both to borrowers and lenders that states could support borrowing on a much larger scale, even if the projects they borrowed for turned out not to be sustainable from project revenues alone. A modern sophisticated capital market would have willingly lent to American states in the 1830s. There was nothing naive or misconceived about their fiscal prospects.

Indeed, there was nothing wrong with the economics of the decisions made by states when they borrowed in the 1820s and 1830s or in the decisions made by their creditors when they lent. *Ex post*, lending to entities with sovereign immunity turned out to be as risky in the United States as it had been in Europe for generations. But it was risky for a new reason: politics. Southern states repudiated their debts because of the political ramifications of imposing higher taxes on all taxpayers to the benefit of a small number of wealthy bank stockholders. Northern states, with the exception of Michigan's repudiation of the bonds for which it had never been paid, either repaid in full or worked out compromise solutions with their bondholders.

When the states began writing new constitutions after 1842, they were concerned with political, not economic problems. They took care to implement the lessons they learned from the boom and bust cycle. The new constitutional provisions required that a prospective bond issue be approved by the legislature, and then that a tax increase sufficient to cover annual debt service on the bonds be approved by a majority of the voters before any bonds could be issued. Procedural debt restrictions did not limit the amount of debt a state could issue. Rather, by addressing the timing issue, the debt restrictions fundamentally changed the political calculus of infrastructure investment by requiring a majority of voters to move tax increases forward in time.

This political change created not only what the modern public finance literature would call a hard budget constraint, but eliminated the timing problems that plagued Pennsylvania and Maryland. It made it impossible for project promoters to promise the provision of valuable infrastructure at no cost to taxpayers. Voters now had to approve a contemporary tax increase

before the state started construction. Voters had to vote with their wallets today if they wanted canals tomorrow. As Judge Kilgore said at the Indiana constitutional convention of 1851,

“Right here, sir, and nowhere’s else, was the great error committed by the people and their representatives in 1836. Gentlemen may confine themselves to the simple assertion that the people of that day were mad; I shall not deny it; they were mad, and very mad; but, Mr. President, had a provision been made before the public debt was created that a direct tax must be levied, high enough to pay the interest and to wipe out the whole debt in eighteen or twenty-five years, all would have been comparatively well. A provision of this kind, sir, would have brought the people to their right senses, and my word for it, before State Bonds to the amount of four millions of dollars had been sold, they would have risen and denounced the whole system as projected.”⁵¹

Kilgore turned out to be wrong that future voters would denounce the system of publicly funded internal improvements, but he was right about one thing. Americans learned enough from their experiences in the 1830s and 1840s to craft a constitutional structure of government that allowed them to tap into the capitalized value of their own natural and human resources, and to make investments that increased the value of those same resources. That is the lesson that American and the wider world should draw from the default crisis of 1841 and 1842.

¹See McGrane *Foreign Bondholders* and Ratchford *American State Debts*. The most thorough modern economic analysis of the debt crisis is William English, “Sovereign Default.”

²For the argument and evidence see Kim and Wallis “The Market for State Bonds.”

³House Report, 296, 27th Congress, 3d session “Relief of the States -- Public Lands.” The Johnson report figures were repeated in the Census of 1880, and those figures were repeated by Ratchford, *State Debts*. Note that our figures are different than the figures reported in English, “Sovereign Default.” We transcribe the annual numbers and the total amount from the column “Amount outstanding and unredeemed September 2, 1841.” English makes adjustments to these figures based on the notes in the report. So, for example, we report \$2,676,000 for Arkansas and English reports \$3,176,000 for Arkansas. The \$500,000 difference results, apparently, from English including the \$500,000 of Western Bank bonds as yet unsold. Since it isn’t clear that those bonds were ever sold, we have not included them in the state debts. Other differences are similar in nature. We report the numbers on debt outstanding actually reported by the Johnson Report with two exceptions. In Virginia, the report included as “outstanding” debts debts which the report itself noted had not been issued. In Ohio, the detailed report totals \$10,924,000, while a note with the initials W.C.J. (which we assume was William Cost Johnson) states “The debt of Ohio is about \$20,000,000.” For Ohio, we use English’s total of \$15,083,000 in the table. Any one who wants to use these figures should closely examine the sources. We have not strained to make detailed distinctions, because our argument in this paper is unaffected by small differences in the debt totals.

⁴ “In any case, the transportation investments of many northern states were not yet complete, and additional credit was not available. Since incomplete projects generated little revenue, the bonds for their construction became a burden for the states.” English, “Understanding the Costs,” p. 262. “By 1841, all of the defaulting states had borrowed heavily to finance internal investments in transportation or banking. They had expected these investments to provide substantial revenues in the form of tolls and dividends and, when the investments did not, they found themselves in financial difficulties.” Sylla and Wallis, “Sovereign Debt,” pp. 269-70. We now regard this as too simplistic, and we present this paper as partial atonement for our earlier sins. Also see Jenks, *Migration of British Capital*, p. 102.

⁵Logan Esarey in *Internal Improvements in Indiana* and in his *History of Indiana* hammers the state for its financial profligacy and fiscal insanity in 1836. Donald Carmony, a student of Esarey’s, continued the tradition in his *Indiana, 1816-1850*.

⁶ Ohio Enabling Act, as reported in Thorpe *Federal and State Constitutions*, p. 2289. Enabling Acts for Indiana, Illinois, Alabama, Louisiana, and Mississippi with similar provisions can also be found in Thorpe.

⁷Land values in Indiana are taken the *Annual Report of the Auditor of State*, Indiana, various years. See Wallis, “Property Tax,” for a discussion of Indiana land. Unfortunately, we do not have reliable series on market prices of land for any state.

⁸ See, for example, the comments of Representative Ripley alleged that “It was represented to the

people of that day [1836], by the political leaders, that they might go on with that gigantic system of internal improvements without incurring any additional tax on themselves.” *Indiana Constitutional Debates*, p. 663. Ripley apparently forgot that Indiana raised taxes when the canal bill was passed. See Wallis, “Property Tax.”

⁹ Alexander Hamilton enunciated the principle that whenever public debt was incurred, it ought at the same time to be accompanied by tax increases sufficient to pay the interest on it and an overage to finance its ultimate retirement. The principle is often ignored, but New York took it seriously. Of the original \$7 million in canal debt issued between 1817 and 1825, only \$1.25 million was still outstanding in 1841 (see Table 2). For Hamilton’s statements, see *The Papers of Alexander Hamilton*, Harold Syrett, ed. (New York: Columbia University Press, 1961).

¹⁰ Both New York and Massachusetts suspended their state property taxes in the 1820s. Neither Pennsylvania nor Maryland had had a state property tax since the 1790s. Not coincidentally, in both Pennsylvania and Maryland the failure of canal revenues to materialize provided the historical base for the idea that default followed the failure of their canal projects. In fact, both states defaulted because of delays in implementing their property taxes, as discussed later.

¹¹ For a detailed description of land banks see Sparks, *Agricultural Credit*, pp. 83-113.

¹² For example, section 7 of the Mississippi charter of the Union Bank required that “Both the capital and interest of the said bonds shall be paid by said bank, at the times they shall severally fall due.” *Laws of Mississippi*, Adjourned Session, 1837, January 21, 1837. Similar arrangements are described in the charter of the Bank of Louisiana, *Laws of Louisiana*, 6th Legislature, 2nd Session, April 10, 1824, “An Act to incorporate the subscribers to the Bank of Louisiana,” sections 7 and 8, pp. 100-102.

¹³ Hidy, *House of Baring*, p. 110.

¹⁴ Temin explicitly blames the failure of the states on reductions in the “new inflow of capital” *Jacksonian Economy*, p. 153. Also see Jenks, *Migration*, p. 102.

¹⁵ For the date Indiana was notified by the Bank, see Milton Stapp to Noah Noble, August 6, 1839, Riker, *Wallace Papers*, p. 260. The Morris Canal and Banking Company was intended to be a canal company, supplemented by banking privileges. Construction of the canal was financed with borrowed funds secured by a mortgage held by Dutch bankers. In the early 1830s, Company was in financial difficulties and, as a result, asked the state to expand its banking privileges. The Company then engaged in speculative investment banking. One scheme was taking the Indiana bonds on credit and transferring the bonds Company’s Dutch creditors to repay the mortgage. The solution was a short-term one. The Company major creditor was now the state of Indiana, rather than the Dutch investors. In 1839, the Company’s schemes collapsed. We reconstructed the history from the Minutes of the Morris Canal and Banking Company Directors Meetings, held at the New Jersey archives.

¹⁶ Figures taken from Governor Bigger’s address to the legislature on Dec. 7, 1841, *Indiana House Journal, 1841/42* pp. 16-17.

¹⁷ Smith, *Second Bank*, p. 199. The BUSP listed \$5 million state bonds among its assets on April 1, 1839 and \$20 million in state bonds on March 1, 1841 just before the bank closed forever. Figures taken from Congressional Report 226, 29th Congress, 1st Session, Appendix E, p. 442.

¹⁸ See Kim and Wallis, “The Market for State Bonds” for an analysis of bond price movements over time and in London and the United States.

¹⁹ “... I never meet a Pennsylvanian at a London dinner without feeling a disposition to seize and divide him; to allot his beaver to one sufferer and his coat to another; to appropriate his pocket handkerchief to the orphan and to comfort the widow with his silver watch, Broadway rings and the London guide which he always carries in his pocket. How such a man can set himself down at an English table without feeling that he owes two or three pounds to every man in the company, I am at a loss to concede; he has no more right to eat with honest men than a leper has to eat with clean men....” As quoted in McGrane, p. 59. The original letter appeared in the *London Morning Chronicle* but McGrane cites the quotation of the original in the *London Times*, Nov. 4, 1843.

²⁰ Smith, *Second Bank*, p. 179.

²¹ This is not to say that repudiation was not discussed, see McGrane, pp. 69-70, but the legislature firmly denied any intention to repudiate and began addressing the problem of finding new revenue sources.

²² As Table 7, panel A shows, property tax revenues rose from \$254,353 in 1842 to \$771,311 in 1847. The tax rate during that entire period was 2 mils. So the entire increase resulted from more effective administration of the tax. While Maryland did not formally “resume” interest until 1848, by 1845 the state was paying all of its current interest as well as some of its arrears, Hanna provides details on page 124. The “Arrears of Interest at Close of Year” were 1842, \$859,656; 1843, \$1,171,873; 1844, \$1,450,962; 1845, \$1,376,891; 1846, \$1,300,023; 1847, \$949,000; and 1848, \$854,003. “Full resumption of interest payment could probably have been effected as early as 1846; but the Legislature waited until the success of resumption was assured beyond all risk of a second suspension before authorizing this step.”

²³ Kim and Wallis, “The Market for American State Bonds.”

²⁴ This section is based on Scheiber, *Ohio Canal Era*.

²⁵ Nominal tax rates were high in Ohio because of low assessment rates. Once a property was put on the tax rolls, it typically was not reassessed, so assessed values lagged far behind true values. When a reassessment was finally undertaken in 1847, total assessed value rose from \$150 million to \$450 million and the state was able to reduce tax rates fell from 8 mills to 2.75 mills, without reducing revenues.

²⁶ See Schweikart, *Banking in the American South*, pp. 178-182 and Fenstermaker, *American Commercial Banking*, table A-17. Nine of the banks chartered were also railroad companies.

²⁷ The original bill can be found on pp. 34-57 of *Laws of Mississippi*, 1837 and again on pp. 9-33

of *Laws of Mississippi*, 1838. The amendments to the 1838 bill can be found on pp. 33-45.

²⁸The sterling price used in the agreement was the official exchange rate, not the prevailing market exchange rate, which was 9 percent higher than the official rate.

²⁹Nicholas Biddle to Samuel Jaudon, October 2, 1838, p. 514. Letterbooks, Nicholas Biddle Papers, Library of Congress, as quoted in Kilbourne, *Bank of the United States*, p. 132.

³⁰*Mississippi House Journal*, pp. 84-85.

³¹The figures are taken from *Mississippi House Journal*, 1841, pp. 82-3.

³²See, in particular, the detailed arguments laid out by Governor McNutt in his veto message of a bill acknowledging that Mississippi should honor the Union Bank and the Planters Bank bonds, *Mississippi House Journal*, 1841, p. 491, February 4, 1841.

³³See McNutt's message to the Legislature January 7, 1840, *Mississippi House Journal*, p. 50.

³⁴In the early 1830s, Mississippi never reassessed property, nor did it appear to add new property to the tax rolls: the assessed value of land was \$4,775,584 in 1830 and only \$5,013,553 in 1837. In the early 1840s Mississippi overhauled its property tax. Assessed land values rose to \$54,060,330 in 1845. Property tax revenues rose from \$95,555 in 1836 to \$268,573 in 1841 to \$413,777 in 1845. Interest payments on the Union Bank bonds were \$250,000 per year.

³⁵The quote is from the Florida Territorial Governor's address to the legislature recommending repudiation, *Florida Senate Journal*, 1841, pp. 12, 13, and 17 as quoted in McGrane, *Foreign Bondholders*, p. 238. For Arkansas see Worley "Real Estate Bank." In the wake of the default in Arkansas, the *Arkansas State Gazette* commented: "We believe that the people of Arkansas would stand direct taxation for *State purposes* as cheerfully as any people in the Union; but that we should be taxed to pay the debts of the most *aristocratic* monopoly of land holders in the United States is unbearable." February 17, 1841, as quoted, with emphasis, in Worley, p. 423.

³⁶The apocryphal quote comes from a letter to Van Buren from Claiborne, dated April 10, 1837, which McGrane summarizes "Mississippi was already engulfed in the throes of the panic of 1837; estates formerly valued at \$30,000 were selling for \$3,200; whole plantations were falling under the sheriff's hammer." McGrane, *Foreign Bondholders*, p. 195. In Arkansas, the Real Estate Bank foreclosed on mortgages for land appraised in 1837 at \$856,335, which later sold for only \$80,235. Worley, "Real Estate Bank," p. 406.

³⁷Indiana authorized its bond issue on January 27, 1836; Illinois on February 23, 1837 (and again on February 2, 1840); and Michigan on November 15, 1837.

³⁸The first bonds were sold on credit to J.D. Beers and Company. Fatout, *Indiana Canals*, p. 56. The Indiana history can be found in Fatout, Esarey *History of Indiana*, Esarey, *Internal Improvements in Indiana*, Carmony, *Indiana History*, and Wallis "Property Tax."

³⁹See Fatout, *Indiana Canals*, p. 73. By 1839 the state was engaged in work on six canals, one railroad, three roads, and the works on the Wabash river. "Auditor's Report," *Indiana Senate*

Documents, 1840/41, following page 20.

⁴⁰Land values by county are discussed in detail in Wallis “Property Tax.” The \$4.46 statewide increase compares taxable value by acre in the entire state in 1835 and 1837. The canal and non-canal county comparisons match counties for which there is data in both 1835 and 1837. If the statewide sample is limited to those counties, land values increased by \$3.90 an acre statewide. Land values are taken from individual years of the *Indiana Report of the Auditor of the State*.

⁴¹Fatout, *Indiana Canals*, p. 93.

⁴²In his message to the legislature on December 8, 1840, when default was imminent, Governor David Wallace urged the legislature to raise property taxes to 4 mills and institute more vigorous assessment procedures, noting that: “A thorough revision of the Revenue Laws, is the only effective remedy that I can suggest against the recurrence of similar evils; and when you are advised that in 1841, 13,758,236 acres; in 1842, 15,008,254 acres, and in 1843, 15,610,479 acres become subject to taxation, the necessity for the searching exercise of your supervisory powers over the subject needs not to be enforced.” Riker, *Wallace Papers*, p. 460.

⁴³The report appears in the *Indiana House Journal* for 1836/37, on pages 329 - 337.

⁴⁴The math on this item is incorrect. Even at an 8 percent return, the state would have to invest \$1,568,525 to generate an annual return of \$125,482. The state received only \$860,254.44, Bourne, *Surplus Revenue*, p. 61. Even if the fourth installment had been paid, Indiana would not have received enough to generate the expected revenue. Fatout, *Indiana Canals*, notes the discrepancy.

⁴⁵Taxable acreage almost tripled between 1835 and 1843, Table 7. There is no way to infer the implicit value per acre used by the Board.

⁴⁶Assessed value of land in 1837 was \$9.87 per acre, but the figures reported in 1837 include the value of buildings. The \$3.73 figure for 1842 excluded the value of buildings. In 1842 buildings were worth \$1.64 an acre, which we used to estimate the value of land reported in the text for 1837.

⁴⁷The \$7.05 per acre figure used in the counterfactual was not the highest land value in the period. It is well below the \$8.23 an acre reported in 1837. \$7.05 an acre was the figure cited by the Governor in December of 1840 when he advocated increasing the property tax rate to 4 mills. The message can be found in *Indiana Documents, 1840/41*, pp. 103-115. The \$7.05 figure is given on page 106. The state Auditor noted: “Had lands borne the same value that they did in 1839, the valuation would have been this year on the 10,187,764 acres, at \$8.80 per acre, (the average for 1839) \$89,652,323. By deducting the present [1841] value, \$63,120,309 Shows the amount lost by decrease since 1839, \$26,532,014.”

⁴⁸ The total state debt in 1841 was \$12,751,000. This amount included the bonds issued to the State Bank, which the state would eventually redeem by swapping its stock in the bank for the bonds, and the \$1,500,000 in short term debts issued after 1839 in an attempt to stave off default.

The \$10,000,000 figure is appropriate for evaluating the internal improvement debt.

⁴⁹See Wallis “Constitutions, Corporations, and Corruption” for study of state constitutional changes with regard to debt restriction, general incorporation, and tax reform in the 1840s.

⁵⁰The classic treatment is Goodrich, *Government Promotion*, which has been supplemented on the political side by Larson, *Internal Improvements*. For the failure of the national government to make infrastructure investments see Wallis and Weingast, “Equilibrium Impotence.”

⁵¹*Indiana Constitutional Debates, 1850*, p. 676.