Sovereign Default and Repudiation:
The Emerging-Market Debt Crisis in U.S. States, 1839-1843

Abstract: In 1841 and 1842, eight states and the Territory of Florida defaulted on their sovereign debts. Traditional histories of the default crisis have stressed the causal role of the depression that began with the Panic of 1837, unexpected revenue shortfalls from canal and bank investments as a result of the depression, and an unwillingness of states to raise tax rates. This paper shows that none of these stylized facts fits the experience of states at all well. The majority of state debts in default in 1842 were contracted after the Panic of 1837; most states did not expect canal investments to return substantial revenues by 1841 and so could not experience unexpected shortfalls in those revenues; and, finally, most states were willing to raise tax rates substantially. The relationship between land sales and land values explains much of the timing of state borrowing and the default experience of western and southern states. Pennsylvania and Maryland defaulted because they postponed the imposition of a state property until it was too late.

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The oft-called "era of internal improvement" in the United States took place in the quarter century after 1815. During the period, U.S. states borrowed more than $200 million by selling long-term bonds in domestic and international financial markets to finance transportation and banking projects. Total borrowing by the states approached a level nearly twice as high as the debt of the federal government at its peak in the half-century between1790-1840. The federal debt represented mostly the costs of the War of Independence and the War of 1812. Each of these wars ran up a debt of less than half what the states borrowed for peaceful investment purposes during the improvement era. In 1841, state debts outstanding totaled $198 million.

Then the improvement era came to a screeching halt. In 1841 and 1842, eight states and the territory of Florida defaulted on their debts. Three other states narrowly avoided default. Five of the nine defaulting states repudiated all or part of their debts. The credit of the U.S. federal government, which never defaulted after the debt restructuring of 1790, was tarnished. The credit of all U.S. states, not just defaulting states, was deeply impaired.

International capital markets were relatively new institutions in the early nineteenth century. The United States was a new country on the international scene. Half of the U.S. states, including all but two of the defaulters, were even newer than the country. For all of these reasons, it seems appropriate to describe the events of the early 1840s as an emerging-markets debt crisis. Although "emerging markets" is a term of relatively recent vintage, there are parallels of the events of the early 1840s and the LDC debt crises of the 1980s, the Mexican, Asian, Russian-LTCM, and Brazilian crises of the 1990s, and the Argentine crisis of the early 2000s.

Our objectives in revisiting the state debt crisis of the early 1840s are several. One is to advance our understanding of the crisis as history by emphasizing some features of it that previous accounts have missed. Previous discussions seldom note, much less explain, why more than half of the state debts outstanding in 1841 was incurred *after* the financial panic of 1837.

The panic is often—but wrongly—regarded as marking the beginning of the end of the improvement era.

Another objective is to show that earlier general explanations of the crisis—such as that the borrowing states were naïve and incompetent, or that they were victims of corruption and crony capitalism, or that they were unlucky and victimized by larger forces beyond their control—simply do not work as *general* explanations of the crisis. In demonstrating this, we do not argue that each state default was unique. Instead, we show that there were three different patterns to the defaults, corresponding to different regions of the country with economies at different stages of economic development. This, we think, is an important point, for it implies that the United States in the nineteenth century was not just a country like other countries. It was more akin to the empires of that era with distinct economies reflecting geographical and climatic differences, and also differences related to whether a component state had long been settled and possessed established institutions or was one of recent settlement and newly developing institutions.

A final objective of the essay is to draw parallels with the emerging-markets debt crises of our own time. One lesson of the 1840s crisis is that emerging-market debt defaults and repudiations need not be unavoidable or inevitable consequences of international capital markets. Only 9 of 28 U.S. states and territories defaulted in the crisis of the early 1840s. Twelve of the 19 that did not default had debts and might have defaulted. In revisiting the crisis, we show that states made choices at all stages of the improvement-era episode, and that some of those choices led to default while others did not. No default was inevitable, but we show that some of them were more avoidable than others.

In Section I, we show which states defaulted, which did not, and suggest a simple reason for the dichotomy. We review general explanations of the debt crisis and their deficiencies. Section II discusses the interesting timing and regional patterns of debt incurrence, the purposes for which debts were incurred, and the different methods that were adopted for servicing debts. Section III relates the temporal pattern of state borrowing to a general underlying factor, rising land values and the land-sales boom of the 1830s. A specific feature of the process by which U.S. public lands were transformed into private property explains why so many states borrowed so much after 1836. Section IV addresses the question of why some defaulting states—

Arkansas, Florida, Louisiana, Michigan, and Mississippi—repudiated their debts, in part or in whole. In every case repudiation was connected to state borrowing for bank investments. But Alabama, which also had banking problems, did not default. Section V discusses why, in the Northwest, Illinois, Indiana, and Michigan defaulted, but Ohio did not. Similarly, section VI considers why, in the commercial-industrial Northeast, Maryland and Pennsylvania defaulted, but Massachusetts and New York did not. Section VII summarizes the lessons we draw from the debt crisis.

I

Why did some indebted states default while others did not? A simple explanation jumps out of Table 1, which reports total and per capita state debts in 1841, whether a particular state defaulted, and whether it repudiated. Table 2 gives the dates of defaults, repudiations, and resumptions. Nine of the ten states with the highest per capita debts defaulted. Although three states with large total debts (more than $10 million) and per capita debts above the median ($6.45) did not default, the most obvious question to ask is, why did some states borrow so much? It is a question that previous students of the debt crisis have not asked. We study the timing and regional patterns of borrowing in Section II, and answer the question in Section III. (For the most part, we ignore the states in Table 1 that were at or below the median of per capita debt since none defaulted.) As did Callender, we divide the states into three regions: Northeast, Northwest, and South.

Instead of asking why some states borrowed so much, politicians at the time focused on the debt crisis itself and asked how states could have gotten into such an embarrassing mess. Typically, the answers fell into two categories: "incompetence" and "corruption." The incompetence theme stressed that voters and state legislatures were naïve, poorly informed, and too optimistic when, observing both New York's amazing success with the Erie Canal and the energizing economic and fiscal effects of state-chartered banks in the Northeast, they authorized large amounts of borrowing for transportation and banking projects that were expected to pay for themselves.

The corruption theme stressed that states were defrauded when politicians and promoters lied about the costs and returns of improvement projects, when corrupt politicians ignored lending restrictions and misallocated state funds, when promoters and contractors lined their own pockets while building substandard projects, and when banks financed by state debt or intermediating state debts did not deliver on their promises. Since it was easier to dupe voters and legislators when they were naïve and poorly informed, the incompetence and corruption themes are not mutually exclusive.

Modern economists and economic historians tend to favor a third explanation, namely that defaulting states were "unlucky." States made what appeared *ex ante* to be good decisions, but *ex post* those decisions turned out to be bad ones when macroeconomic circumstances beyond the control of states confounded them. Economists prefer the "unlucky" explanation, as it requires neither incompetence nor corruption. But it ran a distant third in the early 1840s for politicians who needed scapegoats when the default crisis hit. Incompetence and corruption then dominated the politics of default, and the two ever since have colored most accounts of the crisis.

The distinction in the 1840s between incompetence and corruption was critical in one respect. States that defaulted on and then repudiated debts invariably repudiated because they felt they had been victimized by corruption. In contrast, states that defaulted on, but did not repudiate, debts usually concluded they had been incompetent. Default and repudiation were distinct policies. We explain below why states chose one or the other, and in some cases a combination of the two.

Distinctions between incompetence, corruption, and bad luck mattered not only at the time, but also in later accounts of the debt crisis. Most writers agree that the U.S. economy from the early 1830s through the early 1840s experienced severe macroeconomic fluctuations. Price levels inflated up to 1837, when a nationwide financial panic broke out in May, leading banks to suspend convertibility of bank money to base money for a year. The economy recovered in 1838 and 1839, but another banking crisis in October 1839 was followed by bank suspensions of convertibility in the South and West until 1842. A third banking crisis came in the winter of 1842.[1]

Although we will show that the panic of 1837, contrary to some accounts, had little effect on state borrowing, there is consensus that states were caught unprepared by the economic depression that lasted from late 1839 into 1843. In the depression, we among others concluded, when returns on state investments in banks and transportation projects dried up or failed to materialize, states defaulted on their debts.[2] Was this incompetence? Historian Marvin Meyers articulates the incompetence theme in holding that states were naïve, projects were poorly designed from the start, and when expected revenues from improvement investments failed to materialize, states defaulted.[3] Davis Dewey and others argued that state defaults resulted from a kind of ethical corruption: states were unwilling to raise taxes enough to service their debts even when they could have done so.[4] Peter Temin presents the "unlucky" explanation: when domestic and international sources of capital dried up in 1839, states were unable to borrow and had to stop work on their projects; when projects could not be completed and revenues from them therefore failed to materialize, states defaulted.[5]

From these and other accounts, we can derive three generalizations commonly used to explain why state debt defaults occurred: expected revenues from improvement projects failed to materialize; states were unwilling to raise taxes to meet their debt service obligations; and capital flows to states dried up in and after 1839. Unfortunately, these generalizations fit moderately well only one of the nine defaulting states, Pennsylvania. We show in Section VI that Pennsylvania was an unusual, not a typical, case. Nonetheless, it is possible to explain the timing and regional characteristics of state borrowing, the emergence of state fiscal crises, whether a state defaulted or did not, and whether a defaulting state repudiated or did not. Although no simple explanation works for all states, we show that there are essentially three regional patterns of default and non-default, corresponding to the Northeast, Northwest, and Southern regions. We move first to the timing and regional patterns of debt incurrence.

II

The most complete survey of state borrowing as of 1841 is Congress's William Cost Johnson Report.[6] The congressional investigators compiled a complete legislative history of debt authorization by state and year. Table 3 presents the report's series for total debt outstanding on September 1, 1841, by state and year of authorization. Since debt authorized in one year may have been issued in later years, the data do not represent debt issued by year. But since the totals give debt outstanding, we can be confident that debt issued was in the year of authorization or later, a matter of some importance here. The table does not report debt issued in the improvement era but redeemed before 1841, so it leaves out much of the early debt of New

York for the Erie Canal as well as some canal debt issued and redeemed by Maryland and Ohio. The last two columns in the table give, by state, the percentage of debt issued to establish banks, and the percentage of all debt outstanding in 1841 that was issued in the years 1837 to 1841.

The most startling feature of the table is timing. The massive increase in state borrowing occurs during and after 1837. The major financial panic of 1837 did not at all damp borrowing by states. In 1841, more than half of the outstanding state debt of $198 million had been authorized and issued since 1837. Only five of the 20 borrowing states in the table incurred more debt before than after 1837. The last two rows of the table give the total debt authorized and the total debt ever issued. States actually authorized an additional $24 million in bonds that were never issued after 1837.

A second feature brought out by the data is purpose. Nationwide, a third of all state debt was issued to invest in banks. That borrowing was concentrated in five southwestern states: Alabama, Arkansas, Florida, Louisiana, and Mississippi. Tennessee and Missouri in the same region also borrowed substantial sums after 1837 for bank investments, as did Illinois and Indiana. These state bank investments were motivated, in part, by winding up the branches of the Second Bank of the United States in New Orleans, Mobile, Natchez, Nashville, St. Louis, Lexington, Louisville, and Cincinnati after Andrew Jackson vetoed the Bank's federal charter renewal. These branches had provided substantial financing for economic activity in the trans-Appalachian west. States were eager to replace those facilities.

State borrowing in the 1820s and early 1830s was concentrated in the northeastern states—New York, Pennsylvania, and Maryland—that borrowed for transportation improvements, as well as Ohio in the Northwest for transportation, and Louisiana in the South for banks. More than half of state debt outstanding in 1841 had been issued by these five states. Hence, about half the answer to the question of why states borrowed so much is that these five states had been borrowing successfully for many years.

What about the other half? Why did newer western states start borrowing suddenly and heavily in the late 1830s? Why did the northeastern states and Ohio resume borrowing then? Why, apart from the closing of the Second Bank's branches, was there so much new bank investment after 1836 in the Old Southwest? We give a general answer to all these questions in Section III. Before proceeding to that, there is one more question suggested by, but not seen in

Table 3, that we need to address.

How did the states propose to service their debts? Essentially there were four models. One was New York's. 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. 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, even though the project was still not completed, generated more revenue than had been expected. New York put the surplus of dedicated taxes and canal receipts into a sinking fund, the Canal Fund, and was easily able to service and redeem its debts. The New York model was to raise taxes when borrowing began.[7]

Pennsylvania, in contrast to New York, did not raise taxes when it began issuing debt to finance its transportation projects in 1828. Instead, from the beginning Pennsylvania borrowed money to pay debt interest, counting on expected canal toll revenues to service the debt 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. Since unlike New York, Pennsylvania did not build up resources in a sinking fund, it was unable to purchase debt on the market when conditions were favorable. The Pennsylvania model was to borrow, pay interest with the proceeds of more borrowing, and delay taxing until such time as it became absolutely necessary. The state hoped taxes would never have to be levied.

Mississippi, whose internal improvements were entirely in banking, followed still a third model. When the state invested in a bank, it did so by issuing bonds to the bank to purchase bank stock. The bank was required, by explicit terms in its state charter, to service both interest and principal on the state bonds from dividends on the state's bank stock. Although the state pledged its faith and credit to the bonds, it never intended to pay either interest or principal on the debt. The Mississippi model was to issue debt that the state never intended or expected to service with tax revenues.

A fourth and more generally applicable model was to service debt with the revenue proceeds of an expanding tax base, in particular by means of property taxes on land, the time-honored mainstay of U.S. state and local taxation. The land boom of the 1830s was accompanied by rising land values, and the outlook appeared good for servicing debts from growing property tax revenues that would soon materialize. Improvement projects, in the eyes of some sponsoring states, would even help to expand the tax base further. This was the model especially of states in the Northwest. Older, more developed states found that they could follow the New York, Pennsylvania, and Mississippi models, and virtually dispense with property taxation. Eventually, after the crisis hit, they too were forced to follow the property tax model.

III

If the most striking feature of state borrowing is the sharp increase after 1836, another striking feature of state finance up to 1842—the height of the default crisis—is the declining importance of the property tax as a source of state revenue in many states. The primary alternatives to property taxation were taxes on business (fees, licenses, and capital taxes) and revenues from state investments, mostly in the stock of banks. Table 4 presents data on property tax revenues as a share of total state revenues in the 1830s and 1840s for a selection of northeastern and western states. By 1835, Massachusetts, New York, Pennsylvania, and Maryland no longer collected property taxes.[8] The same was true of Georgia and Alabama (not shown in the table).

How were these states able virtually to eliminate property taxes? Massachusetts earned more than half of its ordinary revenues from a tax on bank capital. In New York, dividends from bank investments, business taxes, and growing revenues from the Erie Canal enabled the state to abandon its property tax in 1826. Pennsylvania and Maryland had investments in banks and were able to tap a variety of business taxes; neither had had a property tax since the 1790s. Georgia and Alabama were enabled to eliminate their property taxes in the early 1830s because their investments in banks yielded increasing dividend revenues.

Since these states, mostly in the Northeast, had low or no property taxes, they had a substantial alternative revenue source in reserve. If pressed, they could fall back on property taxation. Moreover, the potential reserve was increasing because of rising land values. Assessed value per potentially taxable acre in New York, for example, rose from \$12 in 1835 to \$21 in 1838.[9] Credit markets at home and abroad were reassured by the large and increasing value of landed wealth actually and potentially taxable to service state debts. These expectations were not misplaced. In the debt crisis, states did call upon property taxes. By 1845, Massachusetts, New York, Pennsylvania, Maryland, Georgia, and Alabama had re-established state property taxes.[10] The two that defaulted—Pennsylvania and Maryland—did so only because they delayed implementing property taxes. Once the taxes were in place, they resumed debt payments.

States in the West were in a different situation. Well endowed with land, but with little else, these newer states had to rely on traditional property and poll taxes for a large share of state revenue. Unlike the older states, they could not afford to hold property taxation in reserve for a rainy day. On the other hand, their fiscal prospects were much more closely tied than were those of the older states to federal land sales and land values.

At this point, a little noticed feature of federal land-sale policy becomes crucially important in explaining why so much borrowing took place after 1836. When Ohio became a state in 1803, it made a deal with Congress. Congress agreed to dedicate 5 percent of federal land sale revenues in Ohio to the building of transportation improvements to and within Ohio. This was the origin of the Cumberland or National Road. In return, Ohio agreed to promote land sales by not taxing land sold by the federal government to private individuals until five years after the sale.[11] The tax-moratorium provision was written into the enabling acts by which other western territories became states.

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 5. Panel A of Table 6 shows information on acres subject to taxation, by year, for several states for the period 1835-1844.

The effect of the tax moratorium can be seen in the five-year lag between federal land sales and the increase in taxable acreage in each state. Not only did taxable acres increase greatly, but the value of land per acre was also rising, as shown in Panel B of Table 6. Between 1835 and 1837, for example, the assessed value per acre in Indiana rose from $5.41 to $9.87.[12] 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 reason why these states borrowed so much for internal improvements after 1836. Greater fiscal resources stared them in the face. A good portion of those resources would not be taxable for five years because of the moratorium, which made borrowing against foreseeable future revenues all the more attractive.

The promise of future tax revenues led states in the Northwest to borrow huge 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. 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 generalization that states expected improvement-project revenues to service debts incurred to finance them, but then those expectations went unfulfilled, is invalid as a general explanation of the debt crisis.

That generalization, however, does fit bank investments in the South. There it was thought that lending by banks against mortgages on more, and more valuable, acres of land would generate sufficient bank profits to service state debts. This is the Mississippi model. Although states put their credit behind loans to get the banks launched, they never expected to use tax revenues to make loan payments. Dividends would cover debt service. Previous American experience with banks gave credence to such possibilities. Massachusetts held large amounts of bank stock up to 1812, when it determined that it could receive even more revenues from banks by chartering more banks and taxing bank capital. Other New England states followed the Massachusetts example.[13] New York, Pennsylvania, and Maryland held substantial amounts of bank stock, usually obtained by charging banks bonuses for charters rather than by means of purchases financed by issuing bonds. In the early 1820s, for example, New York earned more than $100 thousand per year from dividends on its bank stock. By the 1830s, the benefits of chartering and investing in banks were well known, and states throughout the country made such investments. Bank investments were deemed to be among the safest that states could make, so much so that Barings, merchant bankers in London, urged the formation of the Union Bank of Louisiana in 1832, and took the entire issue of state bonds issued to finance the bank at a premium to demonstrate their confidence in the venture.[14]

Investments in transportation improvements, by way of contrast, were viewed as more speculative. That is why New York set aside salt-tax and auction-duty revenues to sustain the Canal Fund when it embarked on the Erie Canal. When Ohio began its canals in 1825, it altered its property tax from a per-acre to an *ad valorem* tax, and gave the state auditor the authority to raise tax rates to cover debt service. Thus, states that were uncertain about future revenues from transportation projects followed the New York model and provided for tax increases when they issued bonds.[15] But more confident states followed the Pennsylvania and Mississippi models. Evidence that confidence was building, or that expectations were changing, or both can be found in the decisions of Pennsylvania and Maryland not to raise taxes when they began their canal projects. Pennsylvania followed a borrow-as-you-go policy right up to its default in 1842. When New York and Ohio began their second wave of transportation investment in the late 1830s, and Massachusetts joined in, none of them raised taxes. Southern states never expected to service the bonds they issued to banks and, as a result, did not raise taxes when they issued debt either.

By 1836, increasing land values were the common factor underlying state fiscal policies, bank investments, and transportation improvements nationwide. Northeastern states knew they had large amounts of untaxed land, which was rising in value. It was a fiscal reserve against which they could borrow to finance extensions of transportation systems begun earlier under state auspices. Land values were rising elsewhere in the country as well. Western states, north and south, were in the midst of the greatest land boom in American history. In the Northwest, if states were uncertain about just when transportation investments would generate revenues, they nonetheless anticipated that many more, and more valuable, acres soon could be taxed. States were thus confident that property tax proceeds would provide adequate fiscal resources to service the debts they incurred.

The older states along the Atlantic coast had long and generally favorable fiscal experiences with chartering, investing in, and taxing banks. In the South, that was enough to justify large bank investments. These banks would lend to planters on the security of lands appreciating in value. Loans allowed the planters to buy more land to extend their operations. And their interest payments to the banks, generating dividends on a state's stock purchased with state bonds, would more than cover the debt service.

Investment bankers and investors on both sides of the Atlantic thought the same way. The increasing value of U.S. landed wealth was more than enough security for their loans to state governments. But what if land values fell? That was a potential problem for states in every region of the country, and especially for the newer states of the South and Northwest that borrowed a lot of money to finance internal improvement projects. By 1839, the potential problem began to become a reality. Sections IV and V compare and contrast the experiences of the defaulting states in these two regions. Section VI does the same for the indebted states of the Northeast.

IV

Five defaulting states repudiated all or part of their debts: Arkansas, Florida, Louisiana, and Mississippi in the South and Michigan in the Northwest. Repudiations shared a common theme. All the repudiating states entrusted state bonds to banking corporations that in one way or another reneged on their obligations to the states. When the banks defaulted on these obligations, the states felt justified in repudiating. Michigan's experience differed somewhat from that of the four southern states. It more properly belongs in the discussion of the northwestern states in Section V. But it should be remembered that all cases of state debt *repudiation*, as contrasted with mere default, involved banks.

Most of the repudiated southwestern state bonds had been invested in so-called land banks or plantation banks.[16] States purchased shares of stock in a bank by issuing state bonds to the bank. Private investors—these were mixed enterprises—also purchased stock in the banks by giving mortgages on their lands, usually to twice the value of the stock. The planter-stockholders were then able to borrow from the bank to purchase new lands and slaves, and for other purposes. The bank's liquidity derived from selling the state bonds, and its main assets were land mortgages.

In every case, the land bank was responsible for servicing the state debt that had been issued to it from dividends paid on the state's stock in the bank.[17] In no case was a state directly responsible for servicing its debt, although when Louisiana chartered its first planter banks in 1824 the state assumed a contingent liability. Louisiana did not repudiate that liability after the bank failed, although it did repudiate other state debts issued to banks whose charters did not have the contingent state liability.[18] More usual was a clause like this one from the 1837 charter of the Union Bank of Mississippi: "That to secure the payment of the capital and interest of said bonds, the subscribers shall be bound to give mortgage … on property, to be in all cases equal to the amount of the stock…."[19] Even when a state pledged its "faith" as security for debt service, the bondholders' first recourse in the event of default was to the mortgaged lands of planter-stockholders, not to the state.

The structure and functioning of land banks created several problems that became acute when the banks began to fail in 1839. First, unlike transportation improvements that benefitted all landowners along their routes, the benefits of land banks were highly concentrated among the wealthy planter elites holding stock in the banks and borrowing from them. When the banks failed, political and popular sympathies were not on the side of bankers and bank stockholders. As Florida's governor put it in 1841, "What right had a few hundred stockholders to make the whole people … and their posterity … groan under a load of debt for these institutions?"[20] After land banks failed and state bonds went into default, state politicians searched hard for reasons not to honor public debts incurred for the benefit of banker and planter elites.

Such reasons were not hard to find. A second problem arose from the way land banks marketed state bonds. States purchased stock in banks by giving them state bonds, and the banks then sold the bonds. But states put restrictions on the bond sales, such as requiring that bonds be sold at or above par. In many cases, the banks did not honor the restrictions, providing legal pretexts for subsequent repudiation.

Third, in an example of what would later be called "insider lending" or "crony capitalism," the banks had incentives to overvalue lands. Bank directors represented the stockholders, namely planters whose ability to purchase bank stock and obtain bank loans on mortgage security depended on the appraised value of their lands. In the booming 1830s, loans were made on inflated and inflating land values. In 1839, land values began to fall, and bank stockholder-borrowers often found the value of their mortgages were greater than the market value of their lands.[21] So they defaulted on their mortgages. The banks then could not make interest payments on state bonds. When bondholders asked states to make the payments, the states told them that their security was the mortgaged lands, from which they might seek recourse. The cozy relationship between banks managers and borrowers contributed to a popular perception that banks and bankers were corrupt.

Mississippi was the notorious repudiator. In 1830, it chartered the Planter's Bank, issuing $2 million of state bonds to purchase two-thirds of the bank's authorized capital stock of $3 million, and making the bank the state's fiscal agent. By the charter, the bank paid interest on the state bonds from dividends on the state's stock. Mississippi chartered a number of other banks in the years 1833 to 1837, but did not issue any new debt to them or acquire an interest in them.[22] As financial conditions tightened in 1836, Mississippi laid plans for another land bank, the Union Bank, to be capitalized at $15.5 million, with about half of that to be provided by issuing state bonds. The original bill passed on January 21, 1837, before the panic in May of that year. Mississippi's constitution required that any bill authorizing debt issuance be passed twice, at two consecutive sessions of the legislature, before becoming law. The 1837 bill passed again on February 5, 1838. It was amended ten days later to reduce the state's subscription to $5 million, and to stipulate that the bonds were not to be sold at less than par.[23]

The amended bill passed only once, not twice. Nonetheless, the state issued the bonds to the bank, and then on August 18, 1838, the Union Bank's commissioners contracted with Nicholas Biddle to sell the bonds to the Bank of the United States of Pennsylvania (BUSP). The contract specified that the bond proceeds were to be paid in five equal installments the following year, but that interest commenced as of August 18, 1838. Further, to make the bonds negotiable abroad, the contract made the bonds payable in England at the rate of four shilling, six pence per dollar. The effect of each of the two contract provisions was to sell the bonds at less than par value, contrary to the amendment that had authorized their issue.[24]

The Union Bank was grossly mismanaged and covered up its extensive losses. That was known to the state well before the bank failed to meet interest payments on Mississippi's bonds in 1841.[25] The state never paid any interest on the bonds, and it formally repudiated them in February 1842, giving reasons best described as technicalities: the legislation creating the bank had not been passed in a constitutional manner, the bonds were sold under the BUSP credit arrangement below the required par value, and the terms for paying interest in Britain further violated the par sales provision. More likely the real reason for repudiation is that Mississippi with some justification felt that the Union Bank had robbed the state. Mississippi did not have to repudiate. The state's property tax revenues alone were enough to service the Union Bank bonds.[26]

Having discussed the Mississippi case in some detail, we can be briefer with the other southern defaulter-repudiators. In Louisiana, neither the integrity of the land banks nor the bond-marketing methods were questioned. The charter of the Bank of Louisiana pledged the credit of the state to service the bonds and did not secure the bonds by the mortgages of stockholder-borrowers; Louisiana accepted its obligation to pay those bonds after the bank failed. Three other Louisiana land-bank charters — those of the Consolidated Association of Planters, the Union Bank, and the Citizens Bank — secured state bonds with mortgages on stockholder-borrower lands. When these banks failed, the state required that bondholders pursue liquidation of the mortgaged property of stockholder-borrowers before the state would meet obligations to them. Louisiana's repudiation was *de facto* rather than *de jure.* The state never paid interest on $21 million of bonds issued in favor of the three banks.

Upon achieving statehood in 1836, Arkansas invested in two land banks, the Real Estate Bank and the State Bank, by furnishing them with about $2.7 million of state bonds. The banks initially had difficulty marketing the bonds, but most of them were placed with investors, although—as in the case of Mississippi—sometimes in ways that violated their charters. Mismanaged, the two banks failed and were liquidated by the state in the early 1840s. Ostensibly the bank debt remained in default for many years, and arrears of interest accumulated. After the Civil War, Arkansas, either formally (on grounds of charter violations) or informally repudiated most of its debts.[27]

Florida, while still a territory, issued $4 million in bonds, mostly for banks. Its Union Bank alone received $3 million. The bank's agent, in violation of the charter, sold the bonds at less than par in Europe. Like other U.S. banks, the Florida banks suspended convertibility in

1837; unlike most banks, their insolvency quickly became apparent. "The funds of the banks were loaned to the stockholders, and the only security given to the banks was the land to purchase and pay for which the money was borrowed."[28] The territory never paid interest on the bonds issued to banks, and effectively repudiated them in 1842. In addition to charter violations, Florida claimed that as a territory it had no legal authority to issue the bonds in the first place. One may wonder who had been the more naïve — Florida in issuing the bonds, or investors in purchasing them.

Even in this group of southern states that borrowed to fund banks, neither default nor repudiation were inevitable. Alabama incurred large debts, but did not default, much less repudiate. What accounts for the difference? When Alabama established its State Bank in 1823, it took a larger role in the bank's management and pledged the faith and credit of the state for its support. The state issued bonds to invest in the bank, more bonds to invest in branches when they were created, and still more bonds to invest in other banks it chartered. Bank investments were so profitable that the state abolished almost all of its direct taxes in January 1836. After the crisis of 1837 forced the banks to suspend, Alabama issued $5 million in new bonds to the State Bank. In 1838, the state issued another $2.5 million of Sterling bonds to obtain specie to help the State Bank resume convertibility.[29] Alabama acted as a lender of last resort by coming to the aid of the State Bank during a financial crisis, unlike other southern states that simply distanced themselves from their floundering banks. In the end, the aid was not enough to save the State Bank and its branches, which were liquidated in 1842 and 1843. As in other states, legislators and citizens called for repudiation. In Alabama, however, that was a minority view. Before the banks were liquidated, Alabama early in 1842 re-instituted direct taxation. With tax revenues and the proceeds of bank liquidations, the state managed with difficulty to meet its debt service obligations. Alabama's experience indicates that in an emerging-market crisis, choices can be made and default is not inevitable.

V

In the Northwest, Indiana, Illinois, and Michigan defaulted, and Ohio did not. Unlike southern states, they borrowed mainly to finance transportation projects managed by state officials rather than to invest in privately managed banking corporations. States defaulted when they were forced to by financial constraints; they ran out of money, temporarily. Each of these defaulting state eventually worked to pay its legitimate debts. Why did these frontier states, each with a few hundred thousand people, borrow so much (see Tables 1 and 2)? What forced them into default? Was it because they had over optimistic expectations, because state officials were incompetent, or because investment banks marketing their bonds failed to deliver?

Because of the wealth of information in its state records, Indiana provides the best opportunity for investigating these questions. Indiana was not a newcomer to internal improvements when it commenced its so-called Mammoth system in 1836. In 1827, the federal government had granted the state 500 thousand acres of public land to help it build the Wabash and Erie Canal. Construction on that project began in 1832, and by 1835, $500 thousand in bonds had been issued for it. Indiana also borrowed to invest $1.39 million in its State Bank between 1834 and 1836.[30]

Indiana's legislature enacted the Mammoth bill in January 1836. It authorized the Canal Board to borrow up to $10 million to construct two new canals, extend the Wabash and Erie, construct one new railroad, survey three routes and begin construction of roads, railroads or canals along them, and clear Wabash River obstructions. The state also altered its property tax structure, moving from a flat rate per acre on land to an *ad valorem* tax on all wealth. The change was designed explicitly to capture the increase in land values along planned project routes, and it worked as planned.[31]

Borrowing and construction began in 1837. By 1839, 491 miles of works were finished or under contract. The state had issued more than $10 million in bonds, and had received $5.55 million for the Internal Improvement Fund and $1.5 million for the State Bank. The gap of some $3 million represented bonds sold on credit to investment banks, mostly to the Morris Canal & Banking Company, which was to pay the state in future installments. In August 1839, the Morris Bank notified the state that it would not be able to meet its obligations, and it was joined in its default that year by other credit-sale lenders.[32] The "suspended" debt (issued but not paid to the state) was estimated at $3.381 million, of which $2.146 million was for bonds issued to Morris Canal and Banking Company.

The bank default had immediate consequences. By the fall of 1839 construction throughout the state stopped. It was clear that Indiana would have trouble meeting its interest payments. Land values began falling, weakening the state's ability to raise property taxes and sending a troubling message to credit markets that based their confidence in Indiana on the value of its land. The suspended debt raised questions about the state's obligation to pay interest on bonds for which it had not received payment. Discussion of possible repudiation sent another set of troubling signals to the credit markets. In 1840, the state began panic borrowing to meet interest payments, including the issue of $1,500,000 in state notes. Property tax rates had been rising since 1836, and in a last ditch effort to avoid default, Indiana raised the 1841 property tax rate to 4 mills, or $.40 for every $100 of value (Panel B, Table 7).[33] The state defaulted on its interest payments in January 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, expecting (hoping) that new taxable acreage would come onto the tax rolls in 1841 and 1842 to provide enough in property-tax revenues to save the credit of the state.[34]

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.[35] The first column of Table 8, "1842 Plan," breaks down the Board's estimates for 1842. The Board anticipated that debts would reach $8 million, and that annual interest payments would total $420 thousand. It assumed that tolls would not begin until 1840, and would reach just $120 thousand 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.[36] Line (5) gives anticipated property tax revenues, based on projected assessed value, line (7), and tax rates, line (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 Board assumed in 1836 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 (Table 8, column 1, line (7)). This was 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.[37] On the other hand, the Board made overly 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.[38] By 1842, value per acre had fallen to $3.73. Column 2 of Table 8 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 meet 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 Table 8, column 3.[39] We assume that the total debt was $10 million, interest payments were $500 thousand a year, property tax rates were 4 mills, and land was valued at $7.05 an acre.[40] Indiana taxed personal wealth; 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 counterfactual analysis leads to a clear conclusion: Indiana defaulted in 1841 because land values declined.

Indiana confounds all three generalizations used to explain the default crisis. First, Indiana did not default because credit markets dried up in 1839. The state had already sold its bonds. The Morris Bank default, not the state's inability to sell bonds in London, brought construction to a stop. Second, Indiana did not default because expected canal tolls failed to materialize: the state had expected in 1836 to receive only $120 thousand from tolls in 1842, far less than its interest obligations, and even that was an optimistic estimate. Third, Indiana did not default because it was unwilling to raise tax rates. Indiana taxpayers were willing to accept a tax rate of 4 mills, the highest real rate of any state at the end of the 1830s, if it meant avoiding default (Table 7). Property tax revenues were $393,248 in 1842, compared to only $44,537 in

1835. When the state resumed interest payments in 1848, the property tax rate was again raised to 4 mills. Western states were willing to raise tax rates to very high levels to service their debts. What defeated their efforts was the shrinking size of their tax bases.

Illinois was in a similar position to Indiana, although it started its transportation projects even later. Illinois also had to cope with bank default on credit sales of bonds in 1839. So the state began borrowing heavily to meet interest payments after 1839 (Table 3). Like Indiana, Illinois raised property taxes in an effort to stave off default. We do not have land values for Illinois, and so cannot compute tax rates, but tax revenues per acre of land increased significantly between 1840 and 1842 as the state attempted to stave off default (Panel B, Table 7). This is clear evidence of a willingness in Illinois to bear substantial costs to avoid default. In the end, however, the money Illinois borrowed after 1839 was a mistake. The state struggled to resume interest payments and did not fully settle its obligations to its creditors until the 1850s.

Michigan in 1837 authorized $5 million in bonds for a variety of transportation investments throughout the state. The first bonds were sold in 1838, and then the state entered into negotiations with the Morris Bank to take the remaining bond issue of $3.7 million. The bank took the bonds on credit, promising to repay the state in quarterly installments of $250 thousand.[41] The bank was required to resell the bonds at par or better. Later in the year, the Morris Bank entered into an arrangement with the BUSP, in which the BUSP took three quarters of the Michigan bonds and agreed to make installment payments directly to the state. In the spring of 1840, the Morris Bank, after defaulting on a similar arrangement with Indiana, defaulted on its obligation to Michigan. The BUSP continued to make payments to Michigan until it went out of business in February of 1841. When the BUSP defaulted, Michigan stopped paying interest. In April 1842, the state repudiated $2,342,960 in bonds for which it claimed it had never received payment.[42] Michigan defaulted on all of its debts, but eventually repaid the bonds for which it received payment. Michigan repudiated the disputed bonds. Illinois and Indiana might have done the same with respect to bonds for which they were never paid. But rather than repudiating, they chose eventually to settle with their creditors. This shows again that choices are made in crises; few things are inevitable.

Ohio did not default. Its experience with internal improvement investments began when work on two canals was authorized in 1825.[43] Work was completed in 1832. The original canal law allowed the State Auditor to raise property tax rates to service state bonds, so the state property tax could be used flexibly to generate additional revenue. The canals were a financial success. In 1833, canal earnings of $150 thousand were enough to pay interest on canal bonds and return $47 thousand to the state.[44] Areas in the state not served by the original canals began clamoring for their own improvements, and in 1836 the state set out to expand its canal network. Between 1838 and 1842, Ohio spent over $7 million on canal construction, $1.6 million in 1841 alone. The state continued to expand its debt through the Panic of 1837, the Crisis of 1839, and the depression that followed. The new projects were not profitable initially; indeed, most never were.[45] But Ohio did not expect that canal revenues would be available to service state debts in 1841 and 1842.

The state drew on the credit resources of the Ohio banks, the Ohio Life & Trust Company, Prime, Ward, & King in New York, and Barings in London. 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. The state steadily increased property tax rates from 2.35 mills in 1837, to 5 mills in 1843, and 8 mills in 1845 (Panel B, Table 7). Property tax revenues rose from $202 thousand in 1837 to $642 thousand in 1841 (Panel A, Table 7). No other state came close to a nominal tax rate of 8 mils, but the actual rate relative to market values was probably never higher than 3 mills.[46]

Like Indiana, Ohio confounds all three stylized facts. First, Ohio did not expect its canals to generate returns for at least ten years. Ohio did not experience an unexpected shortfall in revenues in 1841 and 1842 because it had never expected revenues to increase in those years. Second, while Ohio paid high interest rates for the funds it borrowed after 1839, it continued to have access to both domestic and foreign credit markets.[47] The state completed the expansion of its canal network even when interest rates reached 10 percent. Neither supplies of foreign nor of domestic capital dried up after 1839, although loans became increasingly expensive. Finally, Ohio utilized its property tax to service debt, more than tripling property tax rates and revenues between 1837 and 1842. If we accept that the rate of the tax on true property value was 3 mills at it highest, then the tax imposed by Ohio represents a benchmark for "high" property taxes (making the 4 mill taxes in Indiana "very high."). The Ohio canal law allowed the Auditor to raise property tax rates to service canal bonds. This flexibility enabled the state to raise rates, but the state never chose to raise effective rates higher than 3 mills.[48]

VI

Of the northeastern states that had incurred substantial debts by 1841, two — Pennsylvania and Maryland — defaulted a year later, and two — New York and Massachusetts — did not default. All four were original states, and all four, unlike the states of the South and the Northwest, had substantial commercial economies. The two defaulting states had larger per capita debts in 1841 than the two non-defaulters. But that was less a cause of their defaults than it was a result of their initial decisions to implement what we termed in Section II the Pennsylvania model of borrowing. From the beginning, Pennsylvania refused to raise taxes and paid part of the interest on earlier borrowing out of new borrowing. The policy remained in effect up to the time of the debt crisis, when it was suddenly too late to avoid default by raising taxes.

Pennsylvania borrowed more money than any other state, and its default was notorious among British investors, especially Reverend Sydney Smith.[49] Pennsylvania borrowed to build the most ambitious transportation system of any state. The system was an amalgam of canals and railroads begun in 1826 and completed in 1835. By 1835, it was apparent that profits from the state works would never service the bonds issued for construction, much less provide a surplus to retire the debt, support the general government, and build public schools--all of which the system's promoters had promised. In 1835, the state debt was almost \$25 million, and gross tolls of \$684,357 fell far short of interest obligations of \$1,169,455.[50] Yet Pennsylvania continued to borrow for improvements and to finance current account deficits.[51] By the time Pennsylvania defaulted in 1842, the state debt was over \$36 million.

Two unique events helped Pennsylvania postpone the day of reckoning. In 1836, after Jackson's veto of the BUS federal re-charter, the state chartered the Bank of the United States of Pennsylvania (BUSP) as its successor. The bank was desperate for a new charter. Therefore the charter terms were generous to the state, with the bank agreeing to pay the state more than \$12 million in bonus payments, loans, and investments.[52] The second unique event was the distribution of the federal surplus in 1837. Pennsylvania received \$2.87 million. Bank payments and the surplus distribution brought the state's finances temporarily into balance in 1837 and

1838.[53]

In 1839, the October suspension of the BUSP, growing interest payments, depressed business conditions, and disappointing toll revenues brought the state to the brink of default. Rather than raise taxes, Pennsylvania chose to borrow nearly $4 million more in 1840 by drawing on its advantageous credit line with the BUSP. By 1841, the state was unable to sell bonds at par (the governor had been authorized to borrow up to $3.1 million on that basis) and the failure of the BUSP precluded additional loans from that source.[54] Still the state legislature refused to implement a realistic property tax that might have enabled it to avoid default.

In August 1842, Pennsylvania defaulted, issuing script bearing interest at five percent and payable at a later date for the amount of interest due.[55] Later in 1842, the state enacted a 2-mill property tax, but it would be several years before the tax began to produce sufficient revenues to service its debts. Pennsylvania never considered repudiation. It maintained from the time of the default that it would pay all of its debts. The issue of state scripts to meet interest payments in 1842 and after was evidence of its relative good faith. Pennsylvania resumed interest payments on February 1, 1845, funding the scripts into new bonds.

Why did Pennsylvania default at all? It came down to a reluctance to impose a property tax. One student of the state's financial history put it quite simply: "Speculation and hatred of all forms of direct taxation were the causes of the downfall in Pennsylvania's credit."[56] Many Atlantic seaboard states had virtually eliminated their property taxes by the 1830s (see Table 4). Pennsylvania had not had a property tax on real property since 1800. The state delayed the creation of a property tax until default was upon it, and then it took time for tax revenues to materialize. Revenues in 1842 were only $480 thousand; in 1843, $553 thousand; and in 1844, $751 thousand. When property tax revenues reached $1,318 thousand in 1845, Pennsylvania resumed servicing its debts, including funded interest arrears, to all bondholders (Panel A, Table 7). Had Pennsylvania's 2-mill tax raised $1 million in 1842, the state would not have had to default. Had Pennsylvania imposed a realistic property tax in 1836, when it became apparent that the State Works would not produce the needed revenues, the state certainly would not have defaulted. The unwillingness to levy an adequate and effective property tax was the primary cause of the Pennsylvania default.

Pennsylvania is the only defaulting state for which we can say that all three stylized explanations of the debt crisis apply. The state made poorly planned and executed transportation investments that failed to produce expected revenues. When the state was unable to borrow more money at par in 1842, it was forced to default. And Pennsylvania proved unwilling to raise property taxes in a timely manner that could have avoided its default.

Maryland's default has some similarities to Pennsylvania's, and also some differences. Unlike Pennsylvania, which built and operated its improvement projects, Maryland borrowed to invest in the stocks and bonds of companies chartered to build and operate the projects. Maryland's railroad investments, notably in the Baltimore & Ohio, generated investment revenues roughly sufficient to service the state debts incurred on their behalf, but the state's investments in canal companies, notably the Chesapeake and Ohio canal, yielded no revenues. In 1838, in an attempt to rescue the canal, Maryland borrowed an additional $8.775 million; most of the bonds were issued in 1839. In March 1841, facing impending default, Maryland imposed a property tax. That was a year and a half before Pennsylvania did the same, and Maryland hoped it would prevent a default. That hope was dashed when a number of counties challenged the state's right to tax them in the courts, and other anticipated revenues were not realized. Maryland defaulted in January 1842. As legal challenges to taxation were parried, property tax revenues rose (Panel A, Table 7), and Maryland resumed paying interest on its debts in 1848. In the interim, the state tried without success to sell its interests in the projects in 1843, and it reduced its arrearages by receiving defaulted debt coupons in payment of taxes.[57]

New York came close to defaulting in 1842. The state enacted the "Stop and Tax Law" of March 1842, which stopped further expenditures on improvement projects and re-instituted the state property tax that had been suspended in 1826. Those actions enabled the state to avoid default. The original Erie Canal had been such a great success that in 1836 the state decided to enlarge the Erie, expand the rest of the canal system, and lend the state's credit to private companies, mainly railroads.[58] It borrowed more than $15 million between 1836 and 1841. The new projects turned out to be bad investments, and bank failures further depleted the state's insurance fund, the Safety Fund. The "Stop and Tax Law" reinstated a property tax of 1 mill, which raised $514 thousand in fiscal year 1843. New York's imminent default crisis thus passed.

Massachusetts, without any old debts, borrowed nearly $6 million between from 1837 to

1841, mostly to lend the proceeds to railroad companies in the state. The loans were secured by mortgages on railroad property. The state's finances were strong and the railroads were successful. Default never became an issue, much less a crisis, in Massachusetts.

VII

In U.S. economic historiography, the state default crisis of the 1840s has always been a poor cousin of the Bank War and Panic of 1837. Indeed, the usual interpretation of the default crisis locates its origins in 1837, a notion firmly refuted by a simple examination of the timing of state borrowing. More than half the state debt outstanding in 1841 was incurred in 1837 or later. Other general explanations of the crisis are in need of revision as well:

Northeastern and northwestern states that invested in transportation projects, apart from Maryland and Pennsylvania, did not expect that the projects would return substantial toll and other revenues to state treasuries in 1841 and 1842. Defaults did not occur because expected canal tolls failed to materialize. Substantial tolls were not expected in 1841. On the other hand, while southern states invested in banks, they never expected to service any debts. Rather, they expected regular dividends from their bank investments. When the banks failed, creditors approached the states and asked them to redeem their solemn pledges, pledges the states failed to honor. Again, this was not a case of unexpected revenue shortfalls, but instead a case of unexpected demands to service bonds. The revenue shortfall that contributed to the crisis was an unexpected shortfall in property tax revenues caused by declining land values.

The states have been accused of an unwillingness to raise taxes to services debts. Certainly this was true of southern repudiators. But every northern state raised taxes and/or tax rates in the early 1840s, as did Alabama in the South. The rapidly rising property tax collections documented in Panel A of Table 7 are eloquent testimony to states willingness to raise taxes. States in the Northwest simply ran out resources to tax. Had Pennsylvania and Maryland implemented realistic state property taxes a few years earlier, they would not have defaulted.

We also shed light on the importance of incompetence and corruption in bringing on the default crisis. The old northeastern states possessed the administrative and financial ability to execute their canal and railroad investments. But Pennsylvania and Maryland were dilatory in levying adequate taxes. The newly settled northwestern states were pushing the envelope of financial responsibility. We have shown that Indiana could have continued to service its debts, following its original plan, but only if land values stayed at their 1837 levels. Whether or not Indiana's expectations were naive is a difficult question to answer. Southern states were in a different situation. By the 1830s, banks had long been a safe and stable investment for state governments. That said, Florida, Mississippi, and Arkansas invested in banks whose managements were less than circumspect. Corruption in banks, or at least charges of corruption—what later would be called crony capitalism—played a role in every state that repudiated debt. In Michigan it was the default of the Morris Bank, an established eastern bank rather than a bank the state had invested in, that led to the state's default and partial repudiation.

The distinct regional patterns—northeast, northwest, and south—of the debt crisis and of regional responses to it imply to us that the United States at that time, although under one federal government, was less a nation or country in the usual sense, and more akin to an empire of different geographic and economic regions at different stages of economic development. Like the British Empire of that era, the United States had its commercial-industrial center (similar to Great Britain) in the northeast, its semi-tropical cash-crop exporting area (its India) in the South, and its temperate region of recent settlement (its Canada, Australia, and New Zealand) in the old northwest. Like the British Empire, the United States consisted of states and regions loosely integrated by trading and financial networks. Since our analysis of the debt crisis found previous general explanations of it wanting, we suspect that generalizations about the United States based on the assumption that it was a country like most other countries in the nineteenth century could prove misleading. In economic comparisons with Western European countries, for example, the northeastern United States might be an entity more relevant than the entire U.S. empire of diverse regions and different stages of development.

What about lessons of the U.S. state debt crisis for contemporary emerging markets? Much as in emerging markets today, the biggest problems in the default crisis occurred in new states where populations were rapidly expanding and governments were attempting to finance valuable social infrastructure investments on a narrow tax base. Perhaps the lessons to be drawn are the same lessons that American states drew in the 1840s. First, that government borrowing should not occur without a simultaneous increase in taxation. Alexander Hamilton argued in the 1790s that whenever a public debt is incurred, it ought to be accompanied by tax increases sufficient to service the interest and over time to redeem the principal. In the era of internal improvements, Hamilton's precept was honored mostly in the breach. Between 1842 and 1852, however, eleven states wrote new constitutions that embodied such procedural debt restrictions requiring state governments to raise taxes when bonds were issued, and to obtain voter approval of tax increases in bond referenda.[59]

Second, states learned that they should be leery about investments in private corporations that tied state credit to the actions of private individuals. States throughout the country began prohibiting state and local ownership of private company stock in the 1840s. State constitutions began requiring that state legislatures pass general incorporations acts for banks (free banking), manufacturing, and other forms of corporations. Several states made the creation of "special" corporations unconstitutional as well. By opening entry to all who wanted a corporate charter, states made it more difficult for politicians to create spheres of common interest between project promoters and legislators. This undermined tendencies toward crony capitalism.

Third, emerging market societies might learn that American state and local governments did not conclude from the debt crisis that they should cease promoting economic development through public investment in transportation and finance. The backlash from the debt crisis in the 1840s did not to stop state and local governments from borrowing again for such purposes, or even waiting long before doing so.[60] Louisiana borrowed to build railroads in the 1850s and New York voters approved a bond issue to expand the canal network in the 1850s as well. States continued to charter banks, sometimes with public investment in them. What American states did learn from the debt crisis was that how decisions were made about the financing of investment projects could be as important as what projects were selected in determining whether outcomes would be successful or embarrassing.

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A Note on Sources:

The debts of the states are variously recorded in State Auditor and Treasurer's reports for the early 19th century in ways that often make it difficult, if not impossible, to reconstruct exactly how much debt was owed by each state in each year. In 1843, a congressional report, the "Report of William Cost Johnson," (27th Congress, 3rd Session, Report #296), estimated state debt outstanding on September 2, 1841. Their method involved tracking each piece of legislation authorizing state debt, the amount authorized, and how much of the authorized debt remained outstanding in 1841. As noted in the text, this produces an annual series of debt authorized rather than debt issued. The 1880 Census abstracted numbers from the "Johnson Report," *Census of Wealth, Debt, and Taxation*. The Census numbers were repeated by Ratchford in *State Debts*. We have reassembled the detailed data from the "Johnson Report" which forms the basis of Tables 1 and 2. None of the results in this paper would be affected by more detailed research on the debt series for individual states: the orders of magnitude are correct and the timing is, as noted, biased to dating authorization before the issue date.

The dates of default and repudiation were taken from English, "Sovereign Default."

We have consulted the original state reports at length. They form the basis for the public finance data assembled by Sylla, Legler, and Wallis. Information in Tables 4 and 6 was taken from original state reports between 1830 and 1850.

Table 5 was taken from Gates, *Public Lands*, Appendix B, p. 802.

Table 8 was taken from the Indiana *House Journal* for 1836/37, on pages 329 - 337.

Tables 6 and 7 are based on financial reports are available in collections of state documents, legislative reports, the journals of state legislatures, executive documents, and the publications of individual state departments. We reference them here by their generic titles; acknowledging that reports for individual years vary in their exact title:

Arkansas: *Auditor's Report*.

Indiana: *Auditor's Reports.*

Illinois: *Auditor's Report*

Maryland: *Treasurer's Report*

Michigan: *Report of the Treasurer* and *Annual Report of the Auditor General*

Mississippi: *Treasurers Reports* and *Auditors Reports*.

New York: *Annual Report of the Comptroller.*

Ohio: *Annual Report of the Auditor of the State.*

Pennsylvania: *Report of the State Treasurer* and *Report on the Auditor General*.

Table 1

Total Debt, Per Capita Debt, and Whether a State Defaulted or Repudiated

State	Total Debt 1841	Debt PC 1841	Default?	Repudiate?
FL	4,000,000	74.07	Y	Y
LA	23,985,000	68.14	Y	Y
MD	15,214,761	32.37	Y	N
IL	13,527,292	28.42	Y	N
AK	2,676,000	27.31	Y	Y
MI	5,611,000	26.47	Y	Y
AL	15,400,000	26.06	N	N
PA	33,301,013	19.32	Y	N
MS	7,000,000	18.62	Y	Y
IN	12,751,000	18.59	Y	N
NY	21,797,267	8.97	N	—
MA	5,424,137	7.35	N	—
OH	10,924,123	7.19	N	—
WI	200,000	6.45	N	—
SC	3,691,234	6.21	N	—
TN	3,398,000	4.10	N	—
KY	3,085,500	3.96	N	—
ME	1,734,861	3.46	N	—
VA	4,037,200	3.23	N	—
MO	842,261	2.19	N	—
GA	1,309,750	1.90	N	—
NH	0	0.00	N	—
CT	0	0.00	N	—
VT	0	0.00	N	—
RI	0	0.00	N	—
NC	0	0.00	N	—
NJ	0	0.00	N	—
DE	0	0.00	N	—

See source notes.

Table 2
Default, Resumption, and Repudiation Dates

State	Date	Resumed or Repudiated	Date
Indiana	January 1841*	Resumed	July 1847
Florida	January 1841	Repudiated	February 1842
Mississippi	March 1841	Repudiated	February 1842
Arkansas	July 1841	Resumed	July 1869
		Repudiated	July 1884, Holford Bonds
Michigan	July 1841	Resumed	January 1846
		Repudiated Partially	Part paid bonds, July 1849
Illinois	January 1842	Resumed	July 1846
Maryland	January 1842	Resumed	July 1848
Pennsylvania	August 1842	Resumed	February 1845
Louisiana	February 1843	Resumed	1844
		Repudiated	??

See English "Sovereign Default" and source notes.

Table 3
Debt Outstanding on September 1, 1841
By Year of Authorization
Thousands of dollars

	Before 1830	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	State Totals	Percent Bank	Percent 1837-41
Illinois	0	0	0	0	0	0	0	500	3,165	0	3,478	5,079	1,306	13,527	22%	100%
Indiana	0	0	0	200	0	1,790	227	7,771	0	1,400	1,363	0	0	12,751	19%	83%
Michigan	0	0	0	0	0	0	100	0	5,020	451	40	0	0	5,611	0%	98%
Ohio	3,800	600	0	100	0	0	0	170	550	1,710	3,476	149	369	10,924	0%	57%
Alabama	100	0	0	3,800	0	0	1,600	2,400	5,000	2,500	0	0	0	15,400	100%	64%
Florida	0	0	0	0	3,000	0	900	0	0	0	100	0	0	4,000	98%	3%
Mississippi	0	500	0	0	1,500	0	0	0	0	5,000	0	0	0	7,000	100%	71%
Arkansas	0	0	0	0	0	0	0	146	2,530	0	0	0	0	2,676	100%	100%
Louisiana	3,200	0	0	7,000	12,000	0	0	0	600	0	1,185	0	0	23,985	93%	7%
Massachusetts	0	0	0	0	0	0	0	0	1,900	2,200	1,644	0	225	5,969	0%	100%
New York	1,250	0	0	5,066	93	0	0	2,000	250	5,088	50	7,784	216	21,797	0%	71%
Pennsylvania	6,959	4,000	3,016	2,649	3,271	2,265	960	0	0	15	6,289	3,754	3,159	36,336	0%	36%
Maryland	146	597	0	0	1,122	3,020	40	20	500	8,775	903	0	92	15,215	0%	68%
Maine	0	0	0	0	0	0	0	0	2	267	507	825	133	1,735	0%	100%
Virginia	1,631	16	140	1,155	299	826	714	15	573	959	2,364	18	34	8,744	5%	45%
South Carolina	944	0	0	0	0	0	0	0	0	2,148	600	0	0	3,691	4%	74%
Georgia	0	0	0	0	0	0	0	0	903	422	0	0	0	1,325	0%	100%
Kentucky	0	0	0	0	0	0	200	190	0	1,250	33	1,413	0	3,086	0%	94%
Tennessee	0	0	0	500	0	0	35	0	0	2,881	0	0	0	3,416	43%	84%
Missouri	0	0	0	0	0	0	0	0	432	0	145	0	265	842	43%	100%
Total Outstanding	18,029	5,713	3,156	20,470	21,285	7,901	4,775	13,212	21,425	35,066	22,177	19,023	5,798	198,030	34%	52%
Total Authorized	20,739	5,716	3,156	20,471	21,350	7,909	7,220	18,589	21,609	41,617	26,795	27,377	12,170			
Total Ever Issued	20,741	5,713	3,156	20,470	21,285	7,901	4,775	13,556	21,587	37,746	20,764	19,811	5,798			

Table 4
Property Tax Revenues as a Share of State Revenues

State	1835 to 1841	1842 to 1848
Massachusetts	0.70%	3.67%
New York	0.40%	7.93%
Rhode Island	0.00%	10.07%
Delaware	2.56%	0.00%
South Carolina	0.63%	0.36%
Maryland	1.55%	50.40%
Pennsylvania	1.52%	37.48%
Weighted Regional Average	2.47%	16.45%
Illinois	26.16%	82.35%
Indiana	84.44%	27.83%
Ohio	26.77%	46.31%
Arkansas	88.41%	28.58%
Mississippi	54.02%	46.23%
Kentucky	40.00%	63.00%
Michigan	27.69%	56.17%
Weighted Regional Average	42.56%	50.92%

See source notes.

Table 5
Federal Public Land Sales
By year and for Selected States
(Thousands of Acres)

	Acres	Ohio	Indiana	Illinois	Missouri	Michigan	Alabama	Mississippi
1823	653							
1824	749							
1825	893							
1826	848							
1827	926							
1828	965							
1829	1244							
1830	1929	157	476	316	215	147	373	108
1831	2777	335	654	339	296	320	662	160
1832	2462	413	547	227	251	252	413	261
1833	3856	551	555	260	226	447	451	1121
1834	4658	479	674	354	254	513	1072	1064
1835	12564	661	1587	2097	662	1817	1587	2931
1836	20074	1283	3245	3200	1656	4190	1901	2024
1837	4805	470	1250	1013	664	773	382	271
1838	3414	343	602	779	510	97	160	256
1839	4976	242	618	1133	1039	135	121	18
1840	2236	33	118	389	572	26	57	19
1841	1164							
1842	1129							
1843	1605							
1844	1754							
1845	1845							
1846	2263							

Notes: Acreage from Gates, Appendix B, p. 802

Table 6

Taxable Land and Land Values

Panel A: Acres of Taxable Land

	Indiana	Ohio	Arkansas	Illinois	New York
1835	5,210,735			6,400,000	19,555,549
1836				6,650,000	
1837	6,185,714	15,771,060		6,950,000	
1838	7,129,959	17,119,217	2,233,984	7,250,000	21,831,010
1839		19,004,442	2,656,856	7,610,000	
1840		19,693,575	2,535,805	7,964,000	
1841	10,187,764		2,989,583	10,060,000	
1842	14,674,599		2,872,275	13,250,000	
1843	15,024,866	20,260,526	3,048,168	14,271,000	
1844	14,368,570		2,909,124	15,000,000	27,675,072

Panel B: Value of Taxable Land Per Acre

	Indiana	Ohio	Arkansas Land	Arkansas Town lots	New York w/o NYC	New York NYC
1835	$5.41				$12.49	$10,266.60
1836						
1837	$9.87	$4.36				
1838	$8.50	$4.70	$3.26	$439.35	$21.86	$13,895.95
1839		$4.37	$4.72	$258.75		
1840		$4.32	$4.47	$2,681.57		
1841	$6.20		$4.17	$328.06		
1842	$3.73		$3.88	$240.78		
1843	$3.67	$5.15	$3.62	$164.80		
1844	$3.71		$3.68	$84.54	$17.35	$12,281.26
1845			$3.43	$75.18		
1846			$3.37	$61.85		

Table 7

Panel A: Property Tax Revenues

	Indiana	Ohio	Michigan	Arkansas	Illinois	New York	Pennsylvania	Maryland	Mississippi
1835	$44,537				$39,629				$61,499
1836	$51,279		$45,926		$44,770			$515	$77,488
1837	$64,437	$201,629	$69,594		$37,526				$70,609
1838	$164,633	$432,093	$85,907	$21,159	$49,670				$130,000
1839	$171,636	$553,474	$92,385	$30,446	$36,928				$138,698
1840	$300,481	$562,994	$75,666	$31,095	$91,453		$3		$108,770
1841	$168,898	$642,154	$103,809	$31,956	$94,841		$33,292		$158,548
1842	$393,248		$58,296	$30,402	$193,862		$486,635	$254,353	$164,962
1843	$241,730	$660,759	$55,336	$31,140	$96,732	$514,011	$553,911	$367,233	$355,847
1844	$240,833		$57,109	$26,752	$129,207	$492,502	$751,210	$376,333	$254,292
1845	$271,679			$30,154		$548,504	$1,318,332	$507,781	$342,838
1846	$293,858			$28,860		$346,811	$1,445,112	$523,050	$352,287
1847	$361,263					$291,802	$1,380,781	$771,311	$321,973

Panel B: Tax Rates as Millages

Rate	Indiana Actual	Ohio Actual	Michigan Statutory	Arkansas* Actual	Illinois Rev Per Acre	New York Statutory	Maryland Statutory
1835					$0.006		
1836			1.50		$0.007		
1837	0.65	2.35	1.50		$0.005		
1838	1.70	4.04	2.00	1.36	$0.007		
1839		4.98	2.00	1.31	$0.005		
1840		5.03	2.00	1.41	$0.011		
1841	1.72		3.00	1.32	$0.009		2.00
1842	3.60		2.00	1.36	$0.015	1.00	2.50
1843	2.32	4.99	2.00	1.48	$0.007	1.00	2.50
1844	2.08	7.00**	2.00	1.34	$0.009	1.10	2.50
1845	2.28	7.00**		1.45		0.60	2.50
1846	2.40	8.00**		1.36		0.50	2.50
1847	2.88	2.75**				0.50	2.50

* The statutory rate in Arkansas was 1.25 mills in every year.

** Statutory rates in Ohio after 1844

Table 8
Indiana Plans for Internal Improvement Budget,
Actual Budget and Counterfactual Budget

		1842 Plan	1842 Actual	1842 Hypothetical
(1)	Interest	$420,000	$500,000	$500,000
(2)	Debt	$8,000,000	$10,000,000	$10,000,000
(3)	Tolls	$120,000	$0	$0
(4)	Surplus Revenue	$125,482	$0	$0
(5)	Property Taxes	$138,130	$393,248	$631,568
(6)	Surplus (deficit)	$(36,388)	$(106,752)	$131,568
(7)	Property Value	$138,181,758	$109,173,610	$157,892,090
(8)	Value of Land		$54,737,443	$103,455,923
(9)	Value of Non-Land Wealth		$54,436,167	$54,436,167
(10)	Acres		14674599	14674599
(11)	Value per Acre		$3.73	$7.05
(12)	Tax Rate, in millage	1.00	3.60	4

Note: The actual 3.6 millage in 1842 represents a statutory rate of 4 percent and a 10 percent delinquency rate.

Notes

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[1] For the macroeconomic history of the Panic of 1837, see Temin, *Jacksonian Economy* and Rousseau, "Jacksonian Monetary Policy." For the macroeconomic history of post-1839 events see Wallis "What Caused the Crisis of 1939?"

[2] "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.

[3] "It appears inevitable that the gaudy mid-thirties dream of sudden fortune should have collapsed. The credit inflation flowed from a highly vulnerable banking system lacking resources and techniques to sustain its commitments. The land bubble was balanced precariously upon a shaky credit structure, and had to fail as soon as a hard reckoning of values was enforced. The bond issues of the states created large immediate obligations *against doubtful, sometimes hopeless, revenue prospects*; a process of liquidation could not be long avoided. Briefly, the very excesses of the boom, inherently unstable, defined the necessity for a crisis as faith faltered and bets were called." Meyers, *Jacksonian Persuasion,* p. 114, emphasis added.

[4] "These [state] undertakings in many cases proved either unremunerative or too expensive for the State to carry; and in some of the newer commonwealths particularly there was not an honest determination, even where there was the ability, to meet the maturing obligations of interest and principle." Dewey, *Financial History,* p.244. "In the face of the unwillingness of all classes to be taxed to pay interest, there was in most states no recourse." Jenks, *Migration of British Capital,* p. 103.

[5] "The state projects initiated in the late 1830's had been started in the expectations of external financing. Capital imports and the distribution of the Federal Government's surplus initially had confirmed the expectation that resources were freely available. The decline in capital imports in fiscal 1838 was offset by the effects of the distribution and did not alter these expectation. The resumption of capital imports in the next year appeared to justify continual optimism. Unfortunately, the new inflow of capital did not continue, and the decline thereafter had neither offsets nor reversal. Unbounded optimism was replaced by its opposite, and the manifold projects of the states were abandoned." Temin, *Jacksonian Economy,* p. 153. Also see Jenks, *Migration of British Capital*, p. 102.

[6] Report of Committees, House of Representatives, 27th Congress, 3d session, Report No. 296. Johnson was a congressman from Maryland who wanted the federal government to relieve the states by assuming their debts, as had been done in Alexander Hamilton's debt restructuring in 1790. The proposal was debated, but went nowhere because of its purported unequal treatment of states, its moral hazards, and its burdens for federal finances. The Johnson report figures are repeated in the Census of 1880, vol. 7, and those figures are repeated in Ratchford *State Debts*.

[7] Alexander Hamilton, a New Yorker, as Secretary of the Treasury in 1790 and again in 1795 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. This, he said, was the secret of making public credit "immortal." 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 3). For Hamilton's statements, see *The Papers of Alexander Hamilton*, Harold Syrett, ed. (New York: Columbia University Press, 1961-1987, vol. 6, p. 106, and vol. 18, p. 103.

[8] Pennsylvania and Maryland both levied small taxes on different forms of wealth, such as watches, that appear in the tables as property taxes, but neither state had a large scale property tax on land and wealth until the 1840s.

[9] The figures are taken from the *Annual Report of the Comptroller.* The New York figures are also shown in Table 6. Since many eastern states were not collecting property taxes, we do not have records on assessed values. Complete annual assessments were supposed to be collected by the New York State Comptroller, even after the state repealed the state property tax in 1826, but the information was not collected regularly until New York resumed its property tax in 1842.

[10] Symmetrically, New Jersey and Delaware, which had not borrowed in the 1830s, did not have to re-establish their state property taxes in the late 1840s.

[11] The pertinent wording of the act is: "*Provided always,* That the three foregoing provisions [relating to school lands, salt springs, and the five percent fund for road improvements] herein offered are on the conditions that the convention of the said State shall provide, by an ordinance irrevocable without the consent of the United States, that every and each tract of land sold by Congress from and after the thirtieth day of June next, shall be and remain exempt from any tax laid by order or under authority of the State, whether for State, county, township, or any other purpose whatever, for the term of five years from and after the day of sale." Ohio Enabling Act, as reported in Thorpe

Federal and State Constitutions, p. 2289.

[12] Land values in Indiana are taken the Annual Report of the Auditor of State, Indiana, various years. See Wallis, "Indiana Property Tax," for a discussion of Indiana land. Unfortunately, we do not have reliable series on market prices of land for any state. Few states were as thorough and a frequent in their assessments as Indiana. Even when states did report assessed value, it was rarely a good proxy for market value.

[13] See Sylla, Legler, and Wallis "Banks and Public Finance," and Wallis, Sylla, and Legler "The Interaction of Taxation and Regulation."

[14]Hidy *House of Baring*.

[15]The clearest evidence that states felt banking projects were safe and transportation projects were risky was their fiscal behavior when they borrowed to finance them. When New York borrowed to finance the Erie Canal it immediately set aside tax revenues to service debt. When northwestern states borrowed to build their canals and railroads after 1836, they raised taxes and set aside some—albeit insufficient—funds to service debts, as will be shown later in the paper for the case of Indiana. When, on the other hand, states borrowed to invest in banks, they set aside nothing, they raised no taxes, and they fully assumed that their investments were safe. For a simple model explaining why a state that expects to pay debt service in the future will raise current taxes, see Sylla and Wallis "Sovereign Debt."

[16] Southern bank investments: Florida, $3,000,000, 1833, Union Bank of Florida; $400,000, 1835, Southern Life Insurance and Trust Company; and $500,000, 1835, Bank of Pensacola. Arkansas, $1,633,000, State Bank of Arkansas in 1836, 1837, and 1838; $1,530,000, Real Estate Bank of Arkansas in 1836 and 1837. Mississippi, $2,000,000, 1830 and 1833, Planters Bank; and $5,000,000, 1838, Union Bank of Mississippi. Louisiana, $2,400,000, 1824, Bank of Louisiana, $2,000,000, 1827, Consolidated Association of Planters (the *Johnson Report* does not give a date for this investment, but Caldwell dates it to 1827, *Banking History of Louisiana*, p. 46); $7,000,000, 1832, Union Bank of Louisiana; $12,000,000, 1833, Citizen's Bank of Louisiana; $600,000, 1837, Nashville Railroad Company; and $1,185,000 for various purposes in 1839. The dates and amounts taken from the *Johnson Report*. For a detailed description of these banks, occasionally with different dates or amounts, see Sparks, *Agricultural Credit*, pp. 98 - 111, and the descriptions of individual states in McGrane *Foreign Bondholders*.

[17]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.

[18] The contingency arrangement is 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. "That if the dividends on the stock held by the state in the said bank, shall at any time be insufficient to pay the instalments of interest on the principal of said bonds, as the same may become due, that said bank shall supply such deficiency, and charge the same to the account of the state, and for the payment thereof the faith of the state is hereby pledged."

[19] Charter of the Union Bank of Mississippi, *Laws of Mississippi*, Adjourned session, January 21, 1837, Section 8, p. 40.

[20] The quote is from the Florida Territorial Governor's address to the legislature recommending repudiation, *Florida Senate Journal*, 1841, as quoted in McGrane *Foreign Bondholders*, p. 238. In Arkansas, the Real Estate Bank had only 284 stockholders. In 1842 the stockholders owed the Bank $1.5 million compared to only $424 thousand owed by non-stockholders. See Worley "Real Estate Bank," p. 414. In the wake of the default in Arkansas, the *Arkansas State Gazette*, February 17, 1841, 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." As quoted, with emphasis, by Worley, p. 423.

[21] 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.

[22] 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, an enterprise combination popular at the time.

[23] 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.

[24] The sterling price used in the agreement was the long-standing conventional exchange rate, not the prevailing market exchange rate, which was 9 percent higher than the official rate and reflected the gold contents of the dollar and the pound. Convention rated the pound at $4.44, whereas the mint-par rate was $4.86. In effect the contract required the Union Bank to repay $1,095 in principal for every $1,000 it received from the BUSP.

[25]At the start of 1840, Governor McNutt told the Mississippi legislature, "The fact that the [bank's] managers have smothered the important facts called for, proves that culpable mismanagement and selfish favoritism have characterized their operation." See McNutt's message to the legislature, January 7, 1840, *Mississippi House Journal*, p. 50.

[26] See Panel A, Table 7 for Mississippi property tax revenues. Interest payments on the Union Bank bonds were $250 thousand per year.

[27] For Arkansas see Worley, "Real Estate Bank" and "Arkansas and the Money Crisis;" and McGrane *Foreign Bondholders.*

[28] "History of State Debts," *Tenth Census of the United States, 1880*, vol. 7, p. 587.

[29] See Table 3, and "History of State Debts," *Tenth Census*, vol. 7, 590-92. Brantley, *Banking in Alabama*, discusses state involvement in banking and state public finances.

[30] The 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, *Indiana* Canals, Esarey *History of Indiana*, Carmony, *Indiana*, and Wallis "Property Tax in Indiana."

[31] See 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. Land values by county are discussed in detail in Wallis "Property Tax in Indiana." Between 1835 and 1837, land values increase throughout the state, but by much more in canal counties than in non-canal counties.

[32] See Milton Stapp to Noah Noble, August 6, 1839, Riker, *Wallace Papers*, p. 260, and again on August 20, p. 264. Noble, a former governor and head of the Improvement Fund in 1839, may have known of the possibility of default as early as July. The Morris Bank received $3.8 million of the $5.6 million in internal improvement bonds issued between 1832 and November 1838, as recounted in the *Report of the Fund Commissioners to the Senate*, *December 21, 1838* reprinted in the *Wallace Papers,* p. 240-41. Issues included $1,000,000 in internal improvement bonds payable in sterling in London that the Morris Bank sold to Rothschilds, a $1,000,000 issue to increase the capital of the State Bank, and $1,000,000 in state bonds to the Morris bank in April 1839, for which the Bank was to pay $100,000 a month, beginning in September 1839. Most of the Indiana bonds sold to the Morris Bank probably went straight to Europe, as the original plan was to use the Indiana bonds to extinguish the mortgage debt incurred in constructing the Morris Canal, a story that an be traced through the company *Minutes* in the New Jersey archives, described in Wallis, "Property Tax in Indiana."

[33] For Indiana, Table 7 gives actual *ex post* property tax rates, rather than the legislated rate. Indiana collected .0036 of its property tax base in 1842, even though the legislated rate was .004.

[34] In 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.

[35] The report appears in the *Indiana House Journal* for 1836/37, on pages 329 - 337. The report was preceded on pages 326 and 327 by a report from the Office of Canal Commissioners dated Jan. 10, 1837. The canal bill was not passed until January 27, 1837, and it is possible that the Canal Commissioners understated the anticipated amount of debt that would be incurred because they were not, at that time, aware of the full extent of the works that the legislature would authorize.

[36] Indiana's 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 was only supposed to receive $860,254.44 (and the fourth installment of the Surplus was never paid), Bourne, p. 61-65. Fatout notes the discrepancy. Naivete was always part of the equation in Indiana.

[37] Taxable acreage almost tripled between 1835 and 1843, Panel A, Table 6. There is no way to infer the implicit value per acre used by the Board.

[38] Assessed 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.

[39] The $7.05 per acre figure used in the counterfactual was not the highest land value in the period, well below the $8.23 an acre reported in 1837, it 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."

[40] 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.

[41]The details of the Michigan bonds and the state's arrangements with the Morris Bank are detailed in W. Jenks "Five Million Dollar Loan."

[42] Calculating the amount of the unpaid bonds was complicated by implicit payments for interest between the banks and the state, and the amount of damages allowed to the state. Since the Morris Bank took all of the bonds at once, it did not pay the state on a bond by bond basis. Of the $2,342,960.24 in unpaid bonds claimed by the state, the actual amount of unpaid principle appears to have been $1,875,000, accumulated interest on the unpaid bonds of $362,566.52, and an implicit damage claim by the state of $155,393,72. These figures are based on W. Jenks's "Five Million Dollar Loan" calculations, pp. 603 to 604.

[43] This section is based on Scheiber *Ohio Canals*.

[44] Scheiber *Ohio Canals*, p. 108.

[45]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, *Ohio Canals,* p. 168, emphasis added.

[46]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, see Panels A and B of Table 7. This is the basis for the assertion in the text that the real tax rate in Ohio was never higher than 3 mills.

[47]"During the remainder of 1842, the fund board sustained installment payments on the three-year loans by issuing bonds to Ohio banks at prices of 70 to 75. In this manner, nearly $700,000 of bonds were sold for cash payments of only $500,000. Even these sales might have been impossible had the Barings not once again come to the aid of the board: for in late May, the Barings purchased $400,000 of bonds at the distressingly low

price of 60. A sale at 60 per cent of face value was hardly an expression of unbounded confidence, and yet any sale whatever of American securities was astonishing news in the London money market of 1842. Not least important, the Barings purchase enabled the fund board to pay the July 1842 interest to bondholders as scheduled." Scheiber, *Ohio Canals,* p. 152. Sales of 6 percent bonds at 60 implied only a 10 percent interest rate. For more details on Ohio bonds in London and New York see Kim and Wallis "Bond Markets."

[48]The flexibility that Ohio possessed was merely procedural. The Ohio politicians would still bear political costs for allowing property taxes to be raised.

[49]Rev. Smith fulminated that "... 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 by McGrane, *Foreign Bondholders,* p. 59. The original letter appeared in the *London Morning Chronicle*; McGrane cites its quotation in the *London Times,* Nov. 4, 1843.

[50] Hartz, *Economic Policy,* p. 149.

[51] In 1831 the debt had reached $12 million, annual interest payments were $616,850, and revenues available to pay the debt, after ordinary expenses, were only $420,000. The state was running a current account deficit of almost $200,000 a year, a situation that continued up to 1842.

[52] "By acceptance of the charter the Bank stipulated to pay the state of Pennsylvania a bonus of $4,500,000; to take the stock of the state to the amount of $6,000,000; and to loan the state or to subscribe to sundry roads in all a sum of $1,675,000—making a total of $12,175,000." *Tenth Census*, vol. 7, "History of State Debts," p. 541.

[53]See Worthington, "Historical Sketch" p. 44 and Bourne, *Surplus Revenue.*

[54] The promise of the BUSP to buy state bonds had a significant impact on the market for Pennsylvania bonds, as discussed in Kim and Wallis "Bond Market."

[55] Worthington "Historical Sketch", p. 57.

[56] Worthington "Historical Sketch", p. 38.

[57] *Tenth Census*, vol. 7, "History of States Debts," pp. 545-46. Maryland was able to meet current interest payments in 1845, and began paying back interest in that year, but did not formally resume until 1848.

[58] *Tenth Census,* vol. 7, "History of States Debts," 537-39.

[59] For Hamilton's thoughts see footnote 7 above. For procedurals debt restrictions see Wallis, "Constitutions, Corporations, and Corruption" and Goodrich, "The Revulsion Against Internal Improvements."

[60] Goodrich, "The Revulsion against Internal Improvements."