

What Caused the Crisis of 1839?

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This is the WP version without the Figures. For Figures, please contact me.

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Politicians and economic historians have tried to explain what caused the Panic of 1837 for over 150 years. Martin Van Buren articulated the position of the Jacksonian Democrats in his message to the special session of Congress in September of 1837, four months after the Panic, when he blamed the “present conditions” on an “overaction in all the departments of business -- an overaction ... stimulated to its destructive consequences by excessive issues of bank paper and by other facilities for the acquisition and enlargement of credit.”¹ The Whig Party responded with their case against Jackson. They blamed the Panic on his veto of the National Bank charter, removal of deposits, the use of pet banks, and the Specie Circular.² Democrats and Whigs argued over the appropriate role of banks and corporations in the economy and the government’s role in regulating them until the early 1850s. It was the defining issue of the Second American Party system.³ In one form or another, the debate carried into the twentieth century when Peter Temin ingeniously explained what caused the Panic in *The Jacksonian Economy*. He pointed out that neither the Whigs or the Democrats were right, that neither Jackson or Biddle was responsible for the Panic. International causes created a steady flow of specie into the United States producing inflation between 1834 and 1836, and tightness in international financial markets, driven by Bank of England policy, brought on the Panic in May of 1837.

While the Panic of 1837 is often blamed for the “... seven long years the people of this land struggled to free themselves from its oppression,” historians always understood that the economy recovered quite rapidly from the Panic, and that “... complete liquidation was suspended until after 1839 and that the most painful event was the depression which ensued.”⁴ Temin is clear: “Yet, unlike 1837, no recovery followed the panic in 1839. Prices did not recover, and the signs of prosperity disappeared.” The attention paid to 1837 is understandable, given its political importance, but the Crisis of 1839 led to four years of deflation and contraction, the default of nine states of their debts in 1841 and 1842, and we should know whether the contractionary forces at work after 1839 were the same as those at work in 1837.

Temin devotes just one chapter to events after 1837. He concludes that 1839 was much the same as 1837, that international forces were critical, but his account is brief and his conclusions are not all firm. He makes a strong case that the contraction from 1839 to 1843 was primarily monetary, that prices, rather than production fell. But he is less certain on the causes of the deflation.

“If banks and the American public had not decided to hold more specie, specie would have been exported, and the money supply would have fallen anyway. But it is not quite accurate to say that the cessation of capital imports was the cause of the deflation, and that *the mechanism by which the supply of money fell was irrelevant*. For capital imports stopped at least partly because the American states defaulted on their interest payments, and these states defaulted partly because the financial system of the United States was prostrated by deflation. To some extent, therefore, the decline in British investment in the United States was a result of the crisis in the United States...” (p. 165, emphasis added.)

The connection between state finances, capital flows, and banks (the financial system) is crucial to understanding the unfolding of events after 1836. The crisis in state finances began in the summer of 1839, even though the defaults did not occur until 1841 and 1842. State governments in the south and west were closely tied to their banks, so close that when states began to experience financial troubles in 1839 so did their banks, and vice versa. As we will see, the Panic of 1837 erupted in the northeastern financial centers while the Crisis of 1839 and the deflation that followed ravaged the south and west. This is “the mechanism by which the supply of money fell.” The reason the Crisis of 1839 led to four years of deflation, and the Panic of 1837 did not, can be found in the behavior of state governments and their banks.

Although we disagree on a few points, this paper extends rather than replaces Temin’s argument. International forces and capital flows are still very important; the character of the contraction is still monetary, what needs to be explained is deflation, not unemployment; and events do not turn on Jackson or Biddle. I believe that domestic forces were relatively more important than international forces in 1839, that the Bank of the United States of Pennsylvania contributed to instability after 1839, and that the most important role of government in this story is not fiscal. State governments were the major investors in canals, railroads, and banks, and

their behavior as principles in these undertakings had an enormous impact on the economy. During the 1840s and early 1850s the Whigs and Democrats hotly debated what role the government should play in promoting economic development. They argued over what lessons should be learned from the events between 1837 and 1843. In the end, those debates produced free banking, general incorporation laws, and constitutional restrictions on government's ability to issue debt and invest in private corporations. The lessons learned were real. States did matter, and it is important that we understand the role they played in the Crisis of 1839 and the deflation that followed.

Background

The contours of the 1830s macro economy can be seen in Figures 1, 2, and 3 which show land sales, prices, and international trade data for the US economy.⁵ All of the series exhibit what Matthews calls "double headedness": a peak in or around 1836 and a peak in or around 1839. The price data in Figure 2 are monthly, and the two vertical lines are located at the peak in the series, which occurred in both years in February. The land sale and trade data are annual. The double peak in land sales is more difficult to see because of the extraordinary sales reached in 1835 and 1836. But land sales did recover in 1839, as did prices and foreign trade.⁶

We can say little about the course of national product or employment between 1836 and 1843. Gallman's worksheet data show considerably less variation in GNP than in the trade or price data, and Temin uses those numbers to argue that the effects of the depression that began after 1839 were largely nominal.⁷ Real output does not appear to have fallen very much between 1839 and 1843, but prices dropped precipitately. "In the 1840's, the falling supply of money led to falling prices, and prices fell far enough to obviate a need for production to fall in addition. Business was deranged during the price fall, but the panics were short-lived. The growth of income was below its usual rate, but there was no decline in income comparable to the 1930's. In the 1830's and 1840's, prices were far more flexible than production – in both directions."

(Temin, p. 171).⁸ The big question is why prices recovered so quickly after 1837 and fell so far after 1839.

Democrats, and some historians, argued that the expansion of the banking system in the early 1830s produced an increase in the money supply, a rapid inflation, and the conditions for a financial crash in 1837. Whigs, and other historians, maintain that Jackson's failure to recharter the Bank of the United States, his arbitrary removal of federal deposits from the BUS to the state banks, the Specie Circular of 1836 (which required that all federal lands be purchased with specie), and the mismanagement of the federal surplus distribution in 1837, disrupted the financial system and ultimately led to the Panic in May of 1837.⁹ The essential elements of Temin's revision of both traditional stories is shown in Table 1, taken from Rockoff. Using a basic money multiplier, Rockoff decomposes the changes in the money supply into changes in specie held by banks, the reserve ratio of banks: specie held by banks as a fraction of total loans and deposits; the currency ratio: specie held by the public to the money supply; and the interaction between the two ratios. For the period of intense inflation from 1833 to 1836, or for the longer period of mild inflation between 1829 and 1839, specie inflows account for all of the growth in the money supply.

Temin showed that specie flows were exogenous, at least to the banking system, by tracing the flow of specie into the United States. Under the classic gold standard, inflation in the United States should have led to specie outflow to Britain. Three changes offset this force in the 1830s. First, the inflow of silver from Mexico to the United States increased. Second, the outflow of silver from United States to China slowed. American traders were able to purchase Chinese silks, teas, and other products with bills of exchange payable in London. They could settle those bills in London with cotton and other exports, eliminating the need to ship specie to the Orient. Third, the British began investing in the United States in the late 1820s, investments that would grow steadily in the 1830s.¹⁰ As a result, the outflow of specie declined at the same time that the inflow of specie rose. By showing that the inflation of the 1830s was caused by

exogenous specie flows, Temin neatly defused the major points of contention in the Bank War. Neither Jackson or the state banks were responsible for the inflation.

Temin then showed that international factors precipitated the Panic in 1837, although the evidence is necessarily more circumstantial. Temin accepts that the Specie Circular and the Surplus Distribution could have contributed to the crisis in late 1836 and early 1837, but he points to the restriction in credit caused by the Bank of England, beginning in late 1836, as the primary cause of the Panic. The evidence for Temin's argument can be found in Table 2, which reports the New York and Boston price of 60 day bills payable in London (1), discount rates for domestic commercial bills in New York and Boston (2), the Bank Rate of the Bank of England (3), commercial bill rates in London (4), and bullion reserves at the Bank of England (5).

Raw cotton was the largest export of the United States and typically Britain's largest import.¹¹ Cotton found its way to Britain through a complex series of middlemen, beginning with plantation owners in the American south and ending in a British textile factory. Southern cotton owners typically consigned their product to an intermediary who arranged for financing and shipment of the cotton to Britain. The owner could realize these credits by drawing a bill of exchange on London, payable in sterling in London. These bills could be discounted with local banks, merchants, or other financiers. Bills typically acquired a number of endorsers, all of whom stood at risk to honor the bill in the event that the sale of the cotton which the bill was predicated upon failed to generate funds sufficient to redeem the debt. The bills accumulated in smaller financial centers, were bought and transferred to New York or New Orleans, and from there on to England. The BUS played a prominent role in the interregional and international aspects of cotton finance. Bills were often drawn on, or found their way into the hands of one of the "American" houses, British firms that specialized in the financing of the American trade: "They were Baring's, Brown's, Lizardi's, Morrison, Cryden and Co., and the three that later became notorious as "the three W's", Wilson's, Wiggin's, and Wildes'."¹²

American importers of British goods typically purchased goods on credit extended by

British manufacturing firms that took the form, again, of bills payable in London. American importers typically bought sterling bills drawn on London to settle their accounts. There was an active market for sterling bills in the United States. Column (1) of Table 2 reports the premium in New York and Boston on 60 day bills on London. Par value for these bills is a "premium" of 9.75 percent.¹³ The price on these bills was usually slightly below par.

The American economy was booming in 1836. Land sales were extraordinary. Credit markets were tight, and discount rates on domestic commercial paper in New York and Boston were high for the entire year, column (2). Trade with Britain was booming, Figure 3, and British investors were beginning to find new investment opportunities in the canals, railroads, and banks being built by American states. The Bank rate had been 4 percent since 1827. In late 1836, market rates began to rise, columns (4), discounting at the Bank began to increase, and the Bank of England began to feel the pressure on its bullion reserves, column (5).¹⁴ The Directors of the Bank identified one source of specie outflow in the American trade. The Bank, indeed, held increasing amounts of security for loans to the American houses, and the Three W's were in serious trouble. In July 1836, the Bank advanced the Bank Rate to 4.5 percent and became more selective in the bills it would accept, particularly in the case of the American trade. "A part of this action was the absolute refusal of the Bank's Liverpool Agent, no doubt under orders, to handle paper drawn from America on those firms."¹⁵

The effects on the American market were chilling. The price of cotton began to fall, and short term interest rates rose further.¹⁶ As cotton prices declined, all of those who had endorsed sterling bills were potentially liable for losses. Heaped on top of the international disruption were the internal derangements caused by the Specie Circular and the Distribution Act, which required the movement of specie throughout the country. Under pressure throughout the spring of 1837, American banks suspended convertibility into specie in May of 1837. Exchange on London rose to a premium of ten percent in the ensuing months, as the commercial crisis spread.

The fall in the price of cotton was one of the principal ways in which the pressure

exerted by the Bank of England on the English financial market was communicated to the United States. As a result of this fall, debts secured by cotton became uncollectible, merchants holding such debt failed, banks found their assets illusory or at least illiquid, and they refused to honor their liabilities. In short, they suspended payment. The restrictions of the Bank of England, acting strongly through the prices of cotton, bear much of the responsibility for the suspension. (Temin, p. 141)

The pressure on domestic markets was eased by the suspension, banks no longer had to worry about converting notes into specie and commercial rates on domestic commercial paper fell back to more normal levels. The Bank of England reversed its policy toward the American houses in late spring of 1837 and bailed out the three W's. The federal government allowed the third installment of the distribution to be paid in bank notes rather than in specie. The crisis eased and, with the repeal of the Specie Circular in 1838, the economy began to recover rapidly.

Peter Rousseau has challenged Temin's emphasis on international factors in the Panic of 1837, by carefully examining the regional pattern of specie holdings in banks in 1836 and 1837. Rousseau finds a much larger role for the Surplus Distribution, whose effect was to cause a drain of specie from New York banks. In their weakened condition, the subsequent dislocation imposed by the Specie Circular brought on the panic: "International factors added pressure to an already volatile situation by late April and early May, but any demands for specie from abroad would have been absorbed by a New York money market that had not been subjected to such a severe internal drain." (Rousseau, p. 40).¹⁷

There is much of value in Rousseau's argument. While I will remain on the sidelines of this debate, it is interesting that Temin's anticipated response is geographic:

"Since the problem [the Panic] originated in international affairs and was communicated through the cotton market, the pressure was felt first in the principal markets for cotton, New Orleans and New York. Had the pressure originated with the Specie Circular or the distribution of the surplus, the pressure would have been concentrated first in the West or in New York, the city most drawn upon for interstate transfers, and not in New Orleans, where bank deposits of the Federal government doubled in late 1836, and only small interstate transfers were demanded." (Temin, p. 144).

What then of 1839? The economy recovered quickly in late 1838 and 1839. Prices,

exports, and imports all recovered near to the levels of 1836, and land sales, while well below their 1836 peak, were still higher in 1839 than any year between 1820 and 1850 except for 1835 and 1836, although land sales in the south did not recover. In 1838 and 1839, the British suffered poor wheat harvests, and in 1839 British grain imports rose to their highest levels in a decade.¹⁸ Grain imports and continued British lending in the United States put pressure on bullion reserves in the Bank of England, column (5). The Bank responded again by raising the Bank Rate. Financial markets tightened, the price of cotton fell, and in October 1839 the Bank of the United States (now of Pennsylvania) suspended convertibility, followed by banks throughout the west and south. Banks in New York and New England did not suspend, however, and the price of sterling bills stayed near par throughout the crisis, column (1). The reasons for the crisis of 1839 appear to be the same as in 1837, an international crisis prompted by the actions of the Bank of England and transmitted to the United States through lower cotton prices. "The crisis of 1839 was brief: like the Panic of 1837, it did not outlast the suspension of specie payments. It was not as severe as the earlier panic – there was not scarcity of foreign exchange and not all banks suspended payments. Yet, unlike 1837, no recovery followed the panic in 1839. Price did not recover and the signs of prosperity disappeared." (Temin, p. 154).

The Panic of 1837 compared to the Crisis of 1839

The Treasury Department was required to collect information on every bank in the country, on or near January 1 of each year, throughout the 1830s. Table 3 draws on these reports to track the experience of banks from January 1, 1837 to January 1, 1841. In order to emphasize the main trends, the nation is divided into two regions: the Northeast, containing all the states north and west of Pennsylvania (including PA), and the south and west, containing the remaining states. Totals are reported for the BUS and the nation as a whole. The relevant comparisons for the two events are between January 1, 1837 and 1838, and between January 1, 1839 and 1840. The upper four panels give the percentage change in loans and discounts, specie,

circulation, and deposits for the two regions, calculated as the percentage change in the level of each measure in the region from the first year to the second year. The bottom two panels give the aggregate of specie and circulation plus deposits on January 1 of each year in both regions. The report and the table include all states from 1837 to 1840, but the 1841 numbers were incomplete for Pennsylvania, free banks in New York, and Connecticut. The percentage changes from 1840 to 1841 in the table are calculated on a same state basis, and the levels for 1841 are not reported.

The table tells a clear story. The Panic of 1837 fell heavily on northeastern banks. Excluding the BUS, northeastern banks held 37 percent of the banking system's specie and 48 percent of the system's circulation and deposits. Between 1/1/37 and 1/1/38, specie fell by 10.6 percent in the northeast vs. 5.6 percent in the south and west, loans and discounts by 14.8 percent in the northeast vs. 1.4 percent in the south and west, circulation by 26.4 percent in the northeast vs. 13.7 percent in the south and west, and deposits fell by 43.5 percent in the northeast vs. 32.7 percent in the south and west. In every measure the Panic was more severe for northeastern banks.

The Crisis of 1839 looks completely different. Between 1/1/39 and 1/1/40, the banking system as a whole sustained a much larger drain of specie, from \$43 million to \$34 million. This internal drain was not accompanied by a large flight of specie.¹⁹ The specie drain from the banking system was caused by an overall collapse of the banking system in the south and west, but not in the northeast. Banks to the north and east of New York City did not suspend payments in 1839. Between 1839 and 1840, specie holdings fell by 5.7 percent in the northeast vs. 25.0 percent in the south and west, loans and discounts by 5.8 percent in the northeast vs. 11.0 percent in the south and west, circulation by 23.2 percent in the northeast vs. 21.4 percent in the south and west, and deposits fell by 5.8 percent in the northeast vs. 27.6 percent in the south and west. In every measure but circulation, the Crisis was much more severe for banks in the south and west than for northeastern banks.

The differential regional impact of the crisis were magnified in 1840. Although the numbers for January 1841 are incomplete, we can use data on a comparable sample of states to see that the pattern of southern and western collapse continued in 1840. In every measure, northeastern banks recover quickly during 1840. Banks in the south and west continue to suffer reductions in loans and discounts, specie, circulation, and most importantly, deposits. Deposits are the measure that best captures public confidence in the banks, and the public had utterly lost confidence in the banks in the south and west.

The money supply is a function of banks desire to make loans and individual willingness to hold assets in the form of specie, bank notes, and bank deposits. In Table 4, changes in the money supply are decomposed into its component elements: circulation plus deposits minus specie held by banks (the converse of specie held by the public). Between 1/1/39 and 1/1/41, this measure declined nationally by 22%. The southern and western banks account for 80 percent of the decline, fully 104 percent by the decline in their notes and deposits of southern and western banks, offset by a decline in specie holdings of the banks accounting for a 25 percent increase in the money supply. Declines in northern and eastern bank deposits and circulation account for only 20 percent of the decline in the money supply. If the contraction after 1839 was primarily a monetary phenomenon, then we have to explain why banks in the south and west were hit so hard.

International Forces

The evidence on southern and western banks casts some doubt on the hypothesis that international forces were the driving cause of the Crisis. "Since the problem [the Panic of 1837] originated in international affairs and was communicated through the cotton market, the pressure was felt first in the principal markets for cotton, New Orleans and New York." (Temin, p. 144). If the Crisis of 1839 was caused by international forces we would expect the brunt of the crisis to fall on the cotton centers of New Orleans and New York, as the brunt clearly did in 1837. Table

5 presents the detailed information for New York and Louisiana banks.²⁰ The Crisis of 1839 had a smaller impact on New York banks than the Panic of 1837. The largest difference is in specie holdings, which decreased by 37 percent between January 1837 and January 1838, but fell by only 11 percent between 1839 and 1840, and actually rose by 6 percent if we include the free banks in the 1840 total. In 1839, specie in the banking system as a whole fell by 22.5 percent, while specie in New York banks fell by only 11 percent. The picture is more mixed for Louisiana banks. Yet, in every measure but loans and discounts, banks in the south and west suffered smaller declines than Louisiana banks in 1837, and much larger declines in than Louisiana banks in 1839 (comparing Table 5 to Table 3). Unlike the 1837, the crisis of 1839 was not centered in New York and New Orleans.

What of the larger international picture? Bad harvests in 1838 and 1839 led to large grain imports, depletion of the Bank's specie reserves, and tightening financial markets. By July of 1839, interest rates on commercial paper had risen to 5.5 percent. The Bank Rate was raised from 4 to 6 percent in a series of steps. There can be no doubt that tighter conditions in Britain put pressure on cotton markets and made it more difficult for Americans to market their state bonds in London. Unlike 1837, however, the behavior of interest rates around the crisis indicate a domestic, rather than an international, credit crisis. The price of international exchange did not change in October of 1839, but domestic interest rates jumped significantly. While in May of 1837, international exchange jumped significantly and domestic rates fell.

The Bank of England did not move specifically against the American trade in 1839.²¹ It sought extra gold reserves through a loan from the Bank of France. Though the Bank Rate rose, the rate stayed lower than the market rate and the Bank significantly increased its discounts. Tooke's commentary on Bank policy in 1839 scathingly criticizes the Bank for running an expansionary policy. While Tooke credits grain imports and the Bank's desire to accommodate the American trade as the source of the specie outflow, he blames the Bank for not raising the Bank rate above the market rate and contracting, rather than expanding, Bank discounting.²²

Thorp's *Business Annals* classify every year from 1838 to 1843 as a depression year. He reports in 1839 that "Money tightens severely; gold crisis, April," the crisis that led to the Bank of England's loan from the Bank of France. Gayer, Rostow, and Schwartz speak of a "panic" in 1839, "The major cause of this panic was the drain of bullion to the United States in payment for the large quantity of American Securities then being imported."²³ The evidence supporting international forces as the cause of the Crisis of 1839 is circumstantial. Is there stronger evidence that domestic forces within the United States were at work?

State borrowing

The massive increase in state government involvement in canals, banks, and railroads in the 1830s has a prominent role in American economic history.²⁴ The timing, geography, and purpose of the investments is often not appreciated, however. Table 6 presents information on the amount of debt outstanding in each state in September of 1841, allocated by the year in which the debt was authorized from 1835 to 1841.²⁵

The first issue with state borrowing is timing. The table illustrates the tremendous amount of borrowing in 1837, 1838, and 1839 (much of the 1837 borrowing authorized after May). These numbers alone cast substantial doubt that the Panic of 1837 was regarded as the beginning of a serious economic downturn by most of the country. States went right on borrowing, Panic or no Panic. Few states borrowed heavily in 1836 at the height of the economic boom, when land sales peaked. The extraordinary land sales of 1835 and 1836 were not caused by the state investments, in all likelihood the land boom changed the fiscal outlook of the western states and stimulated state investment.

The second issue with state borrowing is geography. Before 1835, 80 percent of the borrowing is in five states: New York for the Erie Canal, Pennsylvania for the Main Line and State Works, Maryland for the Chesapeake and Ohio Canal and the Baltimore and Ohio Railroad, Ohio for its canals, and Louisiana for investments in banks.²⁶ Between 1835 and 1841 these

states account for only 35 percent of state borrowing. State investment in the south and west exploded in 1837. In 1835 and 1836, the federal government sold over 30 million acres of land in the south and west, dramatically increasing the fiscal resources of the public land states.²⁷ The federal government sold enough land in Indiana in 1836 alone to double the number of taxable acres in that state. Every public land state shared somewhere between 3 and 5 percent of the proceeds of federal land sales within its borders. In 1836, almost \$25,000,000 worth of land was sold, representing a bonus to the states roughly \$1,000,000 in fiscal 1837. The bulge in federal revenues produced a large surplus and the federal government promised to distribute to the states \$37,000,000 in quarterly installments spread over 1837. The distribution was on the basis of representation in Congress, so that the largest total grants went to the populous non-public land states, while the largest per capita grants went to the sparsely settled public land states. Illinois received roughly \$315,000 from its share of land sales within its borders, and \$358,439 from its surplus distribution (only three of the four quarterly payments were made).²⁸

This transitory income certainly stimulated state investments, but it was probably less important than another aspect of the land boom. Every public land state entering the union after Ohio was forced to agree to a five year moratorium of the taxation of land sold by the federal government. Land sales in Indiana and Illinois in 1836 not only increased the amount of current revenues those states received, those states could also expect that double the number of acres taxed in 1836 could be taxed in 1841. The land boom presented states with a significant increase in their permanent income. Most of the increase would not come online for five years. Rationally, they borrowed against that income.

The rapid expansion of state investment was not caused by supply side factors in the capital market: interest rates did not fall nor did states that had been trying to borrow money suddenly find they were able to. Indiana and Illinois had been considering transportation improvements since the 1820s, and now found it fiscally feasible to undertake investments. New York, Pennsylvania, Maryland, and Ohio all expanded their already substantial investments.

Southern states continued to invest in banks. Both domestic and foreign lenders were willing to accommodate these new state investments. By 1839, interest rates were beginning to rise and American borrowers were having more difficulty placing their bonds in Britain. The investment boom was not driven by the supply side.²⁹

While the land boom clearly fueled increasing state investments, state investments probably fueled the land boom after 1837. Transportation improvements in the northern states increased land values and, with the price of public land fixed at \$1.25 and acre, stimulated land sales.³⁰ The continuation of the land boom in the northwest in 1838 and 1839 surely owed something to canal and railroad construction.

The overall recovery of the economy was driven, in part, by state expenditures. "The recession of 1837-38, therefore, was brought to a speedy end by the restoration of the capital flow from Britain to the United States and by the expansion of demand stemming from the rise in state government expenditures." Temin p. 151. Increased capital flows from Britain were a direct response to state bond issues. The direct fiscal impact of state spending was probably small, \$30 to \$40 million of annual expenditures in an economy of over \$1.5 billion, but the continued investments were both a reflection of and an element sustaining people's confidence in the boom. Increasing state expenditures stimulated the economy in other ways as well.

State Investment in Banks

The third issue with state borrowing is purpose. State investment in banks typically receives less attention than investments in canals and railroads. Although many northeastern states actively invested in and promoted banks in the 1810s and 1820s, by the 1830s state involvement in bank investing in the northeast had subsided.³¹ The vast majority of the country's banks were located in the northeast: out of the 626 banks and branches reported by the Treasury Department in 1837, 476 were located to the north and east of Pennsylvania.³² Most states in the south and west had fewer than 10 banks. Bank capital, however, was more evenly distributed

regionally, \$129 million in the northeast and \$128 million in the south and west. Many states in the south and west had close associations with their banks. There were "State" banks in North Carolina, South Carolina, Alabama, Mississippi, Kentucky, Tennessee, Missouri, Arkansas, Indiana, and Illinois.³³ These banks were state chartered private banks, with varying degrees of state government interest and control. All were closely associated with state finances and fortunes in the eyes of the public.³⁴

The magnitude of state investment in banks is shown in Table 7, which reports all debt authorized by state governments to invest in banks.³⁵ States invested over \$66 million in banks, all of it in the south and west, providing roughly half of all the bank capital in southern and western states. There was a symbiotic relationship between these states and their banks, since the banks typically were the depository for state funds and one of the major investments of the state government (school funds, for example, were often invested in bank stock), while the state governments were typically the largest depositor and investor in the banks. The banks also came to hold significant amounts of state bonds. Table 8 shows bank holdings of "stock" from 1837 to 1841. Southern and western banks increased their holdings of state bonds from \$5 million on January 1, 1837 to over \$15 million on January 1 of 1840.

The types of banks created by the states varied across regions. Most southern state investment was in land or property banks, rather than commercial banks.³⁶ Modeled on the colonial land banks, stock could be purchased by a mortgage on the lands of the stockholder, usually limited to half the value of the lands mortgaged. Stockholders were able to borrow from the bank to buy new lands as well. The state purchased stock by issuing bonds or by guaranteeing the bonds of the individual banks. The bank's liquidity came from sale of the state bonds; their assets were the mortgages. The banks were responsible for debt service on the bonds. These banks were thought to be safe investments, since the value of the mortgaged lands stood as security for the bonds. Although these banks were closely tied to cotton, they were extremely susceptible to declines in the value of land.

Two northern states, Michigan (1837) and New York (1838), experimented with free banks. While state governments did not invest in these banks, the banks did invest in state government bonds. The note issue of free banks was backed on state bonds. These banks were extremely susceptible to declines in the prices of state bonds.³⁷

In 1837 and 1838, state governments invested over \$20 million in bank capital. The investments were concentrated in a handful of states: Illinois, Indiana, Missouri, Arkansas, Mississippi, and Alabama. Collectively, this represented a substantial increase in bank capital in those states, and provided banks with liquid assets during and after the Panic of 1837. In Alabama and Mississippi, bank investments were made explicitly to deal with the banking crisis. States provided direct fiscal stimulus by building canals and railroads and shored up the banking system. States also extended credit to a number of large investment banks in the northeast between 1837 and 1839. To understand how this happened, we need to look more closely at how states borrowed.

Issuing Bonds

While each state marketed bonds in its own way, there were similarities in all states. Enabling legislation usually authorized the Governor and/or a administrative agency, like a canal or internal improvement board, to issue bonds under certain restrictions. The agents placed the bonds, sometimes with individuals, sometimes with banks. Bonds were sold for cash, on commission, or on credit. Commission sales involved a middleman, usually a bank, who would maintain a small inventory of bonds to be replenished as the bonds were sold and proceeds turnover to the state. In a credit sale, all of the bonds were turned over to the middleman immediately, and then the state received payment over a specified period of time. Banks often sold the bonds, or pledged them as security for other loans, long before they paid the states. Early in the 1830s, state bonds typically sold for a premium, and were easy to market. In 1838, as the market for bonds tightened, states found it difficult to sell bonds at par, and a number of

banks came forward and suggested that states sell bonds on credit.

The bank most notoriously involved in credit sales was the Morris Canal and Banking Company of New Jersey. In 1838 and 1839, the state of Indiana made credit advances to the Morris Bank including \$1,000,000 in internal improvement bonds payable in sterling in London, a \$1,000,000 issue to increase the capital of the State Bank, and \$1,000,000 in internal improvement bonds. For the last advance the Bank was to pay \$100,000 a month, beginning in September 1839. In August 1839, the Morris Bank defaulted.³⁸ Several other banks and individuals also defaulted in 1839. The "suspended" debt was estimated at \$3,381,000; of which \$2,146,000 was for bonds issued to the Morris Bank.³⁹ The Morris Bank also defaulted on credit sales with Michigan. The Phoenix Bank of New York defaulted on credit sales with Arkansas. Illinois had trouble with several banks. The BUS was a partner with the Morris Bank in Indiana and Michigan, as well as taking bonds on credit from Mississippi.⁴⁰

The use of credit sales was not illegal or inappropriate, but the banks often stretched the limits of propriety. In 1837, Michigan authorized a bond issue of \$5,000,000, sold through the Morris Bank on commission. In the spring of 1838, the Morris Bank, in partnership with the BUS, suggested to the state that the banks take the entire remaining bond issue at once, and remit \$250,000 to the state quarterly until the balance had been paid. Morris was responsible for one quarter of this commitment, the BUS three-quarters. The state agreed, and in May 1838 advanced the remainder of the \$5,000,000 in bonds to the banks. The state was surprised to find in July of 1839 (the state's first interest payment was due then, the banks paid the January interest), that the banks demanded interest on the entire \$5,000,000, even though the state had received only \$1,590,000. The state auditor, who had taken \$48,000 to New York to meet the payment, was embarrassed to the tune of \$102,000. "Feeling a strong desire to preserve the faith and credit of the state inviolate, without reference to the right of the Morris canal and banking company to claim interest on the whole sum, but with the sole reference to the rights of the then

holders of the bonds, I was obliged, at much considerable extra expense to the state, to go into the money market and purchase available *cash* funds to supply the deficiency then existing.”⁴¹ By the summer of 1839, all of the Michigan bonds issued to the Morris Bank had been transferred to the BUS and either sold or hypothecated by the bank. When the Morris Bank defaulted on the state in the fall of 1839, and the BUS defaulted in 1841, the state was righteously indignant.⁴² Michigan defaulted in 1842, and repudiated the bonds for which it had never been paid.

In 1837, 1838, and 1839 credit sales handled by these nascent investment banks amounted to over \$20 million in state bonds of the newest and most financially undeveloped states.⁴³ At the same time, more established states like Ohio, New York, Massachusetts, Pennsylvania, and Maryland were borrowing heavily. This was an enormous amount of debt to put on the market in a very short period of time. When the banks over reached, and ultimately defaulted on their obligations to the states, they would set in motion the events that became the Crisis of 1839. But first we must come to understand how the Bank of the United States came to be counted among this group of highly speculative financial organizations.

The Bank of the United States of Pennsylvania and The Crisis of 1839

In 1836, the Bank of the United States lost its federal charter and obtained a charter from the state of Pennsylvania. Over the next three years the BUS would transform itself into what amounted to a universal bank on the brink of bankruptcy. The first change in Bank policy began in 1836 when the BUS wrapped up its business as a federal bank and sold off its branches. Several were purchased by local bankers, who obtained state charters. The Philadelphia bank financed the purchase by holding the obligations of the new owners. By doing so, the BUS of Pennsylvania became a large investor in banks throughout the south and west.⁴⁴

When the Panic hit in May of 1837, the BUS had not liquidated its holdings in these

banks. Declining cotton prices were a cause of the Panic and a worry for the BUS. After the Panic had begun, when foreign exchange reached its highest points in New York, the BUS entered the market and began advancing its own credits to assist in the marketing of the southern crop and its shipment to England. By issuing its own "post-notes" -- "interest-bearing bonds to bearer, maturing within ten to eighteen months," many payable in sterling in London -- the BUS was able to ease credit conditions in the US and obtain the resources with which to finance cotton shipments. The movement into the cotton market was fraught with peril for the BUS, since it was, in effect, concentrating the risk that cotton prices would fluctuate in its own hands, rather than dispersing that risk through a succession of intermediaries, but Biddle felt the reward was worth the risk.⁴⁵

The BUS was in a particularly advantageous position to undertake these operations. As Table 3 shows, from January, 1837 to January 1, 1838, the BUS actually increased its specie holdings by 42.9 percent and its deposits by 12 percent. Specie would increase by a further 10 percent in 1838 and deposits by a whopping 159 percent. There was a "flight to quality" in the Panic of 1837, and the BUS was the primary beneficiary of the loss in confidence in the banking system. Since exchange on London was selling for such a large premium in the summer of 1837 the BUS was able to borrow money at negative interest rates. They could sell post-notes that paid 7.5 percent, payable in London, at a 10 percent premium, for an immediate gain of 2.5 percent.⁴⁶

The post-note operations would eventually require Biddle to obtain funds in Britain to redeem the notes. With the proceeds of the post-note sales he entered the market for southern cotton, shipping cotton to his agent in Liverpool, Humphreys and Biddle.⁴⁷ Since international markets for cotton had become deranged, Biddle could buy cotton at low prices and ship it to England on his own account, or he could discount sterling bills drawn on Humphreys and Biddle and realize the exchange premium. Biddle also encouraged, and provided financing for, other banks to enter the cotton speculation.⁴⁸ The revival of the cotton markets in the United States in

1837 and 1838, eased financial conditions throughout the country. Higher cotton prices also helped southern banks.

Selling cotton could provide Biddle the resources to redeem the post-notes. But there was an additional risk, if cotton prices remained low or went lower in Britain, the Bank and Biddle could lose money. Biddle had to be able to hold on to the cotton until the price rose, and state bonds played a role here. The cutting edge of the BUS's operation was the establishment of an agency in London to handle the Bank's financial concerns, headed by Samuel Jaudon, and agency in Liverpool – Humphreys and Biddle (the later Nicholas Biddle's son) – to handle the marketing of the Bank's cotton. Humphreys and Biddle "were to sell the cotton, and Samuel Jaudon, in the London money market, who was to raise the funds to hold the cotton until the price was right." "His [Jaudon's] function was to get money from British investors for the purpose of holding cotton and raising its price to British buyers. His capital was a trunkful of bank stocks, bonds, and other securities which he sold if possible or used as collateral."⁴⁹ In 1838, Biddle held cotton until prices rose in October, realizing a substantial profit, and encouraging him to speculate again the following year. Unfortunately, other southern banks that had participated in the speculation had not consigned their cotton to Humphreys and Biddle. When their agents sold their cotton earlier in the season, it was often at a loss.⁵⁰

Biddle could also meet obligations in London by selling state bonds. The avowed purpose of the BUS's London agency was to create a market for American stocks. In 1837, the BUS purchased an ownership interest in the Morris Canal and Banking Company (what Smith calls the BUS's security affiliate) and, as we have seen, in partnership with Morris acquired Indiana and Michigan bonds on credit at advantageous terms.⁵¹ In 1838, Biddle, acting for the Bank, agreed to take all \$5,000,000 in Mississippi bonds issued to create the Union Bank of Mississippi, again on advantageous credit terms (the BUS would honor this obligation in full). The terms of the bank's charter with the state of Pennsylvania required the bank to loan money to the state, on terms that would turn out to be advantageous to the state. Most of these bonds

would find their way to Europe. Table 9 gives a brief abstract of the assets and liabilities of the BUS in 1836, 1839 and 1841.⁵² The stock account is private corporation stocks, mostly bank stocks. State bonds are separately reported. In 1836, the bank held no state bonds or private corporation stocks, in 1839 the bank held over \$5 million in state bonds, and by 1841 over \$20 million in state bonds.⁵³ At the time of its liquidation, state bonds were the largest item in the bank's assets, accounting for almost a third of the bank's portfolio.

By April 1839, the Bank of the United States was in trouble. Its speculations in the cotton market in 1839 would not turn a profit, as they had in 1838. The bank continued to issue post-notes, despite the fact that the bank was no longer realizing profits from the exchange premium. The bank suspended specie payments in October of 1839. It needed funds in Europe, and this long quote gives an idea of how state bonds were used to meet that need:

Three large foreign loans temporarily solved Jaudon's problem in the latter part of 1839. In October a loan of £800,000 was secured through Denisons in England. It ran, part for 18 and the rest for 36 months, bore a nominal rate of of [sic] interest of 7 3/4 and 8 per cent, actually yielded to the purchasers of the bonds about 10 per cent, was secured by \$2,662,000 of Pennsylvania 5's, \$900,000 of Michigan 6's, and \$880,000 of Mississippi 5's. A month later a loan for £900,000 was secured through Rothschilds. One half of this matured on October 15, 1841 and the other half a year later. The nominal rate of interest was 6 per cent. Pledged as security were \$1,325,906 of Pennsylvania 5's, \$1,570,000 of Mississippi 5's, \$316,000 of Indiana 5's, \$108,000 of Illinois Sterling 6's, \$250,000 of Illinois dollar 6's, and \$1,431,000 of Michigan Sterling 6's. After about four months of negotiation, Jaudon completed arrangements in January 1840 for a loan of 10,000,000 guilders through Hope and Company of Amsterdam. This 5 per cent loan was secured by \$290,000 of Pennsylvania 5's, \$200,000 of Maryland 5's, \$558,000 of Mississippi 5's, \$750,000 of Illinois 6's, and \$952,000 of Michigan 6's."⁵⁴

Jaudon used \$12,192,906 of state bonds as collateral for these loans. The amounts for Michigan and Mississippi account for 60 per cent of each state's borrowing in the late 1830s. In 1841, when the Bank went into liquidation, it would have over \$14 million in bonds pledged as security for loans in Europe.

Bray Hammond's *Banks and American Politics* casts Biddle's attempt to corner the cotton market in 1838 and 1839 as the primary reason for the Bank's downfall. Hammond

argues that Biddle did this to protect southern banks and the national economy. When the market for cotton broke in 1839, Hammond maintains that the Bank was carried away and suspended payments in October of 1839.⁵⁵ Walter B. Smith's *The Economic Consequences of the Second Bank of the United States* portrays Biddle as involved in the cotton market for several reasons, including protection of the Bank's security investment in southern banks. Smith is less impressed by the Bank's cotton operations. It is doubtful that the cotton speculation alone could have brought down the Bank, losses in 1839 were only in the neighborhood of \$900,000.⁵⁶ Smith argues that the financial policies of the Bank since 1836 had led it progressively into a more precarious position and speculative operations. By taking ownership positions in the Morris Canal and Banking Company and other banks, the BUS acquired long term illiquid assets. By acquiring large holdings of state bonds through credit sales at favorable prices, the Bank acquired what were liquid assets in 1838 and early 1839, but whose liquidity depended on the credit worthiness of the states. Post-notes issued in 1837 and later had to be redeemed as they matured, and since many had been used to settle accounts in London, Biddle needed liquid resources available in Europe. Possessing cotton was the most direct way to meet obligations in London, but that required access to liquidity to hold the cotton. "The struggle for liquidity after 1836 led the Bank to acquire stocks (on what sometimes looked like a moderate down payment) and mortgage them in London for liquid Sterling assets."⁵⁷

By April 1839, Table 9 shows the BUS was no longer a commercial bank. Its primary assets were state bonds and the stock of private banks, rather than commercial bills and other high quality short term notes. Its primary liabilities post-notes and foreign debts, not its circulation. The Bank's quest for liquidity was ultimately unsuccessful. Throughout 1839 the Bank sold post-notes and foreign bills in the United States in an attempt to build up its specie reserves. The continuing issue of post notes in the summer of 1839 was suicidal. It put the fate of the BUS in the hands of its creditors in New York and Boston. Smith reports that post-note issue reached over \$9,000,000 on September 30, 1839. New York banks presented large draft to

the BUS on October 8, and the next day there was a run on the Bank, which suspended on October 9. The Crisis spread quickly throughout the country, but only banks in the south and west would join in the suspension.⁵⁸ That Jaudon was able to obtain large loans in Europe on the security of state bonds in late 1839 and early 1840, indicates that the Europeans were not pressuring the Bank. The sources of pressure on the BUS in October were in the United States, and were the result of the large amount of post-notes and other bank obligations held by other American banks.

The Crisis and the Deflation

We are now ready to examine the Crisis of 1839 and the deflation that followed, and to compare events in 1839 to those in 1837. In 1837, financial conditions tightened in Britain, the Bank of England raised the Bank rate, and the market for cotton weakened, even as the Surplus Distribution and the Specie Circular disrupted financial markets in the United States. Panic hit in May and banks suspended throughout the country. Yet forces were at work to bring the country quickly back. State governments, buoyed by the land boom, already had plans in the works to increase expenditures on canals, railroads, and banks. The land boom resumed in late 1838, particularly in the northern states, as the Specie Circular was repealed and construction on new canals and railroads pushed ahead. The Bank of England began easing conditions in Britain even before the Panic, and came to the aid of New York banks with a shipment of £1 million in specie in the spring of 1838. The Bank of the United States eased an international payments crisis by issuing post-notes redeemable in London and supporting the market for cotton. States in the west and the south pumped \$20 million of new capital into their banks. By mid-1838, trade and commerce had recovered. States were borrowing at a record pace, and for the first time ever states in the far west were making large investments in banks, canals, and railroads. Their bonds flooded markets in New York and London, using the facilities of a new group of investment bankers, headed by the Bank of the United States.

There were weaknesses as well. Southern banks had not completely recovered from 1837. The Bank of the United States was over extended and illiquid. New free banks had sprung up in Michigan and New York whose currency was backed by state bonds. And European investors were acquiring a huge amount of state government debt, on the advice of the new American bankers.⁵⁹ British harvests were small in 1838 and 1839, and grain imports weakened sterling and drew down the specie reserves of the Bank of England. Rates on commercial paper in London rose, as did the Bank Rate. American bonds became more difficult to market. The Morris Bank found it more difficult to dispose of bonds they had acquired on credit from state governments. In July of 1839, the Morris bank defaulted on its obligation to Indiana, in the fall on its obligations to Michigan. The bank's failure had several severe and immediate effects:

1) Construction on transportation projects in Indiana came to a halt in August of 1839, in Michigan in late fall, and in Illinois in early 1840. With the end of canal and railroad construction came the end of the land boom, and the end of the land boom brought a sharp fall in land prices. Indiana is the only state that actively assessed property and reported their assessments in a way that enables us to retrieve the assessed value per acre of land. In Indiana, assessed value per acre fell from \$9.87 an acre in 1837, to \$6.20 an acre in 1841, to \$3.67 an acre in 1843.⁶⁰ The fall in land values was devastating. It hit new land owners in the west and south hard. Foreign creditors, who had seen land as the ultimate collateral for state debts, began losing faith in the western states.

2) Michigan and Indiana made semi-annual interest payments with the proceeds of the loans. When the Morris Bank defaulted, the states had no readily available funds to make the January 1840 interest payment. Both states raised taxes and were able to find enough money to make their interest payments in 1840, but Indiana defaulted in July 1841 and Michigan in January 1842. Default in these states was a direct result of the banks' defalcation. As Indiana governors pointed out several times, the amount due from the banks would have enabled the state to meet its interest payments for an additional four years without recourse to higher taxes.

3) States that had not been paid for bonds they had issued, began discussing the repudiation of the bonds for which they had never been paid. This is ultimately what happened in Michigan and Arkansas. Those discussions, even in states that did not repudiate, killed the market for western state bonds. Table 10 reports on bonds prices for Indiana, Illinois, and Pennsylvania bonds in 1839. In October and November, Indiana and Illinois bonds declined sharply as it became clear that western transportation projects were trouble. Banks, like the BUS, the State Bank of Indiana, and the State Bank of Illinois, that held large portfolios of western state debt, were in trouble.

The bank holding the most state government bonds was the Bank of the United States. Biddle, now retired, came to the defense of the bank and argued that forces in Europe were at the root of the problem. But, "The events of 1839 were viewed far less charitably in Boston, New York, and Washington. In these quarters the blame was placed squarely on the bank. The root of the trouble was thought to have been the facilities which the Bank provided for the sale of bonds."⁶¹ The BUS was forced to suspend convertibility in October because of pressure from domestic banks and creditors.

During the Crisis, banks throughout the country came under pressure, but banks in the north and east did not suspend convertibility. The price of international exchange stayed constant, Table 2. There was a domestic credit crisis: rates on domestic commercial paper New York and Boston rose to 30 percent in October, but the crisis itself was short lived. By June of 1840 rates were back down to 6 percent. Yet banks in the south and west remained suspended, the money supply continued to shrink, and prices continued to fall. Unlike 1837, no forces rallied to end the crisis. The Bank of England did not have a contractionary policy to relax. The Bank of the United States was headed for receivership, and the exchange premium that allowed it to issue post-notes at a profit had long since disappeared. The states had no intention of investing yet more money in their banks, they were shut down their canal and railroad projects, and seriously considered default and repudiation.

Most important, the public rapidly lost confidence in the banking system in the south and west. Deposits are the best measure of public confidence in the banks. Changes in circulation are problematic when convertibility is suspended; loans and discounts measure the confidence of the banks; and specie holdings, while important, are a better measure of the liquidity than confidence. We have already seen that the most of the decline in the money supply occurred in banks in the south and west. Was declining confidence in the banks associated with the fiscal crisis of the states?

Table 11 ranks states by the decline in each of four banking measures: specie, loans and discounts, circulation, and deposits.⁶² Table 12 provides three simple, bivariate analyses of the data. The first panel reports the results of a regression of the change in each measure on the per capita debt in each state in 1841. The second panel of the table tests the difference in means between the states that defaulted and the states that didn't. The third panel of the table tests the difference in means between the states with close associations between the states and the banks, and those states without a close association. Remember, the data covers January 1, 1839 to January 1, 1841. No states defaulted until July of 1841, so none of these results are produced by default.

There is no appreciable difference in the behavior of circulation or of loans and discounts in the different states. There is a marked difference in the change in specie and in deposits in states with higher debt, that defaulted, or in states where there was a close association between the state government and the banks. The differences are quite large. Banks in states that defaulted lost 40 percent of their specie and 55 percent of their deposits between January 1839 and January 1841, while banks in states that did not default lost only 17 percent of their specie and 30 percent of their deposits. The average per capita debt in the defaulting states was about \$35. The coefficients in the upper panel suggest that defaulting states should have roughly 21 percent lower specie reserves and 18 percent lower deposits, compared to states with no debts, in line with the difference in means results.

When the comparison is between states with governments that are closely associated with their banks versus states that are not, the differences are even wider. Banks in states with close association experienced declines in specie of 35 percent and of deposits of 54 percent, in line with the defaulting states. Banks in states without close association experience declines in specie of 14 percent and of deposits of 18 percent. The decline in deposits for states without close association is much lower than for the non-defaulting states. Banks in states with a close association of state governments and their banks suffered much larger declines in deposits than other states.

Conclusions

This paper extends rather than replaces Temin's frame work. International forces were very important in 1838 and 1839. The amazing growth in state borrowing brought American and British credit markets closer together. The transformation of the Bank of the United States made it more dependent on foreign creditors, just as it came to hold a larger share of its assets in state bonds. There was a credit crisis in Britain in the spring and summer of 1839, and it did have a chilling effect on markets for American cotton and on financial markets in general.

Is this why the BUS suspended in October and why the contraction and deflation that followed were so deep and long lasting? In a word, no. When we look carefully at the impact of the Panic of 1837 and the Crisis of 1839 on the American banking system, we see two completely different profiles. Events in 1837 conform nicely to the idea that international forces were the primary cause of the crisis. Events in 1839 look completely different. The Crisis was not centered in the centers of international trade, New York and New Orleans, but on the frontiers. The crisis was short lived in the north and east, but continued in the south and west into 1841 and 1842, when the default of nine state governments brought the entire financial system, international and domestic, to its knees. Temin persuasively argues that the contraction after 1839 was not in production but in prices. It was primarily a monetary phenomenon. The

money supply declined between 1839 and 1841 because depositors lost confidence in southern and western banks. They lost confidence because banks in those states were so closely associated with state government finances, and state government finances were in a shambles in the south and west. Eight states and the Territory of Florida defaulted in 1841 and 1842.

Americans did not stop building canals and railroads or chartering banks. The partisan debate over banking did become more polarized. The defalcation of the investment banks did nothing to help the image of bankers in general, and the widespread failure of southern land banks crippled banking in the south for the next two decades. What Americans, and their state governments, did learn was to delimit and curtail the discretionary ability of states to create and fund enterprises, including banks. This resulted in the adoption of free banking acts, and their counterpart, general incorporation laws. By the early 1850s, constitutional provisions in many states prohibited incorporation by special legislative charter. Changes in state constitutions limited state and local government debt, investment in private corporations, and established procedural safeguards for the debt that was issued. These lessons learned in the 1830s and 1840s were about the interaction of state governments and the economy. These changes were internal, nothing was done to alter America's relationship with the international economy,

Since the end of the War of 1812, Britain had become more closely tied to the United States, and in 1839 it paid a steep price for the association. Britain had invested enormous amounts in the various projects of the states, through the intermediation of a group of American banks embarking on new careers as investment bankers. The beginning of the crisis occurred when the most speculative of those banks, the Morris Canal and Banking Company, defaulted on its obligations to Indiana in the summer of 1839. Nicholas Biddle and the Bank of the United States were the primary conduit for moving state bonds to Europe. State bonds played an integral role in Biddle's scheme to support American cotton and security markets, a scheme that ultimately bankrupted the Bank. Was the failure of the Bank of the United States the reason the contraction and deflation were so deep and lasted so long?

The Bank's problems did not cause the collapse of the market for state bonds, instead the increasing amount of state bonds in the Bank's portfolio made it dependent on the state bond market. As the value of Indiana, Illinois, Michigan, and Mississippi bonds fell in late 1839, the value of the BUS portfolio fell as well. States were in financial trouble for a more fundamental reason: declining land values. With the end of construction in the northwestern states, land values began to fall. As land values fell, security for the mortgages of southern land banks evaporated. As states in the west and south faced the possibility of default or repudiation, and the value of their bonds fell, free banks in Michigan and New York, with their state bond backed currency, came under pressure. This was an American cycle of events.

As the American economy spiraled downwards, it took Britain with it. As early as 1837, Henry Clay pointed out that European countries were largely suffering in proportion to "... the degree of their connection with the United States." In 1954, Matthews concluded: "... it is in the nature of things futile to try and draw any hard-and-fast line assigning to either country causal primacy in the cycle as a whole or in its individual phases. But enough has been said in the present chapter to indicate the powerful nature of forces making for instability from within the United States in this period."⁶³

Endnotes

1. Richardson, *Messages and Papers of the Presidents*, Vol. 2, p 1542. This is the version of Richardson "with additions." In the original, 1896 version, Van Buren's message appears in Volume 3, not Volume 2.
2. Henry Clay argued, on September 25, 1837, that economic distress had been caused by "1st. The veto of the bank. 2nd. The removal of deposits, with the urgent injunction of Secretary Taney upon the banks to enlarge their accommodations. 3rd. The gold bill, and the demand for gold for foreign indemnities. 4th. The clumsy execution of the deposit law [surplus distribution]; and 5th. The Treasury order of July, 1836 [Specie Circular]." Thomas Hart Benton, ed., *Abridgement of the Debates of Congress from 1789 to 1856* Vol. 13, (New York: D. Appleton and Co.), pp. 404-5.
3. For a discussion of how banking and other economic issues shaped the debate between the parties see Holt, *Political Crisis*, pp 17-38; Holt, *Whig Party*, pp. 76-82; Shade, *Banks*, pp. 40-59; and McCormack, *Party Period*, pp. 162-166.
4. The first quote is from McGrane, *Panic of 1837*, p. 1; the second from Berry, *Western Prices*, p. 433.
5. Figure 1 comes from Gates, *History of Public Lands*, Appendix B, p. 802; Figure 2 from Smith and Cole, *Fluctuations in American Business*, Table 45, p. 158; and Figure 3 Foreign trade from Smith and Cole, *Fluctuations*, Table 18, p 73, and British Exports from Matthews, *Trade Cycle*, Table 5, p. 45.
6. Land sales were higher in 1839 than any other year between 1820 and 1850 except for 1835 and 1836.
7. See Paul Rhode's unpublished working paper on Gallman's worksheet estimates. Presented at the NBER Summer Institute 2000, but not for attribution. Temin, *Jacksonian Economy*, p. 157.
8. Temin makes this point in greater detail in "Anglo-American Business Cycle."

9. Temin has an excellent survey of the historical literature. For examples, see Schlesinger, *Age of Jackson*, Pessen, *Jacksonian America*, Remini, *Bank War*, Sellers, *Market Revolution*, Meyers, *Jacksonian Persuasion*, and Gatell, "Sober Second Thoughts" and "Spoils of the Bank War."

10. There is no complete and reliable estimate of foreign holdings of American state bonds. Estimates for Pennsylvania suggest 70 percent of its debt was held overseas in July 1842, McGrane, *Foreign Bondholders*, p. 71. Scheiber, *Ohio Canals*, appendix I, pp. 371-79, studies the distribution of several bond issues. Foreigners held more than 50 percent of every issue. The BUS alone moved at least 15 million in bonds to Europe after 1837, see below.

11. Between 1830 and 1840 exports of raw cotton accounted for 48 percent of all American exports and 59 percent of American merchandise exports, *Historical Statistics*, series U 187, U 191, and U 276. Matthews, *Trade-Cycle*, reports that in 1838, total non-corn imports into Britain were £67.1 million, while cotton imports were £14.3 million. Corn imports reached £11 million in 1839, the largest imports between 1829 and 1842, Matthews, *History of Prices*. See Woodman, *King Cotton*, for a description of cotton market financing.

12. Clapham, *Bank of England*, vol II, p. 132.

13. In 1834, the United States reduced the gold value of American coins, while still maintaining a "nominal par" with respect to the pound of \$4.44 $\frac{4}{9}$ per pound sterling. The effective par became \$4.8865 per pound sterling. The Act is described in O'Leary, "The Coinage Act of 1834."

14. By the early 1830s the Bank of England was doing little business in discounts in London, although it was increasing its discounts at branches elsewhere. The London bank, instead, financed the activities of bill brokers, like Overend, Gurney and Company, who maintained large lines of credit secured by government securities and bills of exchange. When the Bank Rate fell below the market rate, however, borrowers would come directly to the bank, as happened in 1837 and 1839. Clapham, *Bank of England*, pp. 135-139.

15. Clapham, *Bank of England*, p. 153. See Hidy, *Barings*, as well, pp. 205-24.
16. Monthly prices for short-staple cotton at New Orleans can be found in Table 41 of the appendix to Gray, *History of Agriculture*, Vol. 2, p. 1027.
17. There is a large literature on this question, see Timberlake, *Central Banking*, "The Specie Circular," "The Specie Standard," and "Specie Standard: Reply;" Scheiber, "Pet Banks;" Macesich, "Sources of Monetary Disturbances;" and of course, Temin, *Jacksonian Economy* and "Economic Consequences."
18. The value of grain imports rose from £.3 million in 1836 to £11.0 million in 1839. Matthews, *Trade Cycle*, p. 30.
19. Temin, p. 186-7, reports the Comptroller's estimate of specie in the country was \$88 million in 1837, \$87 million in 1838, \$83 million in 1839, and \$80 million in 1840; and his constructed estimates as \$81 million in 1837, \$96 million in 1838, \$93 million in 1839 and \$94 million in 1840. There was no apparent external drain.
20. Rousseau shows in much more detail the loss of specie by New York banks around the months leading up to Panic in May of 1837. The numbers for New York duplicate his results from an aggregate perspective.
21. Smith, *Economic Consequences*, p. 217 suggests that the Bank of England was not happy with the BUS, however.
22. Tooke, *History of Prices*, pp. 73-74, writing in 1840, thought there were three reasons for the specie drain, in descending order of importance:

1. The large importations of foreign corn, the computed amount of which, in the two years, was to the amount of about ten million sterling [it was actually £11,000,000 in 1839 alone].

2. The state of financial and commercial relations with the United States of

America.

By the financial state, I mean our over-importation of American securities, which were created chiefly by the bonds of the separate states, and by the United States Bank, and by the other American banks and joint stock companies.

By the commercial state of our relations with that country, as having contributed to the recent derangement, I mean, not only a renewed tendency which there might be to an excess of mere mercantile credits, but mainly the peculiar circumstances of the cotton trade.*

3. The state of credit on the continent of Europe.

The footnote refers to the “unjustifiable and extravagant operations of the United States Bank... in making advances on cotton to the planters,... with a view of withholding it from the manufacturers in this country.”

23. Gayer, Rostow, and Schwartz *Trade*, pp. 297. Jenks, *Migration*, p. 95-6, gives a succinct summary of all the problems in Europe in 1839.

24. This history goes back to Callender, “Banks and Corporations,” through Goodrich, *Government Promotion*, and the work sponsored by the Committee on Research in Economic History. The default crisis is the subject of several studies. The most thorough and authoritative is McGrane, *Foreign Bondholders*. See Ratchford, *American State Debts*, Scott, *Repudiation of State Debts*, English, “Sovereign Default,” Sylla and Wallis, “Anatomy,” and Wallis, Grinath, and Sylla, “Debt, Default, and Revenue Structure.”

25. This data is analyzed in more detail in Wallis, Grinath and Sylla, “Debt, Default, and Revenue Structure” 2001.

26. Borrowing by some states, notably New York and Ohio, is understated in the table, since a considerable amount of their canal debt had been repaid by 1841.

27. The impact of the land boom on state finances is the subject of Wallis, Grinath, and Sylla, "Debt, Default, and Revenue Structure."

28. Temin correctly emphasizes the fiscal impact of the Surplus Distribution on the states, but the Surplus was, by itself, small compared to state borrowing. Because the distribution was based on population, most of the money went to the populated east, while state expenditures were growing rapidly in the south and west. See Bourne, *Surplus Revenue Act*.

29. Temin, p. 83, describes interest rate movements in the 1830s: "... it is hard to find a consistent pattern in the movement of interest rates during the 1830's. The short-term interest rate fluctuated wildly, but reached high levels only in or near financial panics. The long-term rate scarcely moved at all. The interest rate cannot be said to have fallen in the 1830's." Ayres, *Turning Points*, constructed a weighted series of rates on New York, Ohio, and Kentucky bonds that moves up after 1836. Long term interest rates showed no downward movement from 1836 to 1838. Of course, it is possible that they would have moved lower had states not borrowed so much.

30. For estimates of the access to transportation improvements on land values see Weiss, Craig, and Palmquist "" and Eschelbach and Coffman.

31. See Sylla, Legler, and Wallis "Banks and State Public Finance" and Wallis, Sylla, and Legler "Relationship" for a discussion of state government involvement with banks before 1830.

32. Report of the Treasury, House Document 111, 26th Congress, 2nd Session, The northeastern states include Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Pennsylvania. Outside of the northeast, Ohio had 32 banks, Maryland 21 banks, Georgia and Louisiana 16 each. In contrast, Fenstermaker, *American Commercial Banking*, reports a total of 729 chartered banks in 1837, p. 111, with the same geographic distribution.

33. For a complete list of all the chartered banks before 1837, see Fenstermaker, pp. 112-184.

34. The literature on state banking in this period is enormous. See Knox, *History of Banking* and Redlich, *Molding. Shade, Banks or No Banks*, describes banking in the Northwest. Schweikart, *Banking in the American South*, describes banking in the South. For individual states see: Indiana: Esarey "State Banking," Harding, "State Bank," McCulloch, *Men and Measures*; Ohio: Huntington, "History of Banking;" Illinois: Dowrie, *Banking in Illinois*, Cyril James, *Chicago Banks*; Mississippi, Bentley, "Monopoly Bank," Brough, "History of Banking," Kilbourne, *Bank of the United States*; Louisiana: Green, *Finance and Economic Development*, Caldwell, *Banking History*; Arkansas: Worley, "Control."

35. This table reports authorized debt, rather than issued or outstanding. In a few cases, debt was authorized but not issued, and in other cases debt had been repaid by 1841. As a result, the numbers in Table 7 for debt issued can exceed the numbers in Table 6 for debt outstanding.

The table under represents total state ownership in banks, since several states, notably New York, Pennsylvania, Maryland, Virginia, and South Carolina owned bank stock which they had not purchased with borrowed funds. See Wallis, Sylla, and Legler, "Relationship."

36. See Schweikart, *Banking in the American South*, for a general discussion of southern banks and Sparks/Earle for an explicit description of land banks.

37. Rockoff, "Varieties of Free Banking."

38. See Milton Stapp to Noah Noble, August 6, 1839, Riker, *Wallace Papers*, p. 260. There is evidence that Noble, a former governor and then head of the Improvement Fund, knew of the possibility of default as early as July. The situation in the summer of 1839 is described in Fatout, *Indiana Canals*, pp. __, Esarey, *History of Indiana*, pp. 423-27, McGrane, *Foreign Bondholders*, pp. 129-35.

39. The Governor, Samuel Bigger, noted in his address to the legislature on Dec. 7, 1841, that declared to the legislature that the state was now in default, that: "No correct opinion can be

formed of the probable amount which will be realized from the suspended debt, nor of the value of the collateral securities taken at different times for its payment; the securities are as various as can well be imagined, and many of them are doubtless scarcely worth the paper employed in conveying them to the state. A part of the debt may be recovered, but how much, or when, are questions it is impossible to answer. One thing, however, is pretty certain, that very little of it can be collected in time to be used for any immediate purpose." *Indiana House Journal, 1841/42* pp. 16-17.

40. For events in Michigan see William Jencks, "Michigan's Five Million Dollar Loan" and McGrane, *Foreign Bondholders*, pp. 143-155.; for Arkansas see McGrane, pp. 245-64; for Illinois see Krenkel, *Internal Improvements*, pp. 139-141 and McGrane, pp. 102-25.

41. State of Michigan, *Senate Documents*, "Annual Report of the Auditor General, Dec. 14, 1839," p. 107; emphasis in the original.

42. Exactly when the state knew that the Morris Bank would default is not clear. Jenks reports that "All payments due on the contract were made during 1839 so that up to and including the payment of January 1, 1840..." p. 589. The "Report of the Auditor General" for December 14, 1839, *Michigan Senate Documents, 1840*, pp 101-109, makes no mention of any defaults. The report for December 20, 1840 *Michigan Senate Documents, 1841* indicates payments received from the BUS but none from the Morris Bank in fiscal 1840 (the year ran from December 1 to November 30). By November, the state was clearly worried about the solvency of the Morris Bank and the BUS, and sent a representative, Kintzing Pritchette, to negotiate for the surrender of all of the bonds for which the state had not yet been paid. The banks informed Pritchette that the bonds were already in Europe.

43. Redlich, *Molding of American Banking, Vol. 2*, pp. 324-43, dates the origins of investment banking in the 1830s to just these banks and their marketing of state securities.

44. By April of 1839 the BUS held \$12 million (par value) of stock in private corporations,

primarily banks. See House Document, 226, 29th Congress, 1st Session, pp. 458-60.

45. Jenks, *Migration*, pp. 90-95, has a spirited description of Biddle's actions. Jenks' account has been extremely influential. Hammond bases much of his argument on Jenks, *Banks and Politics*, pp. 467-477, as do Rostow, Gayer, and Schwartz, *Fluctuations*, pp. 287-289. For a more balanced view of the entire banking system's role in the cotton market in 1837, 1838, and 1839 see Woodman, *King Cotton*, pp. 105-111, which emphasizes that many banks were directly engaged in cotton marketing from 1837 to 1839. These cotton operations could not be directly undertaken by the Bank, but were, instead undertaken in the name of Nicholas Biddle and other of the Bank officers, see Govan, *Nicholas Biddle*, pp. 349-351.

46. Conditions that allowed the BUS to do his prevailed between July and September of 1837.

47. I found Kilbourne's description of Biddle's cotton operation particularly illuminating.

Kilbourne, *The Bank of the United States*, 2000, pp. 121-50. By purchasing cotton, Biddle was also able to profit from the premium on northeastern currency over southern currency.

48. Kilbourne, *Bank of the United States*, p. 168, footnote 84, estimates that "it is safe to assume that five or six banks in the state gained control over half of the [Mississippi] crop at a minimum."

49. Hammond, *Banks and Politics*, p. 472.

50. Kilbourne, *Banks of the United States*, pp. 129-33. Biddle's action drew criticism in both the United States and Britain, since he was clearly overstepping the bounds of traditional banking practice. Biddle's actions did raise the price of cotton in the US in 1837 and 1838, but he was not cornering the market in cotton. The failure of the other US banks to profit from the speculation is clear evidence that there was no collusion. Had all of the US banks consigned their cotton to Humphreys and Biddle it may have been a different story.

51. Smith, *Economic Aspects*, p. 211, states that "The Bank had acquired a one-fourth interest in this corporation [the Morris Bank] through the purchase of 9613 shares in 1837." In the

documents gathered by the Bank's Directors in 1841, stock in the Morris Bank is listed as 8,425 1/5 shares valued at \$872,475.40 in April, 1839 and 12,983 shares (not valued) on Dec 21, 1840, House Executive Document 226, 29th Congress, 1st Session, p. 459, 454.

52. Cotton assets appear in Table 9 either as bills discounted "on personal security" or "on other security."

53. By the end of 1839 the BUS had pledged over \$12 million in state bonds as security for loans in Europe. The Bank acquired substantially more bonds than the \$5 million it held in April.

54. Smith, *Economic Consequences*, p. 218

55. Hammond, *Banks and Politics*, pp. 500-13. "The cumulative effect on the demand for Mr. Biddle's cotton and on the United States Bank's credit was crushing. He had counted on recovery, with the optimistic but reasonable expectation that conditions, being bad, would improve; instead of which, being bad, they got worse." p. 503. "Subsequent critics of Nicholas Biddle have talked as if the cotton operations were merely a way speculation of his intended to make money. They were obviously more than that. They were intended to restore trade, pay what American's owed abroad, and restore her credit in the Old World's capital markets." p. 471. Hammond draws on Jenks for his analysis, and Jenks clearly blames the "Collapse of Biddle's System" on cotton, pp. 95-96.

56. Smith, *Economic Consequences*, p. 200. Jenks, *Migration*, emphasizes the importance of the cotton speculation, but puts the total losses in 1839 at only \$900,000 of which the Bank bore the major share, hardly a loss large enough to sink the Bank. The \$900,000 figure can be found in the report of "The Committee appointed at the meeting of the stockholders of the Bank of the united States, held January 4, 1841, to examine the details of the statement then submitted by the president" reprinted in House Document 226, 29th Congress, 1st Session, pp. 411-424, with particular attention to cotton transactions on pp. 419-422. "The result of these last shipments

was a loss of \$962,524.13" p. 420.

57. Smith, *Economic Consequences*, p. 255.

58. Smith, *Economic Consequences*, pp. 209-20 has the best discussion of the suspension and its causes.

59. As Biddle wrote to Adams, "... there can be no better application of the means of the European capitalist than to double his income by American investments. Yet all these require knowledge, local information, the means of exciting confidence; and it was thought most expedient to establish an American agency in London, as the common centre and the general support of all American securities, where, in addition to the appropriate business of the bank itself, all the public and corporate stocks of the States might find shelter and promotion." House Document 226, 29th Congress, 1st Session, p. 406.

60. Wallis, Grinath, and Sylla, "Debt, Default, and Revenue Structure" provide a much more detailed analysis of the state defaulted. They show that Indiana would have been able to meet its bond obligations in 1843 with the tax rates of 1843 if the value of land had stayed at \$7 an acre.

61. Smith, *Economic Consequences*, the quote is from page 220, and the discussion from 209-221.

62. I am grateful to Hugh Rockoff, who suggested something like this table to me.

63. Clay in Benton, *Debates*, as quoted in Shade, p. 46. Matthews, *Trade-Cycle*, p. 69.

Table 1
The Contributions of the Three Determinants Compared with
Changes in the Stock of Money and Prices, 1820-1843

Variable	Annual Rates of Change (%)		
	Inflation	Intense Inflation	Deflation
	1829-1839	1833-1836	1839-1843
Prices	2.6	8.3	-12.1
Money	7.2	16.5	-2.6
Specie	9.2	19.2	4.7
Reserve Ratio	0.6	2.7	-6.6
Currency Ratio	-2.4	-5.1	-1.5
Interaction of Ratios	-0.2	-0.5	0.6
Fraction of the Change in the Stock of Money Produced by Each of the Determinants			
Specie	1.28	1.16	-1.81
Reserve Ratio	0.08	0.16	2.53
Currency Ratio	-0.33	-0.31	0.58
Interaction of Ratios	-0.03	-0.03	-0.23

Taken from Hugh Rockoff, "Money, Prices, and Banks in the Jacksonian Era" Table 2, p. 452.

Note: The figures in the bottom panel of the table are positive if the determinant explains the direction of change in the money supply correctly, they are negative if the determinant explains why the money supply should have moved in the opposite direction.

Table 2
Short Term Interest Rates, Bank Rate,
and Bullion Reserves at the Bank of England

	60 Day Bills On London in Boston and New York	Discount Rates on Commercial Paper Boston and New York	Bank Rate Bank of England	Discount Rates on Commercial Paper London	Bullion Reserves Bank of England (millions of Sterling)
	par = 9.75 (1)	(2)	(3)	(4)	(5)
1/36	8.5	10	4	3.75	7.8
2/36	10	10	4	3.75	
3/36	9.25	12	4	3.5	
4/36	7.75	12,15	4	3.25	7.4
5/36	7	15,18	4	3.25	
6/36	7	15,12	4	4	
7/36	7.5	15,18	4.5	4	5.7
8/36	7.5	18,24	4.5	4.5	
9/36	7.5	24	5	5	
10/36	8.25	24,36	5	5	4.3
11/36	8.25	24,30	5	5.5	
12/36	9.5	24,30	5	5.5	
1/37	7.5	16,20,13	5	5.5	4.1
2/37	9.75	15,21,27	5	5.5	
3/37	8.75	18,20,27	5	5.5	
4/37	11.5	27,26,30	5	5.5	4.7
5/37	11	27,32	5	4.5	
6/37	13	18,9,6	5	4.5	
7/37	18	7.5	5	4.5	6.3
8/37	19.75	7.5	5	4	
9/37	21	7.5,6.5	5	3.5	
10/37	14	6.5	5	3.5	8.9
11/37	16	6,9	5	3.25	
12/37	14	10	5	3.5	
1/38	9.875	11	5	3.5	10.1
2/38	9	12	4	3	
3/38	7.5	12,18	4	3	
4/38	4.75	18,12	4	2.75	9.7
5/38	6.75	10,9,7	4	2.5	
6/38	8	7,6	4	2.75	
7/38	8.25	6	4	3	9.6
8/38	7.25	6,7	4	2.75	
9/38	9.25	6,7	4	3	
10/38	9.875	6,7	4	3	9.3
11/38	9.5	6,8	4	3.25	
12/38	10	7,9,7	4	3.5	

	(1)	(2)	(3)	(4)	(6)
1/39	9.5	6,9	4	3.75	7.1
2/39	9	6,9	4	3.75	
3/39	8.75	6,9	4	3.75	
4/39	9.5	6,9	4	3.75	4.3
5/39	8.75	6,9	5	4	
6/39	9.375	9	5.5	5	
7/39	9.125	11,12	5.5	5.5	2.8
8/39	9.5	12,15	6	6	
9/39	9	15,18,21	6	6.5	
10/39	10	21,30	6	6.5	3.5
11/39	9	20,33,26	6	6.5	
12/39	9	18,15,9	6	6.5	
1/40	8	9	5	6	4.3
2/40	8.5	9,12	5	4.75	
3/40	8	9,12	5	4.75	
4/40	7.75	12,7	5	4.75	4.4
5/40	8	7	5	4.25	
6/40	7.5	6,8	5	4.75	
7/40	7	8,5	5	4.5	4.3
8/40	7	5,7,5	5	4.5	
9/40	7	6,7	5	4.75	
10/40	8.25	6,7	5	5	3.5
11/40	8.75	6,7	5	6	
12/40	8.75	6,7	5	5.75	

Sources:

- (1) Exchange Rates on 60 day London bills, Smith and Cole, *Fluctuations*, p. 190
- (2) Discount Rates, New York and Boston, Smith and Cole, *Fluctuations*, p. 192
- (3) Bank Rate, Clapham, *Bank of England*, vol II, Appendix B, p. 199.
- (4) NBER, Web Site data base.
- (5) Bullion reserves, Matthews, *Trade-Cycle*, p. ??

TABLE 3
Banking
Indicators

PERCENT CHANGE IN	1/1/37 to 1/1/38	1/1/38 to 1/1/39	1/1/39 to 1/1/40	1/1/40 to 1/1/41
LOANS AND DISCOUNTS				
NORTHEAST	-14.8%	1.3%	-5.8%	2.7%
SOUTH&WEST	-1.4%	4.6%	-11.0%	-7.8%
BUS	-21.1%	-8.0%	-11.5%	
NATIONAL	-9.8%	1.9%	-8.8%	-3.7%
SPECIE				
NORTHEAST	-10.6%	25.4%	-5.7%	8.1%
SOUTH&WEST	-5.6%	24.4%	-25.0%	-5.8%
BUS	42.9%	10.2%	-64.6%	
NATIONAL	-3.8%	23.2%	-22.5%	-1.3%
CIRCULATION				
NORTHEAST	-26.4%	19.7%	-23.2%	27.4%
SOUTH&WEST	-13.7%	7.6%	-21.4%	-1.4%
BUS	-40.9%	-11.6%	11.9%	
NATIONAL	-21.3%	11.2%	-20.5%	7.9%
DEPOSITS				
NORTHEAST	-43.5%	12.3%	-5.8%	14.3%
SOUTH&WEST	-32.7%	-2.7%	-27.6%	-23.5%
BUS	12.2%	159.1%	-50.8%	
NATIONAL	-37.2%	9.6%	-19.5%	-6.0%
LEVEL OF SPECIE	1/1/37	1/1/38	1/1/39	1/1/40
NORTHEAST	\$12,636,704	11,303,259	14,169,071	13,354,857
SOUTH&WEST	21,130,352	19,948,766	24,821,216	18,627,949
CIRCULATION + DEPOSITS				
NORTHEAST	118,558,605	76,938,736	89,604,319	75,495,890
SOUTH&WEST	128,676,181	99,877,683	103,432,488	78,921,733

Northeast - ME, NH, VT, MA, RI, CT, NY, NJ, PA

South & West - DE, MD, DC, VA, NC, SC, GA, FL, AL, LA, ARK, MS, TN, KY, MO, IL, IN, OH, MI

Source: United States Congress, *House Document 111*, 26th Congress, 2nd Session.

Table 4
 Percentage change in the Money Supply Explained
 By changes in Specie, Circulations, and Deposits
 in the Northeast, South and West, and Nation as a Whole

1/1/1839 to 1/1/1841	TOTAL EXPLAINED			
	BY SPECIE	BY CIRCULATION	BY DEPOSITS	BY EACH REGION
NORTHEAST	-2.44%	17.03%	4.47%	19.07%
SOUTH&WEST	-24.03%	48.45%	56.52%	80.93%
NATIONAL TOTAL	-26.47%	65.48%	60.99%	

Source: See Table 3

Table 5
Information on New York and Louisiana Banks
1837 to 1841

Percentage Change	37 TO 38	39 to 40	40 to 41
NEW YORK BANKS			
Loans and Discounts	-23.1%	-22.7%	3.6%
Specie	-36.9%	-11.2%	-7.4%
Circulation	-48.6%	-45.1%	43.3%
Deposits	-48.5%	-10.3%	3.5%
LOUISIANA BANKS			
Loans and Discounts	-5.9%	-19.4%	6.1%
Specie	-12.2%	-14.8%	-6.9%
Circulation	-4.4%	11.4%	-7.9%
Deposits	-35.4%	-10.4%	-54.9%
ENTIRE NATION			
Loans and Discounts	9.8%	-8.8%	-3.7%
Specie	3.8%	-22.5%	-1.3%
Circulation	21.3%	-20.5%	7.9%
Deposits	37.2%	-19.5%	-6.0%

Source: See Table 3

Table 6
Total Debt Outstanding in 1841
By Year of Authorization
(Thousands of Dollars)

	Up To 1834	1835	1836	1837	1838	1839	1840	1841	State Totals
Illinois	0	0	500	3,165	0	3,478	5,079	1,306	13,527
Indiana	1,990	227	7,771	0	1,400	1,363	0	0	12,751
Michigan	0	100	0	5,020	451	40	0	0	5,611
Kentucky	0	200	190	0	1,250	33	1,413	0	3,086
Tennessee	500	35	0	0	2,881	0	0	0	3,416
Missouri	0	0	0	432	0	145	0	265	842
Alabama	3,900	1,600	2,400	5,000	2,500	0	0	0	15,400
Florida	3,000	900	0	0	0	100	0	0	4,000
Mississippi	2,000	0	0	0	5,000	0	0	0	7,000
Arkansas	0	0	146	2,530	0	0	0	0	2,676
Louisiana	22,200	0	0	600	0	1,185	0	0	23,985
Ohio	4,500	0	170	550	1,710	3,476	149	369	10,924
Maine	0	0	0	2	267	507	825	133	1,735
Massachusetts	0	0	0	1,900	2,200	1,644	0	225	5,969
New York	6,409	0	2,000	250	5,088	50	7,784	216	21,797
Pennsylvania	22,159	960	0	0	15	6,289	3,754	3,159	36,336
Maryland	4,885	40	20	500	8,775	903	0	92	15,215
Virginia	4,067	714	15	573	959	2,364	18	34	8,744
South Carolina	944	0	0	0	2,148	600	0	0	3,691
Georgia	0	0	0	903	422	0	0	0	1,325
Total Outstanding	76,554	4,775	13,212	21,425	35,066	22,177	19,023	5,798	198,030
Total Authorized	79,341	7,220	18,589	21,609	41,617	26,795	27,377	12,170	
Total Ever Issued	79,266	4,775	13,556	21,587	37,746	20,764	19,811	5,798	

Notes:

The entry in each cell is the total amount of debt authorized by state legislatures in each calendar year, still outstanding on September 1, 1841.

Authorized debt may never be issued, or may be issued in a later year.

Where debt was authorized by more than one piece of legislation, the later date was usually taken.

"Total Authorized" debt is the total, for the entire nation, of debt authorized in each year.

"Total Ever Issued" debt is the amount of the authorized debt that was ultimately issued, for the entire nation in each year. This does not represent debt actually issued in each year.

Source: House Report, 296, 27th Congress, 3rd Session, 1843. "Report of William Cost Johnson."

Table 7
Bank Debt Authorized
(Thousands of Dollars)

	Up To								State
	1834	1835	1836	1837	1838	1839	1840	1841	Totals
Illinois	0	0	0	3,000	0	0	0	0	3,000
Indiana	1,390	0	0	0	1,000	0	0	0	2,390
Michigan	0	0	0	0	0	0	0	0	0
Kentucky	0	0	0	0	0	0	0	0	0
Tennessee	500	0	0	0	2,500	0	0	0	3,000
Missouri	0	0	0	432	0	2,230	0	0	2,662
Alabama	3,900	1,600	2,400	5,000	2,500	0	0	0	15,400
Florida	3,000	2,500	0	0	0	0	0	0	5,500
Mississippi	2,000	0	0	0	5,000	0	0	0	7,000
Arkansas	0	0	330	2,530	800	0	0	0	3,660
Louisiana	23,400	0	0	0	0	0	0	0	23,400
Ohio	0	0	0	0	0	0	0	0	0
Maine	0	0	0	0	0	0	0	0	0
Massachusetts	0	0	0	0	0	0	0	0	0
New York	0	0	0	0	0	0	0	0	0
Pennsylvania	0	0	0	0	0	0	0	0	0
Maryland	0	0	0	0	0	0	0	0	0
Virginia	0	0	0	0	0	450	0	0	450
South Carolina	0	0	0	0	0	200	0	0	200
Georgia	0	0	0	0	0	0	0	0	0
TOTAL	34,190	4,100	2,730	10,962	11,800	2,880	0	0	66,662

Notes:

Entry in each cell is the amount of debt authorized for bank purposes. Not all authorized debt was issued.

Source: House Report, 226, 27th Congress, 3rd Session, 1843. "Report of William Cost Johnson."

Table 8

Stock Holdings of Banks
January 1, 1837 to January 1, 1841

	1837	1838	1839	1840	1841
NORTHEAST	5,001,805	7,243,757	5,889,244	7,453,867	4,670,490
SOUTH&WEST	7,358,781	10,327,178	12,028,419	15,772,711	11,416,952
BUS	0	14,862,108	17,957,497	16,316,419	0
Total	12,360,586	32,433,043	35,875,160	39,542,997	16,087,442

Source: see Table 3.

Note that stock holdings of banks may include some private corporation stocks, but at this time is primarily state government bonds.

Table 9
 Assets of the Bank of the United States
 March 3, 1836; April 1, 1839; and March 1, 1841
 (Thousands of Dollars)

	1836	1839	1841
ASSETS			
Bills Discounted			
on personal security	20,148	18,815	14,404
on other security	17,386	296	3,071
on bank stock	3,061	7,447	0
Domestic Bills of exchange	17,751	74,467	2,638
Bills Receivable for Post Notes	0	306	0
Total Bills	58,345	39,854	20,115
Stock Accounts*	0	12,043	10,842
State Bonds*	0	5,645	20,305
Specie	6,224	3,070	862
Due from State banks	4,376	6,662	7,912
State Bank Notes	2,351	2,085	972
Other	2,551	5,482	8,910
Total Assets	73,847	74,841	69,918
LIABILITIES			
Circulation	20,114	6,680	3,870
Post-Notes	0	4,891	6,105
Foreign Liabilities**	372	13,702	17,009
Due State Banks	3,412	3,675	1,868
Due to Depositors	3,711	4,474	2,210
Other	3,024	2,071	2,183
Total Liabilities	30,633	35,493	33,245

Notes:

Estimates of state bond holdings are taken from elsewhere in the report.

Foreign Liabilities includes the balance on various foreign accounts, the foreign exchange account, loans in Europe, and Bonds in Europe.

Source: Congressional Report 226, 29th Congress, 1st Session
 Appendix E, p. 442

Table 10

Illinois, Indiana, and Pennsylvania Bond Prices in 1839

	Illinois 6's	Illinois 6's	Indiana 5's Sterling	Penn 5's
DATE	BID	ASKED		BID
01/19	103	---		104.00
04/20				104.00
07/02			90	
07/15			90	
07/20	---	101		99.00
07/31	90	94		99.00
08/03				94.5
09/14	---	91		
09/21	90	95		
09/23			80	
9/30			75	
10/19	85	---		
10/21			75	
10/31			80	
11/16*	60	75		92
11/16	60	---		
11/23	65	85		92
11/30*	---	68		92
12/07	61	---		92
12/14	62.50	---		92

Source: Data provided by Robert Wright and Jack Wilson.
Indiana data from Redlich, *Molding*, Vol. 2, pp. 342-3.

* Illinois 6's payable in 1870, rest of bonds are payable in 1860.

Table 11
 Change in Specie, Loans and Discounts,
 Circulation, and Deposits
 January 1, 1839 to January 1, 1841

Change in Specie	Change in Loans and Discounts	Change in Circulation	Change in Deposits				
FL	-97%	KY	-75%	KY	-67%	IL	-93%
OH	-60%	IL	-42%	OH	-56%	MI	-86%
KY	-59%	MI	-41%	MO	-49%	KY	-78%
MI	-57%	OH	-40%	FL	-45%	MO	-70%
GA	-49%	TN	-24%	MI	-41%	NC	-68%
IL	-46%	GA	-23%	SC	-34%	FL	-62%
TN	-45%	NJ	-21%	MD	-33%	LA	-60%
RI	-29%	MD	-21%	NH	-28%	AL	-43%
MO	-26%	NY	-20%	TN	-23%	SC	-37%
LA	-21%	IN	-19%	NY	-21%	TN	-29%
IN	-20%	LA	-14%	RI	-17%	OH	-28%
SC	-20%	ME	-13%	VA	-17%	ME	-27%
NY	-18%	DE	-10%	IL	-17%	MD	-26%
ME	-11%	VA	-9%	ME	-14%	DE	-22%
MD	-7%	NH	-8%	MA	-3%	NH	-19%
AL	-6%	AL	-6%	IN	-3%	GA	-14%
VA	-2%	RI	-5%	GA	-2%	VA	-11%
NJ	1%	NC	-5%	NC	-1%	NY	-7%
NH	3%	MA	-4%	LA	3%	IN	-4%
DE	10%	MO	4%	AL	6%	RI	-2%
NC	11%	SC	5%	NJ	17%	MA	2%
MA	25%	FL	7%	DE	22%	NJ	27%

Source: See Table 3

Table 12

Variation in the Change in Specie, Loans and Discounts,
Circulation, and Deposits
January 1, 1839 to January 1, 1841
by Per Capita Debt, Default Status, and Banking System

Dependent Variable	Change in Specie	Change in Loans and Discounts	Change in Circulation	Change in Deposits
<hr/>				
Regression on Per Capita Debt				
Constant	-0.1492	-0.0868	-0.1719	-0.2731
standard error	0.2632	0.8860	0.3752	0.3239
Per Capita Debt	-0.0062	0.0062	0.0012	-0.0050
standard error	0.0027	0.0091	0.0039	0.0033
r ²	0.1979	0.0208	0.0045	0.0922
<hr/>				
Difference in Means Tests				
State Defaulted Mean	-0.4067	-0.2157	-0.2281	-0.5492
standard error	0.1143	0.0748	0.0822	0.1410
State did not Default Mean	-0.1716	-0.1530	-0.2049	-0.3010
standard error	0.0644	0.0463	0.0640	0.0737
probability	0.0348	0.2607	0.4235	0.0555
<hr/>				
State Banks Mean	-0.3553	-0.2156	-0.1106	-0.5371
standard error	0.0848	0.0724	0.1460	0.0961
No State Banks Mean	-0.1403	-.1270	-0.1551	-0.1833
standard error	0.0758	.0335	0.0634	0.0671
probability	0.0359	.1329	0.3881	0.0029
<hr/>				

References

- Abernathy, Thomas P. "The Early Development of Commerce and Banking in Tennessee." *The Mississippi Valley Historical Review*, 14, 3, December 1927, pp. 311-25.
- Ayres, Leonard P. *Turning Points in Business Cycles*. New York: MacMillan 1939.
- Bentley, Marvin. "The State Bank of Mississippi: Monopoly Bank on the Frontier (1809-1830)," *The Journal of Mississippi History*, XL, 4 November 1978, pp. 297-319.
- Benton, Thomas Hart, ed. *Abridgement of the Debates of Congress from 1789 to 1856* Vol. 13, (New York: D. Appleton and Co.), 1860.
- Berry, Thomas Senior. *Western Prices Before 1861*. Cambridge: Harvard University Press, 1943.
- Bourne, Edward G. *The History of the Surplus Revenue Act of 1837*. Original published in 1885. Reprinted by Burt Franklin: New York, 1968.
- Brantley, William H. *Banking in Alabama, 1816-1860*. Privately Printed, 1961.
- Brough, Charles. "The History of Banking in Mississippi." *Mississippi Historical Society Publications*, .
- Callender, Guy S.
- Caldwell, S. A. *A Banking History of Louisiana*. Baton Rouge: Louisiana State University Press, 1937.
- Clapham, John. *The Bank of England*. Cambridge: Cambridge University Press, 1945.
- Dowrie, George William. *The Development of Banking in Illinois, 1817-1863*. Urbana: University of Illinois Press, 1913.
- English, William B. "Understanding the Costs of Sovereign Default: American State Debts in the 1840's." *American Economic Review* 86 (March 1996): 259-75.
- Esarey, Logan. *A History of Indiana: From its Exploration to 1860*. Indianapolis: B. F. Bowen and Company, 1918.
- "State Banking in Indiana." *Indiana University Studies*, April, 1912.
- Eschelbach, Mary and Coffman. "" *Journal of Real Estate Economics*.
- Fatout, Paul. *Indiana Canals*. West Lafayette, Indiana: Purdue University Studies, 1972.
- Fenstermaker, J. Van. *The Development of American Commercial Banking 1782-1837*. : Kent, Ohio: Kent State University, Bureau of Economic and Business Research, 1965.
- Gatell, Frank Otto. "The Spoils of the Bank War: Political Bias in the Selection of Pet Banks." *The American Historical Review*, 70 1 October 1964, pp. 35-58.
- "Sober Second Thoughts on Van Buren, the Albany Regency, and the Wall Street Conspiracy," *The Journal of American History*, 53 1, June 1966, pp. 19-40.
- Gates, Paul Wallace. *History of Public Land Law Development*. Washington, D.C.: GPO, 1968.
- Gayer, Arthur D., W.W. Rostow, and Anna Jacobson Schwartz. *The Growth and Fluctuation of the British Economy, 1790-1850*. Oxford: Clarendon Press, 1953.

- Gray, Lewis Cecil. *History of Agriculture in the Southern United States to 1860*. Gloucester: Peter Smith, 1958.
- Green, George D. *Finance and Economic Development in the Old South*. Stanford: Stanford University Press, 1972.
- Goodrich, Carter. *Government Promotion of American Canals and Railroads*. New York: Columbia University Press, 1960.
- Govan, Thomas Payne. *Nicholas Biddle*. Chicago: University of Chicago Press, 1959.
- Green, George D. *Finance and Economic Development in the Old South: Louisiana Banking, 1804-1861*. Stanford: Stanford University Press, 1972.
- Hammond, Bray. "Jackson, Biddle, and the Bank of the United States." *Journal of Economic History*, 7, 1, May 1947, 1-23.
- *Banks and Politics in America: From the Revolution to the Civil War*. Princeton: Princeton University Press, 1957.
- Harding, William F. "The State Bank of Indiana." *Journal of Political Economy*, 4 December 1885, pp. 1-36.
- Hidy, Ralph W. *The House of Baring in American Trade and Finance*. Cambridge: Harvard University Press, 1949.
- Holt, Michael F. *The Political Crisis of the 1850s*. New York: Norton, 1978.
- *The Rise and Fall of the American Whig Party*. New York: Oxford University Press, 1999.
- James, F. Cyril. *The Growth of Chicago Banks. 2 vols.* New York: Harper and Brothers, 1938.
- Jenks, Leland Hamilton. *The Migration of British Capital to 1875*. New York: Knopf, 1938.
- Jenks, William L. "Michigan's Five Million Dollar Loan." *Michigan Historical Magazine*. 15, Autumn, 1931, pp. 575-633.
- Kilbourne, Richard Holcombe Jr. *The Bank of the United States in Mississippi, 1831-1852*. Manuscript, 2000.
- Krenkel, John H. *Illinois Internal Improvements 1818-1848*. Cedar Rapids: The Torch Press, 1958.
- Knox, John Jay. *A History of Banking in the United States*. New York: Bradford Rhodes and Company, 1900, reprinted New York: Augustus M Kelley, 1969.
- McCormack, Richard L. *The Party Period and Public Policy*. New York: Oxford University Press, 1986.
- McGrane, Reginald C. *Foreign Bondholders and American State Debts*. New York: Macmillan Company, 1935.
- *The Panic of 1837*. Chicago: University of Chicago Press, 1924.
- Macesich, George. "Sources of Monetary Disturbances in the United States, 1834-1845." *Journal of Economic History*, 20 3, September 1960, pp. 407-34.
- Matthews, R.C.O. *A Study in Trade-Cycle History*. Cambridge: Cambridge University Press, 1954.
- Meyers, Marvin. *The Jacksonian Persuasion: Politics and Belief*. Stanford: Stanford University Press, 1957.
- O'Leary, Paul M. "The Coinage Act of 1834." *Journal of Political Economy*, 45, 1, pp. 80-94.

- Perkins, Edwin J. *American Public Finance and Financial Services, 1700-1815*. Columbus: Ohio State University Press, 1994.
- Pessen, Edward. *Jacksonian America: Society, Personality, and Politics, Revised Edition*. Chicago: University of Illinois Press, 1985
- Ratchford, B. U. *American State Debts*. Durham: Duke University Press, 1941.
- Redlich, Fritz. *The Molding of American Banking: Men and Ideas*. New York: Johnson Reprint Corporation, 1968.
- Remini, Robert. *Andrew Jackson and the Bank War*. New York: Norton, 1967.
- Richardson, James D. *Messages and Papers of the Presidents*, Washington: Bureau of National Literature, 1897.
- Riker, Dorothy. Ed. *Governor David Wallace: Messages and Papers: 1837-1840*. Indiana Historical Collections, Volume XLIII. Indianapolis: Indiana Historical Bureau, 1963.
- Rockoff, Hugh "The Free Banking Era: A Reexamination, *Journal of Money, Credit and Banking*. May 1974, 154.
- Rockoff, Hugh, "Money, Prices, and Banks in the Jacksonian Era," in Fogel....
- Rousseau, Peter L. "Jacksonian Monetary Policy, Specie Flows, and the Panic of 1837." NBER Working Paper 7528, February 2000.
- Scheiber, Harry N. "The Pet Banks in Jacksonian Politics and Finance, 1833-1841." *Journal of Economics History*, 23, 2 June 1963, 196-214.
- *Ohio Canal Era: A Case Study of Government and the Economy, 1820-1861*. Athens, Ohio: The Ohio State University Press, 1969.
- "George Bancroft and the Bank of Michigan." *Michigan History*, 44, March, 1960, pp. 82-90.
- Schweikart, Larry. *Banking in the American South from the Age of Jackson to Reconstruction*. Baton Rouge: Louisiana State University Press, 1987.
- Schlessinger, Arthur M. *The Age of Jackson*. New York: Little, Brown, and Company, 1945.
- Scott, William A. *The Repudiation of State Debts*. New York: Thomas Y. Crowell, 1893.
- Sellers, Charles. *The Market Revolution: Jacksonian America, 1815-1846*. New York: Oxford University Press, 1991.
- Shade, William Gerald. *Banks of No Banks: The Money Issue in Western Politics, 1832-1865*. Detroit: Wayne State University Press, 1972.
- Smith, Walter B. *Economic Aspects of the Second Bank of the United States*. Cambridge: Harvard University Press, 1953.
- Smith, Walter B. and Arthur Harrison Cole. *Fluctuations in American Business, 1790-1860*. Harvard University Press: Cambridge, 1935.
- Sylla, Richard, John B. Legler, and John Joseph Wallis. "Banks and State Public Finance in the New Republic." *Journal of Economic History*, 47 1987.

- Sylla, Richard and John Joseph Wallis. "The Anatomy of a Sovereign Debt Crisis." *Japan and the World Economy*, 1998.
- Temin, Peter. "The Economic Consequences of the Bank War." *Journal of Political Economy* 76, March 1968, 257-274.
- *The Jacksonian Economy*. New York: W. W. Norton and Company, 1969.
- "The Anglo-American Business Cycle, 1820-60." *The Economic History Review*,
- Timberlake, Richard H. "The Specie Circular and the Distribution of the Surplus." *Journal of Political Economy*, 68, 2, April 1960, 109-117.
- "The Specie Standard and Central Banking in the United States Before 1860." *Journal of Economic History*, 21, 3, Sept 1961, 318-341.
- "The Specie Standard and Sales of Public Lands: A Comment." *Journal of Economic History*, 25, 3, Sept 1965, 414-416.
- *The Origins of Central Banking in the United States*. Cambridge: Harvard University Press, 1978.
- Thorp, Willard Long. *Business Annals*. National Bureau of Economic Research: New York, 1926.
- Tooke, Thomas. *A History of Prices and of the State of the Circulation, in 1838 and 1839*. London: Longman, Orme, Brown, Green and Longman, 1840.
- United States Congress, *House Documents, 26th Congress, 2nd Session, Document #111*. Washington: GPO.
- *House Documents, 29th Congress, 1st Session, #226*. Washington: GPO.
- Wallis, Sylla, and Legler. "The Relationship between Taxation and Regulation of Banks in early Nineteenth Century America" in C. Goldin and G. Libecap, eds. *The Regulated Economy: A Historical Approach to Political Economy* Chicago: University of Chicago Press, 1994, pp. 121-44.
- Wallis, John Joseph, Arthur Grinath, and Richard Sylla, "Debt, Default, and Revenue Structure." NBER Working Paper, and mimeo. 2001.
- Weiss, Thomas, Lee Craig, and Palmquist. "" *Journal of Real Estate Economics*.
- Woodman, Harold D. *King Cotton and His Retainers*, University of Kentucky Press: Lexington, 1948.
- Worley, Ted. R. "Control of the Real Estate Bank of the State of Arkansas, 1836-1855." *Mississippi Valley Historical Review*, 37, 3 December 1950, pp. 403-26.

Annual Land Sales

Figure 1

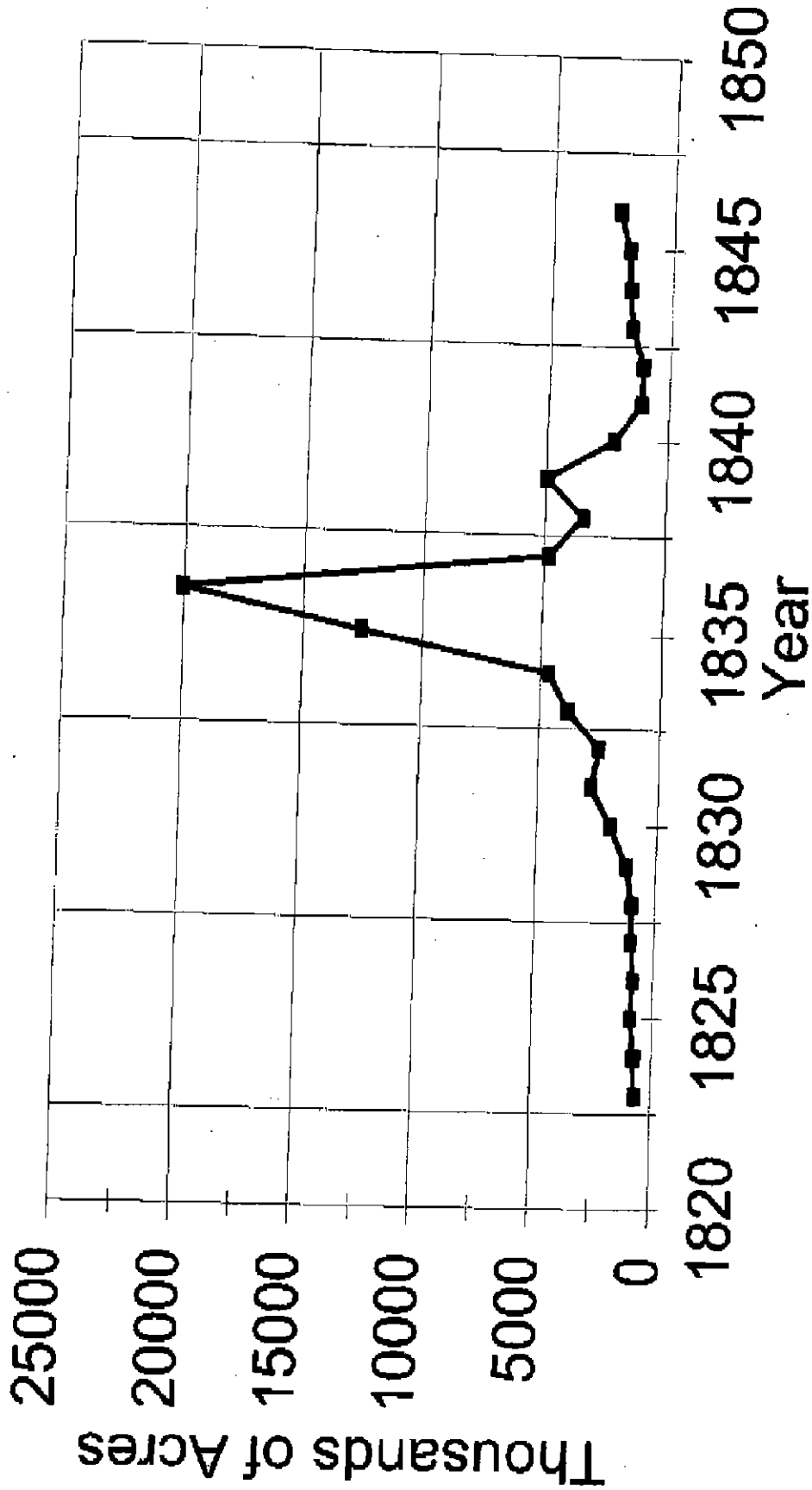
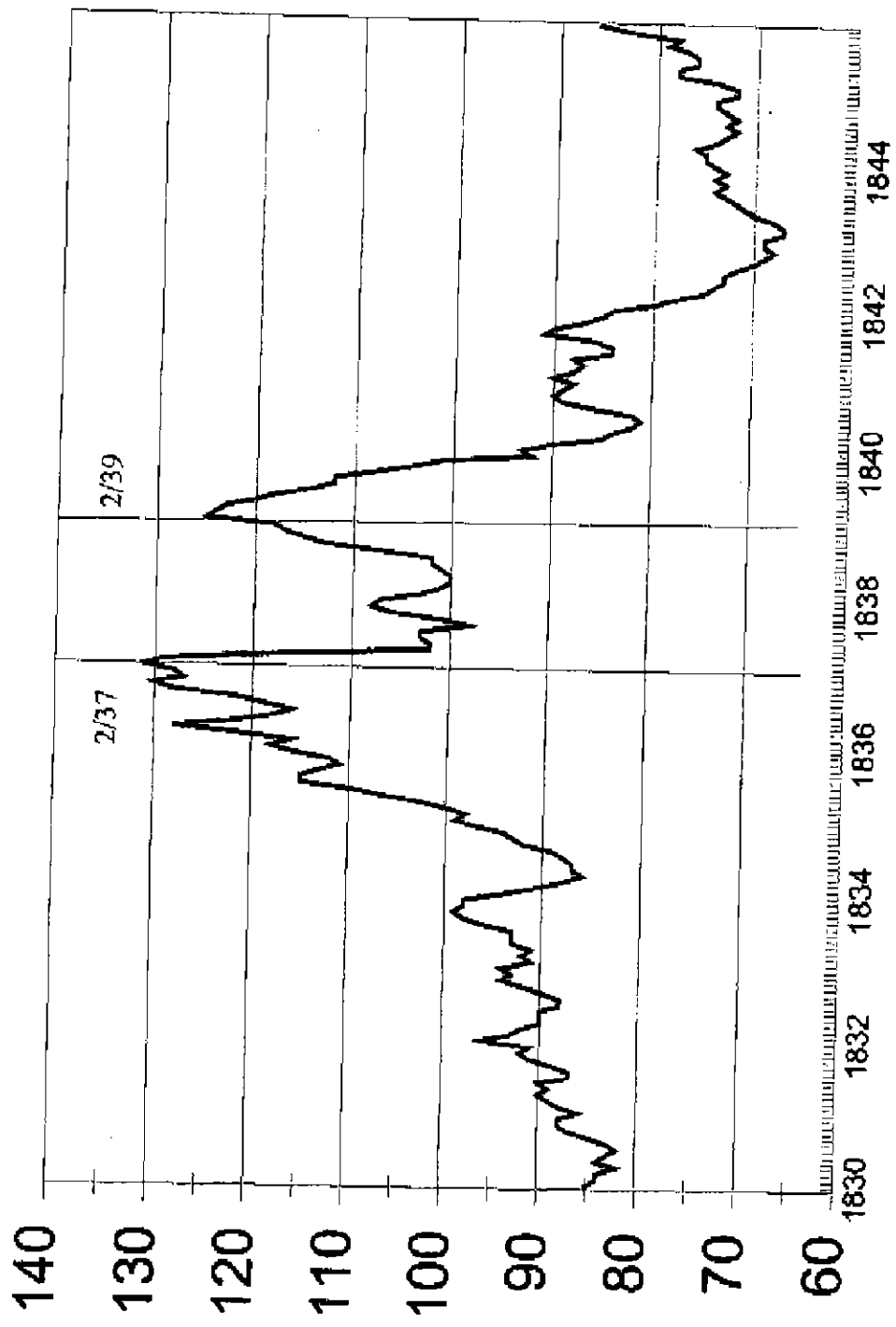


Figure 2 -- Smith and Cole Prices

1834-1842 = 100



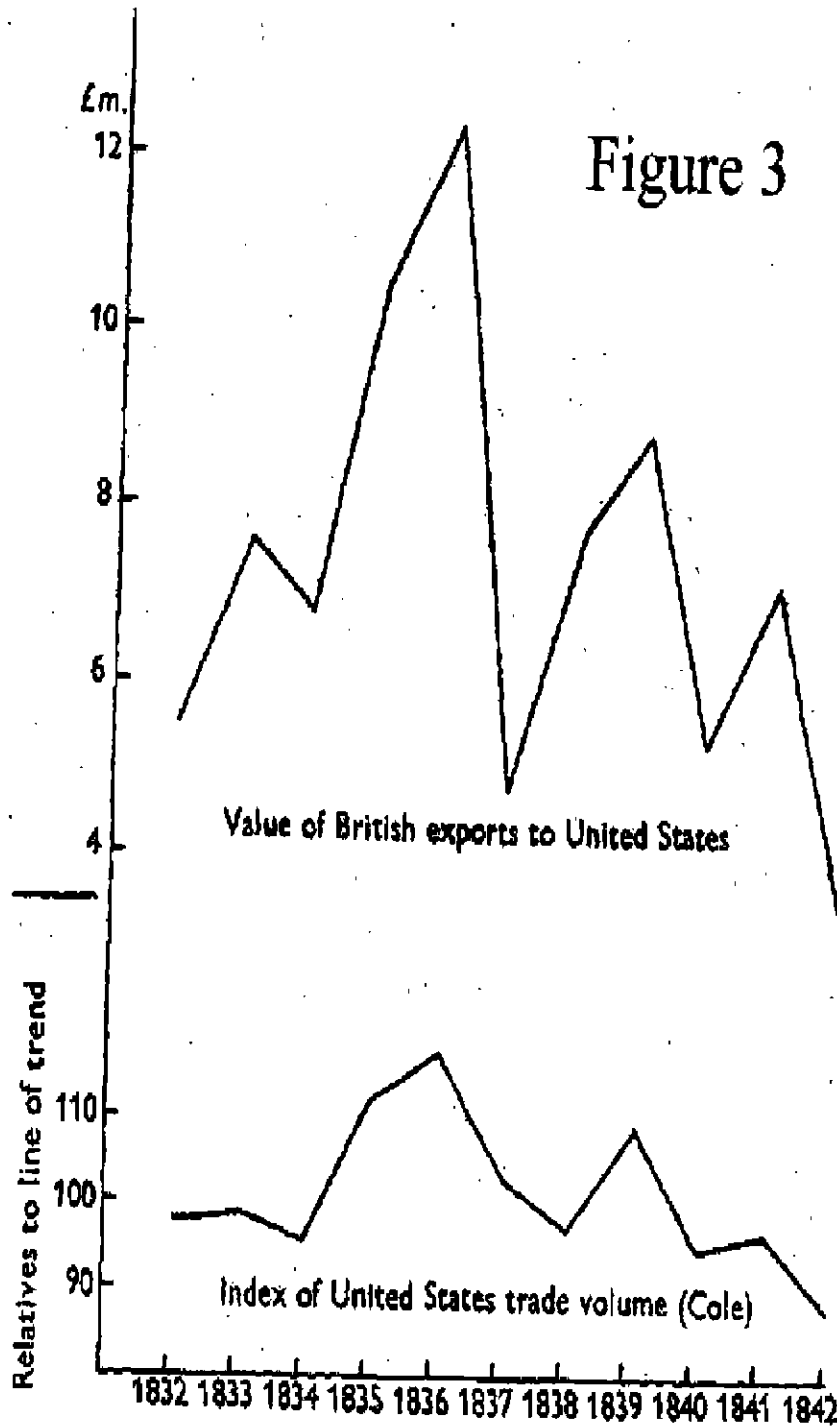


Figure 3

Chart 5

Exports to the United States and index of United States volume of trade

Figure 1 FIGURE 1