

The Depression of 1839 to 1843:

States, Debts, and Banks

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The 1830s are one of the great set pieces in economic history. In 1832, Andrew Jackson vetoed the recharter of the Second Bank of the United States. Over the next five years, while Jackson and Nicholas Biddle, president of the Bank, battled over the role of the bank in federal finances and the basis for the nation's monetary policy, the country underwent rapid inflation and a massive boom in public land sales, culminating in the Panic of 1837. In May of 1837 -- following a period of growing financial stringency, a sharp increase in the Bank Rate of the Bank of England, and increasing disruption to domestic banking caused by Jackson's Specie Circular and the distribution of the federal surplus -- banks throughout the United States suspended specie payments, in most states until the summer of 1838. After a short recovery in 1838 and 1839, banks in the south and west of the country suspended specie payments in October of 1839, and the economy slid into four years of deflation and recession. During these years, the American political system developed two distinct national political parties, the Democrats and the Whigs, whose major points of contention were economic issues, particularly banking. At this critical juncture in American political history, political debates were about economic policies, and economic policies, seemingly, were causing the worst depression the young nation had yet suffered.

For over a century historians and economists revisited the 1830s and the Panic of 1837. The explanations of the inflation and depression played an important role in shaping the debate over a new national central bank in 1914, and the crisis remained an important case study in the efficacy of central or decentralized banking. Politically, Jackson and the Democrats had gotten the better of Biddle and the Whigs in the 1830s, while Biddle and the central bankers seem to have gotten the better of the historical debate.¹ Using modern macroeconomic concepts, however, the new economic historians in the 1960s, led by Peter Temin, produced a dramatic reinterpretation of the Bank War and the cause of macroeconomic instability. Temin showed beyond a reasonable doubt, that the source of the inflation before 1837 was neither Biddle nor Jackson's policies, but international specie flows. Temin also argued that the Panic of 1837 and

the Crisis of 1839, were largely the result of international forces emanating from the Bank of England. Temin's explanation for the Panic of 1837 has been challenged, most recently by Rousseau, but his focus, indeed the entire literature's focus, on events leading up to 1837 has never been questioned. The depression lasted until 1843, but there is no detailed economic history that extends beyond 1839. Calomiris and Gorton, in their history of banking panics, list the panic of "1839 to 1843," by any measure the longest banking panic in the nation's history, but there is no explanation for it. Why did banks in the south and west suspend specie payments for four years, certainly it wasn't the Bank War?

The primary purpose of this paper is to extend the economic history of this depression from 1839 through to 1843. The opening sections are a quantitative narrative, laying out the path of prices, interest rates, and components of the money supply over the course of the depression, both at the national, regional, and state level. In keeping with Temin and earlier scholars, the focus is on the money supply and its determinants. This history diverges from the other histories in the summer of 1839. Temin focuses on the Bank of England, Hammond, Smith, and Jenks on the Bank of the United States of Pennsylvania (BUSP) as the proximate cause of the Crisis of October 1839. While I agree with Smith and Hammond's that the failure of the BUSP was domestic in origin, I look carefully at the collapse of internal improvement programs in the old northwest: Indiana, Illinois, and Michigan. The cessation of canal and railroad construction in these states was not caused by a restriction in the flow of international capital, but initially by the collapse of one American bank, the Morris Canal and Banking Company of New Jersey. The end of canal construction doomed these states to default in 1841 and 1842, and expectations of their defaults drove bond prices down. Northeastern states such as New York, Pennsylvania, Maryland, Ohio, and Massachusetts also had large transportation projects in progress. Their access to funds in international markets was curtailed by the impending defaults, and those northeastern states, in turn, put pressure on their (domestic) banks to continue purchasing bonds. The second purpose of this paper is to demonstrate how state financial needs,

in both the west, south, and northeast, interacted with the domestic banking system to produce four years of bank suspensions in the west and south, and in turn, the deflation from 1839 to 1843.

Since at least Matthews and Macesich, this literature has gravitated to the question of whether international or domestic forces were the cause of macroeconomic events. Such a focus is inevitable given the growing integration of the British and American economies and the fact that Britain was the major consumer of American cotton and a primary source of credit for American transportation and banking investments. Since cotton and wheat prices were determined in international markets and deflation played such an important role in the macro-history, one could never conclude that international forces were unimportant. On the other hand, this does not mean that events in the United States did not have an independent effect on the course of the economy. Between 1839 and 1843, American state governments underwent a debt crisis similar to crisis in Russia, Asia, and Latin America in the 1990s. Unless we extend our history of the 1830s crisis past 1839, we not only miss important causes of the banking and financial crisis that made the depression so deep and long lasting, we ignore an important historical example of American government led macroeconomic instability with implications for the modern world.

I. The Quantitative History

While it is natural to think of the United States as a single nation, with one market, and homogenous institutions, in the early 19th century the United States did not have a single market, single currency, or even a single government. States were the most important level of government, and it was they who governed the banking system and the pace and pattern of economic development. The United States contained, at least, three regional economies, linked together by economic and political ties that were flexible, yet fragile.²

America was also tied to the British economy. The financial instruments used in the domestic and international trade were the same, as both domestic and international trade had to

deal with long distance trade between areas with different currencies. Raw cotton was the largest export of the United States and typically Britain's largest import, although cotton's share of American exports was far larger than cotton's share of British imports.³ Southern cotton owners typically consigned their product to an intermediary who arranged for shipment and finance, in return for which the cotton owner was able to draw on credits for a percentage of the estimated value of the cotton prior to final sale.⁴ The owner could realize cash for these credits by drawing a bill of exchange payable at sight plus sixty days in sterling in London or Liverpool. These bills were "as good as gold" in the United States, since they could be used to redeem obligations in Britain denominated in sterling. American importers typically purchased British goods on credit extended by British or American financial intermediaries in the form of letters of credit, against which they could draw bills payable in London. In order to settle these obligations, American importers bought sterling cotton bills and sent them to London. The result was an active market for sterling bills in the United States.⁵

In Britain, the market for American bills was dominated by the "American" acceptance houses, firms that specialized in the financing of the American trade.⁶ American bills were presented in Britain for payment 60 days after "sight," and bills were routinely "accepted" by the drawees. These firms then obtained short term credits from the Bank of England on the security of the accepted bills.⁷ By discounting the accepted bills, the Bank of England provided liquidity to the entire structure of international trade. The market for "foreign exchange," i.e. sterling bills of exchange, was the major conduit through which economic influences were transmitted between Britain, the United States, and the international financial community.

Within the United States a parallel, but separate, exchange network financed the movement of goods within the country. Domestic bills were drawn all over the country on major financial centers. An active market in bills allowed merchants in different cities to remit funds anywhere in the country in the appropriate local currency. Merchants and shippers purchased "exchange" on another city by purchasing a bill payable in that city. The BUS played a central

role in improving the efficiency of the domestic bill market in the 1820s and 1830s.⁸ In 1835, there were over 600 banks in the country. The bank notes of western banks sold at persistent small discounts in New York and Philadelphia. Domestic bills provided a flexible instrument that could easily account for differences in the value of currency in, say, Ohio and New York. As with sterling bills, as long as banks at both end of the transaction exchanged their notes for specie at par, the range of fluctuations in bill prices was limited by interest rates and confidence. Once banks stopped converting bank notes into specie, however, bill prices and bank note prices could fluctuate widely, especially bills and notes from distant locales.⁹

A primary function of commercial banks throughout the country was buying and selling bills of exchange, and in the process providing credit, liquidity, and currency to the local market. States in the west and south in the 1820s and 1830s were extremely eager to establish banks in their major towns and cities so that they too could participate in the domestic and international trade. Banks were thought to be so important to economic development, that state governments actively promoted the establishment and capitalization of banks.

II. The Data:

Aggregate Measures

The panels of Figure 1 provide information aggregate price movements, land sales, and American exports and imports. Both the price series and the export and import series show what Matthews termed a “double-hump:” a peak in 1837 and a peak in 1839. Land sales peaked in 1836, but they also have a less apparent double-hump. Land sales in 1839 were higher than any year between 1818 and 1853, other than 1835 or 1836.

Cotton Prices

Cotton was the major export of the United States and because of the importance of sterling bills drawn on cotton shipments, cotton price movements were critical for the entire structure of international exchange. Figure 2A graphs the price of cotton in New Orleans. After January 1835 the prices are reported weekly, from 1830 to 1834 only the January price is

included. Cotton prices rose from 10 cents per pound in 1830 to 15 cents per pound, and higher, in 1835. This was the cotton boom. The sharp price declines in early 1837 and mid 1839 stand out clearly, as does a smaller decline in 1841. Figure 2B graphs gross cotton margins: calculated as the difference between the low New Orleans price and the Liverpool price eight weeks later (valued in cents per pound at par currency values). Since it took roughly two months to travel from New Orleans to Liverpool, this represents the gross margin per pound (without accounting for transportation and insurance costs) realized by cotton shippers. When gross cotton margins were negative, as in 1835 and 1837, a sterling bill, drawn on 75 percent of value of the cotton in America, would not be covered by the sale of cotton in Liverpool. The drawees of the bill would either decline to accept it, causing the bill to be returned to America, or accept it and send to America for funds to settle the remaining obligation. In either case, the market for international exchange was disrupted. The severe decline in the net prices realized for cotton shipped in December 1836 and early 1837 was an important cause of the Panic of 1837.

Interest Rates

Figure 2C presents information on the New York and Boston price of 60 day bills payable in London relative to par adjusted by Officer's estimate for interest and currency premiums; interest rates for short term domestic commercial paper in New York and Boston; a comparable rate for short term commercial paper in London; and the Bank rate of the Bank of England.¹⁰ The solid vertical lines indicate each crisis: May 1837, October 1839, and January 1842.

The bank rate had been 4 percent from July 5, 1827 until the Bank of England raised the rate to 4 ½ percent on July 21, 1836 and to 5 percent on September 1, 1836. These increases signaled a significant regime shift at the Bank emphasized by Temin. Nevertheless, fluctuations in the British rates (the bank rate and short term commercial rates) are a small multiple of fluctuations in the U.S. rates. Credit conditions in New York and Boston were extremely tight throughout all of 1836 and early 1837. As long as banks in the United States continued to

redeem bank notes in specie, the price of 60 day bills on London stayed close to par. In May 1837, when banks in New York, followed shortly by banks throughout the country, suspended specie convertibility of their bank notes, 60 day bills on London quickly went to a premium: 4 percent in June, 9 percent in July, and 11 percent in September. The international payments crisis was accompanied by a rapid easing of credit conditions in the United States. Relieved of their obligations to redeem their notes in specie, banks began making loans on more regular terms. Short term interest rates in Boston and New York fell from a high quote of 32 percent in May to a low quote of 6 percent in June. Credit conditions tightened briefly in the winter of 1838 when the New York banks resumed specie payments, but for the remainder of 1838 and much of 1839, interest rates in the United States were high, but stable, at about 7 percent. After resumption, the price of 60 day bills fell back to par or a slight premium, short term rates in London declined gradually, and the Bank of England lowered the Bank rate back to 4 percent on February 15, 1838.

As in 1837, the bank rate rose during 1839, but events in 1839 are dissimilar in two important respects. In the summer of 1839, the specie reserves of the Bank of England began to decline because of bad harvests in Britain and capital investment in the U.S.. The Bank responded by raising the bank rate to 5 percent on May 16, 5.5 percent on June 20, and 6 percent on August 1 of 1839. Interest rates began rising in the United States in July, but did not move sharply upward until September and October of 1839. Unlike 1837, when interest rates had been high for an entire year before the crisis, credit conditions in 1839 tightened only as the banking crisis developed. The BUSP suspended specie payment on October 9, 1839. Since banks in New York and New England did not, in general, suspend specie payments in October of 1839, the price of 60 day bills on London stayed close to par. This is the second difference in 1839, there was no international payments crisis.¹¹ Most banks throughout the rest of the country, however, suspended convertibility in 1839, and many continued their suspension into 1843.

In the collapse of January 1842, there are no notable interest rate movements. The rate

on 60 day bills stayed close to par, neither interest rates in London nor the Bank rate rose in 1841, in fact the bank rate was reduced from 5 to 4 percent in April of 1842. Interest rates in New York and Boston rose from 6 percent in the summer to a high of 12 percent in December, 1841 and January, 1842, but never came anywhere near the crisis levels of 1837 and 1839.

The interest rate and cotton price data show the same pattern: a severe disruption to international trade in 1837. The international payments mechanism temporarily came unmoored as American banks throughout the country suspended specie payments and specie bills drawn on England went to a substantial premium. Neither 1839 nor 1842 witnessed the same disruption in international finance. Cotton price movements were smaller, specie bills remained at par, and American banks in the northeast continued to pay specie for their bank notes. Interest rates in the United States had been high throughout the year preceding the Panic of 1837. Rates spiked again in the fall of 1839, but not until the banking crisis was underway. Rates moved briefly upwards in 1842, but not in the same magnitude as 1837 or 1839.

The Money Supply: the Treasury Data

In 1832, Congress directed the Treasury Department to collect information on every bank in the country on or near January 1 of each year. Table 1 draws on these reports to track the experience of banks from January 1, 1837 to January 1, 1843. The first four rows of the table report Berry's totals for circulation, deposits, loans and discounts, and specie for each year. Temin's estimates of specie in the country are presented in the fifth row and his money supply aggregate in the sixth row. My tabulations of the Treasury data are reported for circulation, deposits, loans and discounts, and specie (rows 7 to 10), paid in capital of banks (11), stock held by banks (12), bank notes held by banks (13), and my estimate of the money supply (14).¹² The money supply is defined as:

(1) Money Supply = Circulation + Deposits + Specie held by Public - Bank notes held by Banks

Specie held by the public is estimated as specie in the country minus specie in banks.

Temin's estimated money supply numbers are slightly higher than mine, and but I exclude

several states (see source notes to tables). Other small differences are to be expected, as my dating of each state's numbers to January 1 may differ slightly from Temin and Berry. The last two rows of the table present an index of the money supply, 1839=100 (15), and a reserve measure: specie/[circulation + deposits] (16).

Banking crises occurred in May of 1837, October of 1839, and January 1842. The Treasury was unable to collect information from banks in every state on exactly January 1.¹³ To gauge the effect of each crisis on the state of the banks, I compare January 1837 and January 1838 to measure the impact of the Panic of 1837; January 1839 to January 1841 to measure the impact of the Crisis of 1839; and January 1 1841 to January 1 1843 to measure the impact of the Collapse of 1842. Two conclusions are apparent: 1) except for a 10 percent rise in calendar 1838, the money supply fell steadily from January 1837 to January 1843. The 22 percent decline in the money supply during the Panic of 1837 was almost identical to the 23 percent decline during the Crisis of 1839, followed by a decline of 15 percent in the collapse of 1842. 2) Although the banking system was hit hard by the Panic of 1837, banks recovered according to every measure in 1838. The banking system was hit hard again in 1839, and in no measure did it recover in 1840, 1841, and 1842 (with the exception of specie holdings in 1842). The Panic of 1837 was a severe shock that the country's banks could absorb with difficulty, the Crisis of 1839 led to persistent declines in the banking system, culminating in the collapse of 1842.

Temin showed that specie flows drove changes in the money supply before 1837. After 1837, the situation was more complicated. In each of the three crisis the money supply declined, but for different reasons. In 1837, the banking system held onto specie, but sharply raised its reserve position by contracting deposits and circulation, raising the specie/(circulation + deposits) ratio from .16 to .22. In 1839, the banking system maintained its reserve position, but lost specie (which it continued to do down to January of 1842). The banking system recovered specie reserves in 1842, but dramatically strengthened its reserve position, raising the specie/(circulation + deposit) ratio from .23 to .33.

Some insight into why this happened can be found in Table 2, which breaks down the changes in banking aggregates by region. The table provides data on specie, deposits, circulation, and loans and discounts of banks in the five regions of the country; for the BUSP; for New York separately (New York is also included in the Mid-Atlantic region); for the country as a whole excluding the BUSP; and for the country as a whole including the BUSP. The columns are paired, the first column computes the percentage change in each variable in the region and the second column the share of the change in the national total explained by the change in each region's total. For example, between January 1837 and January 1838, specie held in banks in the Mid-Atlantic region decreased by 16 percent, explaining 124 percent of the change in national specie holdings. By way of gauging levels, column (9) presents the share of the national total for each measure attributable to the banks in each region in 1839. Column (10) calculates the ratio of that share to the share of the national decline in each measure between 1839 and 1843.

The table tells a clear story: the Panic of 1837 fell heavily on New York. In 1837, specie in New York banks fell by 37 percent, deposits by 49 percent, circulation by 49 percent, and loans and discounts by 23 percent. New York alone accounts for 158 percent of the decline in specie in the country (the decline nationwide was quite small, however, only 4 percent), 33 percent of the decline in deposits, 40 percent of the decline in circulation, and 38 percent of the decline in loans. Nationally there was only a small decline in specie held by banks, while deposits plummeted by 37 percent, circulation fell by 21 percent, and loans by only 10 percent. Every region of the country experienced a sharp drop in deposits (except deposits at the BUSP, where they rose by 12 percent), but the bulk of the decline was located in the mid-Atlantic region: 50 percent of the decline in deposits, 55 percent of the decline in circulation, and 54 percent of the decline in loans.¹⁴

The pattern in and after 1839 was completely different. Declines in circulation were spread evenly throughout the country between 1839 and 1841, and between 1841 and 1843. In every other measure, the Crisis hit hardest in the south and the west. The BUSP was not

included in the Treasury reports for 1841, so a significant part of the decline in the national totals is explained by closing the BUSP.¹⁵ Nonetheless, between 1839 and 1841, banks in the South Atlantic, South Western, and North Western regions explain 50 percent of the decline in specie holdings (83 percent of the non-BUSP decline) and 61 percent of the decline in deposits (90 percent of the non-BUSP decline). The pattern continued through the collapse of 1842. Between 1841 and 1843, specie holdings of the banking system actually rose (all of the rise was in the Mid-Atlantic region), so the decline in specie in the south and west explains -126 percent of the change in specie, the south and west explain 63 percent of the decline in deposits, 81 percent of the decline in circulation, and 80 percent of the decline in loans. The later stages of the collapse were concentrated almost exclusively in the south and west.

Over the entire period of the contraction between 1839 and 1843, banks in the South Atlantic, South Western, and North Western regions account for 88 percent of the decline in specie holdings (more than 100 percent of the non-BUSP decline), 72 percent of the decline in deposits (96 percent of the non-BUSP decline), 55 percent of the decline in circulation (61 percent of the non-BUSP decline), and 51 percent of the decline in loans and discounts (64 percent of the non-BUSP decline). In that same period, New York accounts for -22 percent of the change in specie in banks, -3 percent of the change in bank deposits, and only 12 percent of the change in circulation and 8 percent of the change in loans. Unlike the Panic of 1837, when the weight of the financial and credit crisis fell squarely on New York, for the remainder of the depression New York banks were relatively unharmed. The table explains the underlying reason that banks in the south and west suspended specie payments in 1839 and continued the suspension until 1843: they continued to lose specie and deposits. It also explains why banks in New York and New England did not need to suspend: they stopped losing specie after 1837. But it does not tell us why southern and western banks were hit so hard in 1839 and thereafter.

Van Court's Bank Note data

In the system of domestic exchange, the notes of individual banks throughout the country

were expected to sell at par in their local markets, but their prices relative to par varied across the country. Bank note prices are an alternative source of information on the banking system. Bank note prices (discounts) in Philadelphia were collected and published each month in Van Court's reporter, beginning in January 1839.¹⁶ These prices reflect the discount (+) or premium (-) paid on the bank notes of individual banks throughout the country in Philadelphia. Gorton has shown that the modal bank note price is a reasonable indicator of the condition of banks notes in an individual state, and I use Gorton's modal values in the figures that follow.

The Van Court data was supplemented by information gathered by the Treasury department on bank note prices at quarterly intervals in New York from 1831 to 1838. These data were published in an 1838 Treasury report and reprinted in Elliot's *Funding System*. The Van Court data were converted into New York City prices to join the two series.¹⁷ There is also a series for New York banks, representing the "country" banks outside of the city.

Figure 3A presents bank note discounts for a selection of states throughout the country. Massachusetts is the representative New England state (note discounts for Massachusetts, Vermont, New Hampshire, Rhode Island, and to a lesser extent, Connecticut banks all exhibit the same pattern of movement over time). Southern states are shown in Figure 3B.¹⁸ Gaps in the series for each state reflect two phenomena. First, Van Court may simply have failed to report prices for that state over that period. Second, no market may have existed for the notes of a particular bank (or state). There is no way to discern which is the case from the raw data, but clearly the suspension of trading in some states during financial crises, e.g. Louisiana in 1841 and 1842, occurred because the notes of those banks had temporarily become too risky to price.

Some state are not included in the figures. Notes from banks in Mississippi, Florida, Arkansas, and Michigan ceased to trade at all after 1837. Illinois is not included because discounts on the Illinois banks (there were only three) literally went off the chart in 1841 and including Illinois compresses the other states to illegibility. Absence of these states from the charts indicates that their notes were no longer trading long before 1841. Missouri, Kentucky,

and Tennessee are excluded from the figure because of spotty records. Figure 3C gives average bank note discounts in all southern and western states, where the average discount is a weighted average of the modal note price of all states, weighted by each state's share of note issue.

The figures show the effect of the three crises distinctly. In 1837, northeastern banks outside of New York experience small discounts in their notes. Discounts on the notes of southern banks rose substantially, to roughly 12 percent. With the exception of Ohio (discounts of about 8 percent) the other western banks were too young to be reported on or yet to be established in 1837. In 1839 the reaction is more marked. Banks throughout the country, except in New York state, experience substantial discounts: 5 percent in New England, 8 percent in Pennsylvania, 10 percent in Maryland, 15 percent in the southeast, and 20 percent in the southwest and northwest. The sharp rise in bank notes discounts reflects a breakdown in the network of internal commerce, and in these terms, the Crisis of 1839 was far more serious and prolonged than the Panic of 1837. Substantial discounts on the notes of banks in Ohio, Illinois, Georgia, Alabama, Louisiana, and Tennessee persisted through 1841. Even Pennsylvania bank notes traded at discounts of 3 and 4 percent in 1841, a wide enough gap to prevent any bank so close to New York to resume specie payments, the arbitrage opportunities would drain the weaker bank of specie within weeks, if not days.¹⁹

The pattern of regional crisis was magnified again in late 1841 and first months of 1842. Notes from banks in New England and New York remained at par, discounts rose to 8 percent on Pennsylvania, Maryland, North Carolina, and South Carolina banks. The crisis devastated the west and south. Discounts reached 25 percent in Ohio and Illinois; 20 percent in Virginia, Indiana, Georgia, Alabama, Louisiana, Tennessee, and Kentucky. Remember that notes in Michigan, Arkansas, Mississippi, and Florida no longer traded at all. Later in 1842, the crisis in Louisiana and Alabama intensified and discounts of bank notes for both states briefly reached 40 percent. This evidence suggests that the crisis in the internal commercial relations of the country at the beginning of 1842 was deeper than it had been in 1837 or in 1839.

Figures 3A and 3B come as a something of a shock to an American economic historian. This is, literally, an overlooked event. Thorp's *Business Annals* has only this to say about 1842: "resumption with panics in the interior, especially New Orleans, spring;" (p. 123). Mitchell's extended introduction to Thorpe says nothing about a business recession in 1842, noting 1837, 1839, and 1845 ("brief recession, May"). There is nothing in the spring of 1845 to compare to the disruption in 1842.²⁰

Could this just be fluke of Van Court's data? There certainly was no general credit crisis – interest rates rose only a small amount in the first months of 1842, nothing by comparison to 1837 or 1839 (Figure 2C). Short term rates in London stayed flat and low, the Bank of England lowered in the Bank rate April of 1842. 60 day bills traded at a slight premium relative to par in New York and Boston, the dollar was strong. There was still a business depression in England, but no particular crisis. Richard Sylla, Jack Wilson, and Robert Wright have recently collected a wealth of records on ante-bellum stock markets. Using their preliminary data, prepared with the assistance of Namsuk Kim, Figures 4B and 4D show, respectively, the prices of the three largest Philadelphia banks and the four largest New York banks. Something bad was happening in the winter of 1842.

The data on bank note discounts measure, in a rough way, the state of the market for domestic exchange within the United States. Gross cotton margins measure the state of the market for international exchange, again in a rough way. Figure 3D combines the cotton margins from Figure 2B with a weighted average of bank note prices for western and southern states, Figure 3C. The figure makes clear that the Panic of 1837 had an important element of international disruption, while the Crisis in 1839 and the Collapse in 1842 were progressively domestic in nature. What happened after 1839, and why has it escaped the notice of historians, economic historians, and macroeconomic historians?

III. State Borrowing and Investment

The behavior of state governments after 1836 is perhaps the most poorly understood

aspect of the depression of the 1830s. Table 3 provides information on the amount of total debt issued by states and year from 1835 to 1841.²¹ The figures are for debt authorized in a given year that was still outstanding on September 1, 1841. The table does not give the year the debt was issued, since a substantial amount of debt was issued a year or more after it was authorized. Nor does it include retired debts, so New York's Erie Canal debts and Ohio's original canal debts are excluded. Pennsylvania, Maryland, Indiana, Michigan, Illinois, Arkansas, Louisiana, Mississippi, and Florida defaulted in 1841 and 1842. Florida, Mississippi, Louisiana, Arkansas, and Michigan ultimately repudiated all or part of their debts in 1842 or the years that followed. Default and resumption dates are given in Table 4.

Three prominent features of state borrowing are relevant. The first is timing: the massive increase in state borrowing occurs in and after 1837, not before.²² The Panic of 1837 did nothing to slow state borrowing. By 1841, state debt stood at \$198 million, half of which was incurred between 1837 and 1840. The second is geography. The table is divided into four panels, based on geography and the purpose of debt issue. States in the South that borrowed primarily to establish banks did almost all of their borrowing in 1837 or before, the one major exception being Mississippi's investment in the Union Bank in 1838.²³ States in the South that borrowed for mixed purposes borrowed largely in 1837 and 1838 (most of this debt was for transportation). The Northwestern states – Indiana, Illinois, and Michigan – borrowed very little before 1836, but then borrowed heavily in 1836 (Indiana), 1837 (Michigan and Illinois), 1839 and 1840 (Illinois). States in the Northeast had borrowed regularly before 1835 and began borrowing heavily again for transportation projects in 1838 and later. The majority of state debt issued in 1839 and 1840 is by New York, Pennsylvania, and Maryland. The third feature is purpose. With the exception of roughly \$5,000,000 borrowed for banks in the Northwest, all of the borrowing for banks occurred in the South, and several Southern states borrowed exclusively to establish banks. While in the Northeast and Northwest, the predominate purpose of borrowing was transportation improvements.

The details of timing and geography play a central role in the arguments that follow. Southern states borrowed primarily to establish banks, and those states had all completed their borrowing by 1838. Northwestern states borrowed primarily to finance transportation, with some bank investment, but did not start borrowing until 1836. Indiana authorized its big bond issue on January 27, 1836; Illinois on February 23, 1837 (and again on February 2, 1840); and Michigan on November 15, 1837. Construction on canals and railroads had been underway for less than two years, on projects that were anticipated to take seven or more years to complete, when the Crisis hit in 1839. By 1840, construction had largely stopped in these three states. Northeastern states borrowed exclusively for transportation, their original projects had been started long before 1830, their current projects were authorized in the mid-1830s, and construction and borrowing continued on well past 1839.

State borrowing played several important roles in the macro-economy besides financing infrastructure investment. The first was the expansionary effects of such large public works expenditures, timed as they accidentally were, to offset the Panic of 1837. Second, the United States experienced higher rates of inflation than Britain for much of the 1830s, a condition that would normally cause specie to flow from the U.S. to Britain, yet the U.S. was a constant recipient of specie. The United States also ran persistent trade deficits (figure 1C) in the 1830s, averaging \$26 million per year between 1831 and 1839. British investment in state securities played a prominent role in offsetting these two forces: preventing gold from leaving the country and financing the large trade deficit. Figures on the exact amount of foreign investment in state debts are unavailable, but a round estimate places it at somewhere near \$100 million by 1840.²⁴ When British confidence in American state bonds faltered after 1839, it not only created new troubles for states who wished to borrow, it had immediate effects on the economy. In Temin's account of the 1839 crisis, credit stringency in Britain played a central role in bringing on the crisis, both by its effects on financial markets and by its effects on state spending and borrowing. Before we can evaluate Temin's arguments, we need to look more closely at how, and why, the

states issued their bonds.

Selling Bonds on Credit:

One of the more peculiar aspects of bond sales in the 1830s was the extensive use made of credit sales. Credit sales occurred when a state issued bonds, usually to a financial intermediary like an investment bank, and the bank promised to pay for the bonds in regular installments in the future. States were usually liable for interest on all of the bonds issued immediately, even if the bonds were not paid for. Credit sales were typical in western states. All \$5 million of the Mississippi issue in 1838 used to finance the Union Bank was sold on credit to the BUSP. Indiana made credit sales of roughly \$3 million in 1838 to the Morris Canal and Banking Company of New Jersey. Michigan sold most of its \$5 million loan on credit jointly to the Morris Bank and BUSP in 1838. Illinois made its first large bond sale on credit to John Delafield, president of the Pheonix bank of New York, and managed to float several millions in bonds in Britain in 1840 with Wright and Company.²⁵

Credit sales were used for several reasons. First, states were borrowing to finance construction projects that would take several years to complete. Credit sales produced a steady flow of funds without continually having to go into the bond market. Second, credit sales were advantageous to the banks, although often they were bad deals for the states, and as more states issued bonds in 1837 and 1838 and bond prices declined, credit sales were one way to induce investment banks to handle large bond issues. It was typically the banks that approached the states about credit sales, however. Third, states did not have professional financial advisors to handle their bond issues, and western states in particular relied on the services of eastern bankers, who preferred credit sales. Bonds were usually authorized by the state legislature, with a provision that they could not be sold at less than par, signed by the governor, and given to a number of state officials to market. Sometimes bonds were sold by the Governor, sometimes by members of the canal fund, sometimes by the Treasurer, and sometimes by agents of the state. It is no surprise that state legislatures included provisions requiring that the bonds

initially be sold at par or higher, selling bonds below market price to friends and associates was a simple way to for officials to profit from their office.²⁶ But states often went a step further and required that the initial purchaser, e.g. an investment bank, not resell the bonds at below par (or other specified price). The provision does not make sense if the initial purchaser pays cash for the full value of the bonds, but it makes sense if bonds are sold on credit.²⁷ First, if the bonds are sold at full price, the seller has the resources to pay the state. Second, if the bonds are not sold they can be returned to the state. Third, the provision gives the state a legal threat to repudiate the bonds if they are sold below par. The threat was credible, when Mississippi repudiated, it argued the technicality that its bonds were sold below par. Minimum bond resale prices created a problem for banks and other bond holders who acquired bonds in a falling market. It also helps explain some apparent anomalies in the behavior of banks in 1839 and later.

IV. Explanations

Temin and others:

Temin laid the blame for the Panic of 1837 at the feet of the Bank of England, its attempt to stem the outflow of specie reserves in the summer of 1836 by raising the bank rate, and its unfortunate policy of refusing to accept American paper. When the Bank of England undermined the market for commercial paper the price of cotton collapsed (Figure 2A), and because prices fell earlier and faster in Liverpool than in America, millions of dollars in sterling cotton bills were refused in Britain or accepted and returned to America for additional payment. These international pressures were transmitted through the cotton market focused in New York. Rousseau and other have laid the blame for the Panic of 1837 at the feet of Jackson's specie circular and the Surplus Distribution, both required the redistribution of specie balances from New York to outlying states. Rousseau's domestic forces pivot on specie withdrawals from New York banks. The Treasury data show clearly that New York banks bore the brunt of the Panic (Table 2). Temin and Rousseau are both right: international and domestic forces were important in 1837.

The Crisis of 1839 plays a large role in Jenks's study of British overseas investment. Jenks shows how the Bank of the United States planned to expand its presence in Britain after it became the BUSP in 1836. Part of Biddle's plan involved extensive operations in state bonds (as we will see shortly) and more active participation in cotton markets. In 1837, Biddle bought cotton on his own account. He purchased cotton again in 1838, realizing a large profit, and again in 1839, sustaining a loss of over \$900,000. Coincident with the cotton losses the BUSP was forced to suspend specie payments. Jenks's concern is international capital flows, not the American economy, but, at one point, he lays the blame for events in 1839 at the feet of Biddle and his cotton speculations: "the collapse of Biddle's system."²⁸ Hammond amplifies on Jenks, stressing the heroic attempts of Biddle to create an American presence in international financial markets and saving the economy after the Panic of 1837. The failure of the cotton speculation, the suspension of specie payments by the BUSP, and the collapse of capital flows is central for Hammond.

In Temin's analysis, the Crisis of 1839 was similar to the Panic of 1837, "There is no single cause of the crisis in 1839, and the causes must be sought in the dislocations of trade and finance that started in 1837. The analysis of the proximate causes of the new crisis will make the connections with earlier events clear." (p. 152) He emphasizes the Bank of England's discount policy, the importance of international factors, tightness in international credit markets, and the declining price of cotton. Although the suspension of specie payments by the BUSP in October of 1839 is the event most prominently associated with the crisis, Temin exonerates the BUSP, as he did the BUS in 1837: "Biddle maintained that the Bank was blameless, but opponents of this view have not been lacking. It can be seen from the foregoing tale that the forces ending the boom were independent of the Bank, much as the forces initiating it had been." (p. 154). Temin suggests another conduit through which international forces caused the Crisis: "The state projects initiated in the late 1830s had been started in the expectation of external [*international*] financing.... Unfortunately, the new inflow of foreign capital did not continue [in 1839]... and

the manifold projects of the states were abandoned.” (p. 153) When foreign capital inflows stopped, construction on canals and railroads had to stop too. In addition to the direct employment effect, America’s balance of trade deficit could no longer be sustained, imports dropped sharply in 1840 and exports in 1841.²⁹

Jenks, Hammond, and Temin raise two sets of questions whose answers are unclear. Did Biddle’s cotton speculation bring down the BUSP? What was the role of international versus domestic pressures when the BUSP suspended in October of 1839? And what role did state debt have in the bank’s demise? Second, was there a sudden reduction in the flow of British capital to American states? Did British suddenly and sharply raise the rates they charged on American loans? Were states forced to abandon their manifold projects because of a lack of foreign capital? Did they abandon their projects?

Biddle, Cotton, and the BUSP:

Prior to losing its national charter in 1836, the bank of the United States had been a conservative, responsible, commercial bank. Table 5 shows the bank’s balance sheet in March of 1836. Out of assets of \$74 million, the bank held \$58 million in short term bills of various types. After obtaining a new charter from Pennsylvania, the bank lost none of its reputation for probity. This put Biddle and the BUSP in an enviable position between the Panic in May and the fall of 1837. London bankers still accepted BUSP obligations at par. In New York, the BUSP sold sterling post-notes payable in London for a premium of 11.25 percent in New York currency. Since New York currency traded at a 10 percent premium to Louisiana currency (figure 3B), Biddle took cash from the sale of post-notes to purchase cotton in the south. Once the cotton was in hand, he drew sterling bills on the cotton. Biddle and the Bank realized immediate profits on these exchange operations.³⁰ The bank then covered its open liability in the post-notes by remitting the bills to London to redeem the notes. Although Biddle’s 1837 cotton operation was bold and audacious, it was profitable, and it fell within the normal seasonal and regional pattern of bill sales and purchases the bank had engaged in for more than a decade. The

BUSP simultaneously provided liquidity to the domestic market by substituting its post-notes for the specie that otherwise would have flowed to Britain.³¹ As table 2 shows, the BUSP increased its specie holdings and deposits in calendar 1837, a measure of the confidence it still enjoyed.

By 1838, however, the nature of the BUSP was changing. When the bank lost its federal charter and was incorporated in Pennsylvania, the Philadelphia bank financed the sale of its branches by holding the obligations of the new owners. By doing so, the BUSP became a large investor in banks throughout the south and west. The original charter prohibited the Bank from purchasing stock in private corporations, but in June of 1836, the charter was amended to allow the Bank to purchase the stock of other banks.³² In 1836 and 1837, the bank acquired a controlling or substantial interests in the Merchant's Bank of New Orleans, the Insurance Bank of Columbus Georgia, a one quarter interest in the Morris Canal and Banking Company, as well as interests in many other banks and transportation companies.³³

The bank's move into private investment banking was complimented by a similar move into public investment banking. The BUSP took the entire \$5,000,000 Mississippi bond issue in 1838, which it purchased on credit. It partnered with the Morris Bank in the credit purchase of Michigan bonds. It took several millions of Illinois bonds. And by the terms of its new charter it was required to purchase Pennsylvania bonds. Between its private and public investment activities, the BUSP had ceased to be a commercial bank by 1839. As shown in Table 5,³⁴ by April of 1839, the banks assets were still \$78 million, but it held \$12 million in stock in other banks and corporations and \$5.6 million in state bonds (by October 1839, the bank held over \$15 million in state bonds). At its closure in 1841, state bonds and private stocks made up \$31 million of the bank's \$70 million in assets. As 1839 progressed, the BUSP not only became increasingly illiquid, its solvency depended on the market for state bonds and the stocks of private banks.

As part of its transition to a investment bank, the BUSP opened an agency in London, headed by Samuel Jaudon, and a partnership in Liverpool, Humphreys and Biddle. The

Liverpool partnership handled Biddle's cotton shipments and the London agency marketed state bonds and handled the financial side of the cotton operation. Biddle's outpost in London was accompanied by brash and confident statements that America, and the BUSP, were now ready to handle their own affairs and not depend on foreign finance. The bank was legally prevented from purchasing cotton directly, but Biddle, operating through a series of intermediaries, purchased cotton on his own account with credit furnished by the Bank. "This arrangement continued during the years 1837, 1838, and 1839, the transactions of which amounted to \$8,969,450.95. The shipments were made principally to Biddle & Humphreys; were paid for by drafts on Bevan & Humphreys; the funds advanced by the bank, and the proceeds remitted to Mr. Samuel Jaudon, agent of the bank, in London."³⁵ Not all of Britain was happy, including cotton manufacturers who suspected Biddle of trying to rig the market for raw cotton.

Jenks lays blame for the depression that began in 1839 on the failure of Biddle's "system" and his cotton speculation, but it is a weak sort of blame.³⁶ Jenks recognized that the cotton speculation could not have brought down the bank, losses were only \$962,524.13 at an institution capitalized at \$35 million.³⁷ The bank's bond operations brought much greater losses. The bank paid Mississippi \$5,000,000 (less commission) in 1838, and the bank held over \$3 million of these bonds in late 1839. The bank used over \$12 million of unsold state bonds as collateral on a series of loans in late 1839 and 1840 (discussed below). Ultimately, the stockholders lost the bank's entire investment in these bonds. What brought down the bank was not stringency in international markets or the declining price of cotton, but bad management and a flawed investment strategy.

Hammond's repetition of Jenk's story is also odd, since Hammond clearly understood that the BUSP's suspension in October of 1839 had nothing to do with international pressures on the bank. When American banks resumed specie payments in the spring of 1838, the price of 60 day bills on London fell back to par, and the arbitrage motivation for the BUS's post-note issues disappeared. Yet, in the spring and summer of 1839, faced with declining specie reserves,

Biddle's successors at the bank (he had retired in 1838, but remained active in the bank's affairs) increased the bank's sale of post notes dramatically. In the late summer of 1839 the Bank unsuccessfully attempted to force a suspension in New York; the surge in post note issues was part of the attempt to break the New York banks by acquiring New York bank notes.³⁸ The short run effect of the post note sales in New York and Boston was to make banks in those cities the debtor of the BUSP, but the longer term effect was the reverse. Ultimately the post notes had to be redeemed, and in October 1839, Boston and New York banks redeemed them with a vengeance and broke the BUS. Smith, in uncharacteristically strong language, "takes the view that the large sale of post notes and foreign bills of exchange at this time was a futile and stupid act of desperation." Smith and Hammond both agree: "So it was clear that the actual pressure that closed the bank was that of maturing obligations in the domestic market... Niles said explicitly that the bank had been compelled to stop specie payments because of the demands from New York and New England."³⁹

The Europeans did not desert Biddle, nor did they increase pressure on the Bank in the wake of the suspension. Jaudon was able to place two large loans in London in October and November of 1839 and a third in Amsterdam in January of 1840, using \$12 million in state bonds as collateral.⁴⁰ The bonds pledged for these loans amounted to 60 per cent of the Michigan and Mississippi bonds issued in the late 1830s, bonds the bank had acquired and paid for, but had not yet sold to third parties. The ability of Jaudon to raise funds in Europe after October 1839 is testimony to Europe's willingness to support the Bank. European financiers held large portfolios of American securities on which they were about to lose substantial sums, and they had a vested interest in keeping Biddle afloat. When the Bank failed 197,551 out of 350,000 shares were held in Europe. The Europeans paid dearly for their attachment to Biddle, but they did not cause the bank's collapse.⁴¹ Ultimately, the Bank of the United States of Pennsylvania failed because its assets became illiquid and fell in value, a direct result of Biddle's decision to shift its portfolio from short-term to long-term obligations. The immediate cause of

the Bank's suspension in 1839, however, was pressure from creditors within the United States.

Capital Flows and Abandoned Canals:

International pressures did not cause the BUSP to suspend payments in October of 1839, but did British unwillingness to lend to American states cause capital flows to dry up and the states to abandon their internal improvement projects? Here is where the geography and timing of state borrowing plays a critical role. Southern states borrowed primarily for banks and their borrowing was completed by 1838, so they did not abandon investments because of British unwillingness to lend. Northeast states borrowed for transportation projects, and both construction and borrowing continued in New York, Pennsylvania, Ohio, and Massachusetts until 1842. Adverse financial conditions made it harder for these states to borrow, but it did not lead them to abandon their projects. Indiana, Michigan, and Illinois found themselves credit constrained in 1839, and only there did construction on railroads and canals stop in 1839 and 1840. Although we do not have reliable figures on the quantity of American bonds issued in Britain from 1837 to 1842, we do have reliable prices in London and New York for some bond issues. We can also examine the experience of individual states after 1839.

The key element in this story is credit sales of bonds. In 1838, Indiana sold over \$5 million in bonds on credit to various banks, the most important being the Morris Canal and Banking Company of New Jersey. Michigan sold bonds on credit to the Morris Bank and the BUSP, with each bank individually promising to make installment payments on their share of the bonds. Illinois began borrowing heavily in 1838 and issued bonds on credit to the Phoenix Bank of New York and through it president, John Delafield. All three states were in over their heads. Indiana authorized a \$10 million issue of 5 percent bonds in 1836 when the state population was only 600,000 and state revenues only \$50,000 a year. Illinois authorized \$10.25 million in 1837 with a population of 400,000, and Michigan \$5 million in 1837 with a population of only 200,000. By the summer of 1839, all three states were using borrowed funds both to fund construction and to pay interest on already issued bonds. Because of credit sales, the states were

paying interest on some bonds for which they had not yet been paid.

In July 1839, the Morris bank informed Indiana that it would not be able to meet its installment payments. In August 1839, Indiana stopped construction on its canals and railroads. It was immediately apparent that Indiana would have great difficulty servicing its bonds without further loans. The state tried to stave off default by raising taxes, but in January of 1841 the state went into default. The Morris Bank also defaulted on Michigan. By early 1840, Michigan stopped construction on its projects. The state continued to pay interest out of the installments paid by the BUSP, until the BUSP went out of business permanently in February of 1841, at which point Michigan defaulted. Delafield defaulted on his agreement with Illinois in 1839 as well. Although Illinois continued to work on some of its projects into 1841, by 1840 construction had stopped throughout most of the state.⁴²

Construction stopped in these states because eastern investment banks defaulted on already issued bonds, not because the states could not issue new bonds. Did the Morris Bank default on Indiana and Michigan because the bank held a large portfolio of bonds that it hoped to sell in Europe? Although the details of the bank's history are sketchy, the surviving minutes of the Board of Directors, make it clear that the Morris Bank never planned to hold the Indiana bonds it acquired. The company was established in 1827 to build the Morris canal, and its banking privileges were expanded in 1833. At that time the company was having difficulty paying the mortgage on the canal, which it had secured from Dutch creditors through the intermediation of Morrison Cryder of London. In April of 1836, the Morris Bank was approached by Thomas Biddle and Company (Thomas was Nicholas's brother) in the matter of purchasing 3,000 shares of Morris stock. The sale was approved (the BUSP would eventually acquire a 25 percent stake in the company, whether this was the stock purchased originally by Thomas Biddle is not clear.) In the months that followed Thomas Biddle suggested a scheme in which the bank acquired Indiana bonds (on credit), paid for them with post note issues and bills drawn on London, and then remitted the bonds to London to cover the bank's obligations in

Europe.⁴³ From the very inception of the plan, the Morris Bank intended to use Indiana bonds to settle other obligations of the bank, not to market the bonds to the public. By 1837 and 1838, the banks minutes show the Bank had become a high-flying investment bank, staying one step ahead of its creditors only by issuing more of its own debt in the form of post-notes (similar to the BUSP). When the post-notes came due and the bank defaulted in 1839, it had no Indiana bonds in its possession. The Morris Bank's speculation was the result of bad decisions and bad management on the part of the bank in America, not an inability of the bank to market bonds in London.

The Morris default had immediate and devastating effects in Indiana. Land values in Indiana in 1835 averaged \$5.44 an acre. Indiana passed its canal bill in February of 1836 and by the 1837 tax year average land values rose to \$10.03 an acre. Construction on canals and railroads throughout the state stopped in the summer of 1839. By 1842, average land values had fallen back to \$5.34 an acre statewide (13,646,412 acres of land valued at \$72 million). The number of acres subject to taxation more than doubled between 1837 and 1842, but the total value of land in the state for tax purposes was slightly lower in 1842 than in 1837. Construction stopped in August of 1839 solely because the Morris Canal and Bank Company defaulted on its obligations to the state. Land values fell because canal construction stopped, and the state was forced to default because land values fell.⁴⁴

Events in Indiana were unique in the summer of 1839, although they would become all too common by 1841, and were reflected in the price of Indiana bonds in London. Figure 2D gives the yield to maturity in London from 1835 to 1843 for state bonds from Indiana, Ohio, and an index of states that did not default. In the summer of 1839 there was a sharp upward shift in the yields on Indiana bonds, accurately reflecting the perception that Indiana was in trouble.⁴⁵ But bond yields on American state bonds in general rose gradually from 1836 through 1840. Yields spiked when individual states defaulted. Gradually increasing rates did not mean that American states were shut out of British markets: both Ohio and New York continued to borrow

well into 1840.⁴⁶ As interest rates rose, however, they were more likely to borrow from domestic sources, an important source of the collapse in 1842.

After the Crisis:

Events in 1839 were influenced by domestic and international forces. British credit markets began tightening in the late spring (figure 2C), cotton prices peaked in May and declined sharply over the summer (figure 2A). Declining cotton prices weakened the position of banks throughout the South. Declining prices for land and wheat worsened the situation in the northwest.⁴⁷ A domestic payments crisis developed in the fall of 1839, however, not an international payments crisis.⁴⁸ As early as August of 1839, the discounts on the bank notes of southern and western states began rising in Philadelphia.⁴⁹ In August, the domestic crisis in state finances began with the Morris default on Indiana. As the crisis spread to Michigan and Illinois, the value of northwestern state bonds began to fall in London and America, imperiling the assets of the BUSP. When the BUSP suspended in October, the discounts of other Pennsylvania bank notes, which had traded at a 1 percent premium in New York, jumped to a 6 per cent discount. The discounts on southern and western bank notes rose immediately in New York and Philadelphia. Since New York and New England banks continued to pay specie for notes, the southern and western and Pennsylvania banks had to suspend payments or risk immediate specie drains from arbitrageurs.⁵⁰ High discounts on southern and western banks continued through 1840 and 1841, and many of these banks did not, and could not, resume convertibility until 1843. When the BUSP tried to resume payments in January of 1841, it was quickly driven out of business entirely.

Before the general banking panic began the west and south in October, eastern investment banks like the Morris Bank and the Phoenix bank had already defaulted on their obligations. The failure of a small number of eastern banks was immediately felt in the west. Between 1837 and 1839, credit sales handled by banks like the BUSP, the Morris Bank, and the Phoenix Bank amounted to over \$20 million of the bonds issued by the newest and most

undeveloped states.⁵¹ At the same time, Ohio, New York, Massachusetts, Pennsylvania, and Maryland were borrowing heavily. In just three years, a financial system already racked by a severe financial crisis was expected to market \$80 million in bonds (and an additional \$20 million in 1840). Conditions in the west exacerbated the financial situation in two ways.

First, because the investment banks had defaulted on their obligations to pay installments on credit sales, the states immediately requested that the bonds for which they had not been paid be returned. When that turned out to be impossible, all three states began actively to consider repudiation. News of deliberations reached New York and London and weakened the market for all state bonds. Second, in several states like Illinois, Indiana, Kentucky, Maryland, Pennsylvania, and Michigan (as well as free banks in New York) state banks held large amounts of state bonds. The collapse of Illinois finances brought down the state bank in 1842. In Indiana, the state bank negotiated a swap of its state bonds for the state's holding of bank stock. Once it had separated its fortunes from the state government, the Indiana state bank went on to be one of the most conservative and stable banks in the country. Nationwide, the increased holdings of state bonds by the banking system is reflected in the holdings of "stock" in Table 1. Between 1837 and 1840, bank holdings of stock rose from \$12 million to \$37 million. Weaknesses in state bonds created problems for banks throughout the country.

Southern banks were hard hit by declining cotton prices, particularly those southern banks whose primary assets were mortgages on cotton lands. As defaults on mortgage payments rose, the banks were forced to suspend specie payments and dividend payments. Because the dividend payments on state stock holdings in the banks was dedicated to paying interest on state bonds, the bond holders now came to the state's demanding payment. In Florida, Mississippi, Louisiana, and Arkansas, the states refused to pay interest and the state bonds went into default.

Eastern States and Western bank notes

What remains to be explained is why the national market for bank notes suffered such a severe disruption in late 1841 and early 1842. Why didn't this market return to normal as it had

after 1837? The widespread decline in the prices of western and southern notes suggests a common cause was at work, but there was no distinct western or southern crisis in late 1841 or 1842, and western state defaults predate the bank note crisis. I have already noted the importance of eastern investment banks in bringing on the crisis in western public finance in 1839. Events in the east, in New York and Pennsylvania continued to have an influence in the west. As shown in Table 3, Ohio, New York, and Pennsylvania continued to borrow in 1840 and 1841. As credit markets tightened, interest rates on all American state bonds rose in London (figure 2D), and those states turned to their own banks for additional loans. A second default crisis built in late 1841, a crisis centered in New York, Pennsylvania, and Ohio. If eastern banks were unwilling to hold western southern bank notes and discounts on bank notes stayed at 20 percent, there would be no resumption of specie payments.

The four states with the largest debts in 1841 were Pennsylvania, \$36 million, Louisiana, \$24 million, New York, \$22 million, and Ohio, \$21 million, accounting for over half of the state debt outstanding at the end of 1841. All four were large and prosperous states and there was little doubt that these states could meet their interest payments if they choose to. The unanswered questions were how they would meet their obligations and what would they do to their banks in the process. Uncertainty about state debt policy, state taxation, and state relations with their banks reached a critical point in the winter of 1842.

Ohio embarked on an ambitious expansion of its canal network in 1836. Since 1839, Ohio had pressured its banks to purchase bonds as it became more expensive to market bonds in New York and in Europe. By 1841, the finances of Ohio were in serious straights and, in January of 1842, Ohio faced prospects of an immediate of default. The state authorized the Canal fund to act illegally and the fund “issued to the Ohio Life & Trust \$300,000 in state bonds as security on a \$200,000 loan, to be repaid within ninety days.... only by risking their own fortunes and by enlisting the aid of the Trust Company in an illegal operation did the board save the state’s credit.”⁵² In the elections of 1841, a Democratic majority replaced a Whigs majority

in the state legislature. The propriety of the illegal loan was debated intensely by the newly elected Democrats in the winter of 1842: “The long duration of the debate at Columbus over the illegal loan made the state’s creditors justifiably uneasy. Unfortunately, false rumors spread to New York that the legislature had indeed repudiated the agreement. Acting on this information, the New York agent of the Ohio Life & Trust held an auction sale of the bonds he held as security for the loan. With buyers and sellers under the impression that the state had repudiated, prices at the auction ranged from only 50 to 55 per cent of face value.” (Scheiber, p. 152.) During the crisis, Ohio bank notes traded at deep discounts in the east. Throughout the crisis the state had been at odds with most of its banks, and in 1843, it allowed the charters of a majority of banks to expire.

In Pennsylvania, the state forced the BUSP to resume specie payments in January of 1841, an attempt that resulted in the permanent closure of the bank in February. The state had relied on the BUSP to market and purchase its bonds and was now forced to borrow from other banks. The situation in Pennsylvania was especially disturbing, as the state was the largest single debtor in the nation. Prices of Pennsylvania state bonds and Philadelphia bank stocks declined steadily through 1841, Figures 4A and 4B. The close connection between the health of state finances and the banks is apparent in the two series, Pennsylvania banks held over \$4 million in state bonds on January 1, 1841. The state enacted an ineffective property tax in 1841 and struggled to find a way to meet interest payments.⁵³ A requisition from the banks followed in November when,

“Governor Porter notified the banks that by the terms of their charters they were bound to loan a sum not exceeding 5 per cent of their capital to the Commonwealth, to hold themselves in readiness to do so on the 1st of February [1842], and by these and other means he had accumulated in the Bank of Pennsylvania \$859,000, to meet the February interest of 1842. That institution was by law the depository of the state funds, and its agent for disbursing interest. Its credit being shaken, the Governor and State Treasurer endeavored to induce it to pay out the interest in advance, as well as to quiet the public and to get the money out of the bank; but he received continued assurance from several of the directors, up to Friday evening, the 28th, of the bank’s ability to pay over on the 1st of February. On Saturday, the 29th, however, in consequence of some of the other banks

refusing to receive the notes of the Bank of Pennsylvania, a run was made on that institution, which was met until the closing hour of the day. But being satisfied that this run would be continued on Monday, and convinced that the funds of the Commonwealth had been paid out to meet other demands upon the bank, the governor procured an injunction, and recovered from the institution \$500,000 of the State's money. The State interest was thus delayed for February, and August could not be paid at all.⁵⁴

Pennsylvania forced its banks to make loans to the state in November 1841 and precipitated a run on the Bank of Pennsylvania at the depth of the crisis in February of 1842. The prices of Philadelphia bank stocks remained depressed throughout 1842, until the state determined that it would fund interest payments by issuing its own "relief notes" and not make any more demands on the state banks. Pennsylvania state bonds were in default until 1845.

New York was also in serious financial straits by 1841. As in Ohio, the state expanded its existing canal system in the late 1830s. The market for New York state bonds held up through the Panic of 1837 and the Crisis of 1839, but investors began to lose confidence in 1841 as shown in Figure 4C and 4D. By 1841, as interest rates on American bonds rose in London, New York turned to its own banks. New York banks acquired \$3.6 million in state bonds in 1840, \$1 million in 1841, and over \$7 million in 1842 (Treasury reports). The price of New York City bank stocks followed the price of state bonds in 1841, trending sharply downward as the state debated how to face its impending default. As in Ohio, a newly elected Democratic majority came to Albany in the winter of 1842. In March, 1842 the state legislature passed "the famous Stop and Tax Act,... [which Whig Governor] Seward reluctantly signed into law on March 29. The act provided for the suspension of all canal construction, except that essential to navigation or 'necessary to preserve the work already done from destruction by ice or floods.' It also provided for a one-mill property tax."⁵⁵ New York had not had a state property tax since 1827, but it would have one for the remainder of the century. New York avoided default as its

property tax, unlike the Pennsylvania tax, was immediately effective: revenues in fiscal 1843 exceeded \$500,000.

In 1840 and 1841, New York, Pennsylvania, and Ohio made increasing demands on their banks under conditions of substantial uncertainty. Faced with these conditions, banks in the northeast responded by reducing loans and circulation, shoring up their specie holdings, and reducing their holdings of western and southern bank notes. As long as western and southern bank notes traded at discounts of over 20 percent in New York, even solvent banks could not resume specie payments. Confidence about the profitability of New York and Philadelphia banks eroded steadily through 1841, culminating in the collapse of 1842. Although international economic forces played a role in the collapse of 1842, it was primarily a domestic crisis brought on by the fiscal crisis of American states. New York, Pennsylvania, and Ohio required their domestic banks to shoulder the burden of lending to the state at a time when American state bonds were losing their credibility throughout the country and the world. With the exception of Pennsylvania's forced loan in November 1841, the states did not move against the banks. The economic crisis, however, did not pass until the summer of 1842 when it became clear how the crisis in state finances would be resolved in the northeast.

Lessons

Some years are more interesting than others and 1837 has received more than its share of attention from economic historians. But not everything of interest in the depression that lasted into 1843 happened in its first year. True, the Panic of 1837 shattered the biggest land boom in American history; and true, it is a classic case of internationally transmitted financial shocks disrupting an economy; and true, it witnessed two first-rate policy blunders by Andrew Jackson.

It is also associated, rightly or wrongly, with the end of the Bank War and remembered as a crystalizing moment in American political history.

Yet the changes in the American political system that followed the depression of 1839 to 1843, were not reactions to 1837. American states did not default on their debts because an unexpected depression took them by surprise in 1837. Half the state debt outstanding in 1841 was incurred after the Panic. American states enacted procedural debt restrictions in their constitutions between 1842 and 1852 because they remembered Indiana's Mammoth Internal Improvement system, and New York and Pennsylvania each borrowing over \$13 million in 1838 and later. Americans continued to worry about banks, not just because of Andrew Jackson and Nicholas Biddle. Westerners had good reason to suspect eastern bankers after eastern investment banks defaulted on their obligations to Indiana, Illinois, and Michigan in 1839. Nicholas Biddle and the BUSP had long since stopped behaving like a conservative central banker. When Biddle's made speculating in cotton and American stocks part of his new strategy to establish the BUSP as one of the world's leading banks and then failed spectacularly, people did not remember that "the forces ending the boom were independent of the Bank" no matter how innocent the bank was before 1837. When they adopted constitutional provisions forbidding incorporation by special acts and requiring general incorporation they may have had some of Biddle's privileges in mind. They certainly had reason to worry about the relationship of state finances and banks that emerged in the last months of 1841 in New York, Pennsylvania, and Ohio.

The Panic of 1837 and the depression that began in 1839 were caused by a combination of international and domestic factors. There is no hard and fast empirical metric to apply, but

both international and domestic forces were at work in 1837. Both domestic and international forces were at work in 1839 as well, while the extension of the Crisis into 1840 had more to do with conditions in the United States than in Britain or the world at large. The collapse in 1842 seems to be a wholly American event. Each successive crisis showed smaller disruptions to international financial and product markets and larger disruptions to domestic financial markets. Prices for cotton and wheat, of course, were determined in world markets and declining prices surely depressed land values throughout the country, complicating the banking situation in the south and west. Rising interest rates in Britain complicated the situation facing American states after 1839. But these were general equilibrium phenomenon. Falling world prices were driven, in part, by the decline in the American money supply, and rising British interest rates were a response to impending American defaults and threats of repudiation.

Extending the history of the depression up to 1843 throws its most illuminating light on state governments and their finances. After the Panic of 1837, states went on a borrowing binge. Within two years Indiana, Illinois, and Michigan were in trouble, and the immediate cause of their problems were the defaults of the Morris Canal and Banking Company of New Jersey. The imminent default of these states and the rumors of repudiation that began circulating as legislatures scrambled to find money to pay interest on bonds for which they had not yet been paid, weakened the market for state bonds in New York and in London. Banks throughout the country had increased their holdings of state bonds in the improvement boom, and several of those banks were now in trouble, particularly in the south and west. When southern banks collapsed, Florida, Mississippi, Louisiana, and Arkansas found themselves asked to pay interest on bonds they had never expected to service. When Florida and Mississippi repudiated their

bonds outright, it did nothing to help American credit in the eyes of the world.

The default crisis started in the south and west, but it was not limited to the frontier states. As late as 1840, New York, Ohio, Pennsylvania, and Maryland were still deeply involved in extending their transportation systems and were still issuing new bonds. With interest rates rising in Britain, and lenders growing suspicious of American bonds, these states turned to their own banks for loans. Pressure on northeastern banks mounted through 1841, culminating in Pennsylvania's requirement that all banks prepare to lend the state 5 percent of their capital in order that the state might make its February interest payment. Northeastern banks were understandably reluctant to increase their exposure, built up their specie holdings and reduced their circulation, deposits, and, importantly, their willingness to hold the notes of banks in the south and west. As long as bank notes of western and southern banks sold for discounts of 10 percent or higher in New York and Philadelphia, those banks could not resume specie payments. As specie drained out of weakened southern and western banks, they further reduced note issues and deposits, and the money supply steadily declined. It was not until after the collapse of 1842 that New York and Pennsylvania finally got their fiscal house in order and stopped pressuring their banks. In Ohio, tensions between the banks and the state grew so heated that the state refused to renew bank charters in 1843.

After 1842, Americans remembered how their adventures in state finance quickly came back to haunt them. Americans in Indiana and Ohio were saddled with property tax rates eight times higher than in 1836. New York, Pennsylvania, Maryland, and Massachusetts all had state property taxes, where they had none in 1830. Americans in five states, Florida, Mississippi, Louisiana, Arkansas, and Michigan faced the dishonorable fact that they had repudiated all or

part of their state's sovereign debt. Illinois and Indiana struggled just to get current on back interest payments until the late 1840s. They didn't remember that the Bank of England raised its discount rate in 1836. They remembered an economic recession that got out of control because of the excesses of state economic policy. We should remember it too.

1. For the literature on central banking see Timberlake, and for the vindication of Biddle see Hammond. The importance of a conservative and “sound” central bank is a major theme in Redlich, and see Sylla.
2. Three regions is enough to convey the argument. In fact, the United States was probably made up of at least five distinct regional economies: New England, Mid-Atlantic, South Atlantic, southwest, and northwest. This harks back to the old three way division of Callender, the first 20th century economic historian to examine state investment in detail.
3. 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 reports that in 1838, total non-corn imports into Britain were £67.1 million, while cotton imports were £14.3 million. Matthews, p. 15 citing unpublished figures by Imlah. Corn imports reached £11 million in 1839, the largest imports between 1829 and 1842, Matthews, p. 30, citing Tooke.
4. See Woodman, *King Cotton and His Retainers* and Perkins, *Anglo-American Trade*, for a description of cotton finances.
5. See Catterall, *Second Bank*, Smith *BUS*, and Hammond *Politics*, for a description of the Bank’s important role in this market.
6. “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’.” Clapham, vol II, p. 152. The Bank of the United States relationship with Barings is described in Hidy, *House of Baring*, pp. 179-269, “House of Baring,” and “Anglo-American Merchant Bankers.” The Bank’s exchange dealings, both domestic and foreign are discussed in Redlich, *Molding*, pp. 110-81.
7. See Clapham, p. 152-54. Of course, the bill market in London was far larger than just the American component.
8. See Knodell “Profit and Duty,” Catterall *The Second Bank*, Smith *BUS*, and Bodenhorn, *History of Banking*.
9. One of the primary virtues of the Second Bank of the United States, with its national system of branches, was its ability to bring order and stability to the market for domestic bills and, in the process, to stabilize the relative prices of bank notes throughout the country. As long as the BUS received a steady flow of deposits from federal tax receipts, it held substantial amounts of state bank notes and could intervene, to its own profit, to smooth fluctuations in the seasonal value of exchange throughout the country. An important part of the case against Jackson and his veto of the BUS’s charter is that the nation lost this stabilizing force after 1836. The BUS had a smaller impact on the market for foreign exchange, as well established companies like Brown’s and Barings were already active in that market before the BUS began operations.
10. In order to show their common movements on one graph, each series is scaled. Short term interest rates in United States are the actual rate plus 30 percent; the price of bills on London in

New York and Boston is par plus 20 percent; short term rates in London are the actual rate plus 10 percent; and the Bank rate is given in actual rates. Par values for the price of 60 day bills were calculated as the market rate minus 9.75 percent to allow for the practice of quoting dollars in pounds at the statutory rate of \$4.44 $\frac{4}{9}$ rather than the mint rate of \$4.8665.

11. 1839 was a crisis year in both Britain and the United States, but international payments mechanisms stayed orderly.

12. Stock held by banks is composed primarily of state bonds, but includes some private corporation equities. Bank notes held by banks are bank notes held by banks other than the issuing bank.

13. Eleven states reported the condition of their banks in September, October, or November of 1839, data which are assigned to the January 1, 1840 date in the Table. Clearly these numbers may not reflect the impact of the October crisis. Likewise, the collapse in 1842 may or may not be reflected in the January 1842 numbers.

14. Deposits declined much faster than circulation in 1837 and 1838. Most deposits (as opposed to most depositors) were held in large accounts. Banks were reluctant to freeze the assets of their best customers, and so allowed deposits to be withdrawn even when they were not willing to convert notes into specie. Howard Bodenhorn has helped me with this point.

15. While the BUSP was in business on January 1, 1841 it had suspended specie payments. The Bank resumed specie payments on January 15, 1841, but was forced to close permanently three weeks later on February 4, 1841, Smith, pp. 226-27. I have followed the Treasury convention and not reported BUSP figures for January 1, 1841.

16. I am using Gorton's transcription of Van Court's monthly data.

17. In Van Court's data, the modal value of Pennsylvania bank notes was always par in Philadelphia. During the banking crises in 1839 and 1842, Pennsylvania bank notes traded at a substantial discount in New York City. This has the effect of introducing a "Pennsylvania" effect into every state's note prices, but the bias should not be large. In most years there should be no bias at all, since note markets appear to have worked quite well. In crisis years, however, it is not clear that markets everywhere cleared, so that the prices in Philadelphia and New York for, say, Ohio bank notes could have varied.

18. Again, in order to see the movements in note prices for each state more clearly, the series for each series has been scaled. For example, in Figure 3A, the prices for Pennsylvania are adjusted so that par is 0, for Massachusetts so that par values are 10, for New York par values are 20, and so forth.

19. These are modal rates. Several large Philadelphia banks, after the initial crisis in 1839, resumed specie payments, but were forced to suspend again in January of 1842, an incident examined in detail later.

20. Knodell's "Demise of Central Banking" clearly shows extremely low prices for bank notes in the Old Northwest in 1842.

21. Confusion over the timing of debt issue began with Census of 1880. The census reported total borrowing for discreet time periods rather than annual numbers, including the period 1835 to 1838. Ratchford's study of state debts reproduced the Census tables. Since everyone refers to Ratchford, few scholars really knew when the debt issued between 1835 and 1838 was actually issued and, in the absence of better evidence, assumed that most of the loans occurred in 1836. The figures in the table are taken from the "William Cost Johnson Report."

22. Confusion over the timing of state borrowing is widespread. For example, Folmsbee's book on Tennessee begins: "It is well known that one of the causes of the panic of 1837 was the wave of interest in the improvement in transportation facilities which swept over the country during the years immediately preceding, and which led many states of the Union, particularly those of the West, to subsidize internal improvements in a reckless and extravagant manner." (p. iii). Only two western states borrowed heavily before 1836: Ohio, to finance canals, and Louisiana, to finance banks. The other western states borrowed very little before 1836. In *The Transportation Revolution*, George Rogers Taylor attributed the causes of the Panic of 1837 to four causes, including: "(4) the large loans which flowed in from London as state bonds, issued largely to finance banks and internal improvements, found a rapidly expanding market abroad. This credit expansion [due to all four causes] helped, of course, to make possible the great increase in capital goods and at the same time doubtless also facilitated the general rise of prices which, beginning in 1830, had assumed alarming proportions by 1836." (p. 341). It may have been that the "wave of interest in the improvement in transportation facilities" contributed to the Panic of 1837, but the heavy state borrowing came after the Panic, not before.

23. Louisiana borrowed exclusively for banks before 1836, but borrowed to invest in railroads and for general state purposes in 1837 and 1839.

24. Note the Ohio numbers from Scheiber, and others for Pennsylvania, etc. I think there is a footnote in Panic-9 about this already.

25. See Krenkel's detailed discussion of Illinois' borrowing, pp. .

26. Note the Indiana experience and the report from Esarey.

27. A limit on resell price might be profitable if the state planned on selling more bonds in the future, and did not want to compete on price with existing bond sellers. But bond buyers must have demanded a premium for accepting bonds that could not be resold below a minimum price.

28. Cite to Jenks. Jenks himself backs off this conclusion about the importance of Biddle's cotton speculation in disrupting capital flows and bringing down the Bank, but Jenks's story is repeated at length by Hammond.

29. This evidence is circular, since aggregate capital flows are calculated as a residual from the trade accounts. Capital inflows inevitably decline when the gap between exports and imports narrows. We do not have accurate enough information on foreign bond sales to determine how many bonds were sold abroad in 1839 and 1840.

30. Kilbourne, *The Bank of the United States*, has an excellent discussion of the Bank's cotton operations from 1837 to 1839, pp 115-50. "Here then is a very early revelation about the exigencies which would drive the United States Bank into the commodities market. A splendid opportunity was unfolding for arbitraging among a chaotic array of domestic exchange rates." pp. 162.

31. Hammond's *Politics* discussion on pp. 464-5, quoting a letter from Biddle to the Bank of England explains why the British were getting post notes instead of specie. "No one ventured to question their [post notes] intrinsic security. Not even the Bank of England would decline to honor them. And it began to appear that that venerable institution was being outwitted by the clever Mr. Biddle." Jenks, quoted in Hammond, p. 465.

32. The original charter did allow the bank to hold stock it acquired in "settlement of debts and advances."

33. The history of the last years of the BUSP is documented in House Document 226, 29th Congress, 1st Session. Appendix H of the report documents that the bank held stock in over 50 banks, turnpike, canal, and railroad companies in December 1840.

34. See Smith, *Economic Consequences*, p. 210 to 212 for a discussion of the bank's involvement in state bonds. Smith discusses the terms of the bank's Pennsylvania charter on pages 178 to 181. Table 5 is taken from House Document, 226, 29th Congress, 1st Session, pp. 458-60. Smith noted that "The totals given in the consolidated statement for the Bank are misleading at this point. Detailed analysis of the accounts for the various offices and agencies suggests that the accounts were juggled." Smith, note 26, p. 297. The numbers in Table 5, indeed in the entire final report on the Bank's condition, are somewhat suspect, and certainly are not absolutely accurate. They do convey, however, the general condition of the bank.

35. House Document 226, p. 419. In the summer of 1837, Biddle, using A.J. Jaudon as his name, shipped \$2,182,998.28 of cotton on the credit of Barings.

36. "And without additional credit American finance could no longer sustain the artificial fabric of fraudulent prosperity. Values must be deflated; real as well as paper well destroyed; thousands turned bankrupt and rendered property-less; a few made richer or wiser; and intolerable burdens of debt and capitalization incurred at high money prices absorbed at lower levels before it was possible for the development of the United States to continue." Jenks, *British Capital*, p. 98.

37. The loss was also, ultimately, not a loss to the bank, since the operations had been carried out in Biddle's and other's names, they were responsible for the losses and eventually repaid the bank for its losses.

38. Hammond, "Chestnut Street Raid."

39. The first quote is from Smith, *Economic Consequences*, note 100, p. 300. The second is from Hammond, "The Chestnut Street Raid," pp. 615-16. Govan, pp. 363-4, believes that Dunlap authorized the post-note sales in 1839 without notifying Biddle, and that when Biddle found out what was happening, he put a quick stop to the sales, but the damage had been done.

40. Smith, *Economic Consequences*, p. 218. The first two loans were fully collateralized by the bonds, the third loan was not. Although there may have been other collateral, it appears that the value of the loans was close to the par value of the bonds. Why didn't the European bankers simply buy the bonds? This is where the minimum resale price may have come into play, as the BUSP was probably constrained by its arrangements with Mississippi and Pennsylvania not to resell bonds below par. This is an issue that requires more investigation.

41. As Jenks observed: "Begun in shrewd calculation of the interest of the investor and of the British economy, swollen to dangerous limits in support of the "open credit" system, the flow of British capital to the United States had created a vested interest in its prosperity which warped the judgement of the leading merchant-bankers. No other conclusion is possible." (p. 94). Hidy details the extensive efforts of Barings and other European bankers, to assist Jaudon in meeting the BUS's obligations in 1839 and early 1840, pp. 273-283. "These arrangements enabled Jaudon to repay all his late loans and to meet other current obligations, totaling between L 350,000 and L 400,000, as of January 1, 1840. Thus the Barings had actively cooperated in Jaudon's efforts to avert suspension and to postpone a large share of his obligations from one to five years, liabilities which he hoped would be met out of the proceeds from sales of the pledged State securities. Jaudon made all payments due the Barings, who gave no further support to the agency of the bank, The Rothschilds, Denisons, Huths, and Hope assumed the entire burden, to their financial embarrassment after the final suspension of the bank in 1841." Hidy, p. 280.

42. Illinois pursued more projects simultaneously than any other state. Faced with the possibility of default, both Indiana and Illinois began wildly trying to borrow, including the issue of state notes, which immediately hampered the ability of the states to collect revenues in hard cash. Illinois authorized the issue of \$8 million in 1842. (or 41??)

43. The discussion in this paragraph is based on my reading of the Morris Canal and Banking Company Board Minutes, June 12, 1837, April 21, 1836, March 3, 1837, April 22, 1837, June 6, 1837, and June 12, 1837. The \$5,000,000 Michigan loan is discussed on May 31, 1838, as are Indiana bonds, again on June 1, 1838. On July 31, 1839, the Morris Bank directors hold a special meeting with Thomas Dunlap, president of the Bank of the United States of Pennsylvania on the eve of the Morris Bank's default with Indiana.

44. The course of land values in Indiana is discussed in Wallis, "The Property Tax as a Coordinating Device." Had land values in Indiana in 1842 remained at their 1837 levels, Indiana could have serviced its debt from property tax revenues alone, Wallis, Grinath, and Sylla, "Debt, Default, and Revenue Structure." This is not to discount the general effects that the declining economy had on land values throughout the country.

45. Figure 2D was prepared by Namsuk Kim from data collected by Richard Sylla, Jack Wilson, and Robert Wright.

46. Ohio had a close relationship with Barings. See Scheiber, *Ohio Canal Era*, pp. 146-56 for a discussion on Ohio's loans after 1839. Barings came through at two crucial times, taking \$400,000 of bonds in July of 1840, and another \$400,000 in May of 1842 (at a price of 60). The remainder of Ohio borrowing from 1839 to 1842 was extracted from banks in Ohio, which contributed to uncertainty in Ohio over the future and viability of the banks, see below.

In New York, "There was a great falling-off in the amount taken by foreigners. In 1837, more than two-thirds of the five per cent stock issued was taken by foreigners, but of the 6 per cent stock issued in 1840 and 1841, only \$162,000 was taken by foreigners, and of the four million issued in the winter of 1842, at 7 per cent, and secured by a pledge of a tax and the surplus tolls, only \$63,500 were taken by foreigners." (Sowers, p. 70, citing the *Annual Report of the Comptroller*, 1843).

47. Bordo, Wheelock, and ___ have shown the importance of price instability for macroeconomic performance in 19th century England. Declining prices were clearly a problem after 1839.

48. By the absence of an "international payments crisis" I mean that sterling bills continued to trade at par in New York and that pounds and dollars could be purchased in both countries at their par values.

49. Bank note discounts on southeastern banks (VA, NC, SC, and GA) went from 3.2, to 4, to 6.5 percent discount in August, September, and October; south western banks (AL, LA, and TN) when from discounts of 8.2, to 10, to 10.5; north western banks (MO, IL, IN, and OH) went from discounts of 4.5, to 5.5, to 5.9 percent in the same months.

50. Two qualifications are in order. First, the modal data used in Figure 3 disguises variation in the bank note discounts of individual banks. Some banks maintained convertibility right through 1840. Second, had an individual bank resumed convertibility into specie, the same market forces that would drain specie from the bank would also bid up the value of its notes in the open market. The question for the bank was whether the value of its notes would rise faster than its specie reserves declined.

51. 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.

52. Scheiber, *Ohio Canal Era*, p. 151. My discussion of this incident in Ohio is largely based on Scheiber. The law authorizing the bonds required them to be sold at par. Again, the issue of bond sale prices is important, in this case raising the possibility that the Ohio legislature could repudiate the bonds.

53. The Pennsylvania state property tax was expected to yield over \$600,000 a year. In fiscal 1841 it generated only \$33,392. When the tax finally began realizing the sustainable yield in 1845, at \$1,318,322, the state resumed interest payments on its bonds. Had Pennsylvania been able to put an effective property tax in quickly in 1841, or had it begun levying the tax a few

years earlier, it never would have defaulted, Wallis, Grinath, and Sylla, 1999.

54. Kettell, "Debts and Finances," p. 262. McGrane, *Foreign Bondholders*, is a wonderful history, but he often gets dates mixed up. His description of default in Pennsylvania places the end of the BUSP in 1842, not 1841. He confuses the Bank of Pennsylvania with the BUSP in this incident, pp. 70 and 71.

55. McCurdy, *Anti-Rent Era*, p. 82. Gunn *Decline of Authority* has an excellent discussion of the Stop and Tax Act, the role of internal improvements in New York, and the debate over the new constitution that resulted.

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Table 1
Banking Aggregates, Millions of Dollars

	1837	1838	1839	1840	1841	1842	1843
Berry							
(1) Circulation	146.5	115.5	135.6	111.6	106.4	86.7	60.2
(2) Deposits	131.9	82.9	90.4	73.9	66.5	62.6	55.5
(3) Loans & Discounts	519.5	476.3	497.6	460.6	385.8	349.8	255.5
(4) Specie	37.5	34.9	44.5	34.1	32.7	29.6	33.9
(5) Specie Total Temin	73	88	87	83	80	80	90
(6) Temin Money Supply	276	232	240	215	186	174	158
(7) Circulation	140.6	111.4	124.5	96.4	96.5	76.6	59.6
(8) Deposits	121.4	76.2	83.6	65.7	61.7	59.7	55.5
(9) Loans & Discounts	498.2	450.1	459.4	422.8	363.0	318.7	253.0
(10) Specie	36.5	35.1	43.3	33.2	32.7	27.2	33.9
(11) Capital	280.1	297.5	306.1	327.9	278.6	256.5	23.0
(12) Stock	12.4	32.4	35.9	37.4	23.1		
(13) Notes in Banks	35.8	25.6	28.7	21.0	24.3	19.2	13.2
(14) Money Supply	262.8	214.9	223.1	190.9	181.2	169.8	158.0
(15) Index 1839=100	117.8	96.3	100.0	85.6	81.2	76.1	70.8
(16) Specie/Circ+Dep	0.16	0.22	0.24	0.24	0.24	0.23	0.33

For sources, see source table.

Table 2
Treasury Data on Banks, Jan 1 of each year

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
SPECIE	37 to 38 Percent Change	Share Explained	39 to 41 Percent Change	Share Explained	41 to 43 Percent Change	Share Explained	39 to 43 Percent Change	Share Explained	Share of National Total in 1839	ratio of (8)/(9)
New Eng	23%	-0.38	9%	-0.03	-11%	-0.27	-4%	0.02	0.09	0.19
Mid-Atl	-16%	1.24	-12%	0.14	42%	2.54	26%	-0.38	0.29	-1.28
S. Atlantic	-11%	0.53	-23%	0.17	-24%	-0.78	-41%	0.37	0.18	2.05
S. West	-21%	0.68	-16%	0.11	-6%	-0.17	-21%	0.17	0.16	1.05
N. West	7%	-0.33	-31%	0.22	-11%	-0.31	-39%	0.34	0.18	1.92
BUSP	43%	-0.74	-100%	0.40	0%	0.00	-100%	0.48	0.10	4.97
New York	-37%	1.58	-18%	0.11	56%	1.65	28%	-0.22	0.15	-1.41
Total										
w/o BUSP	-8%	1.74	-16%	0.60	6%	1.00	-12%	0.52		
Total										
w/ BUSP	-4%	1.00	-24%	1.00	6%	1.00	-20%	1.00		
Deposits										
New Eng	-40%	0.13	-4%	0.02	-16%	0.34	-19%	0.08	0.13	0.58
Mid-Atl	-42%	0.50	-4%	0.06	0%	-0.01	-4%	0.05	0.40	0.14
S. Atlantic	-31%	0.11	-24%	0.11	-27%	0.39	-44%	0.16	0.11	1.37
S. West	-16%	0.06	-48%	0.29	-3%	0.04	-49%	0.25	0.16	1.52
N. West	-49%	0.21	-51%	0.21	-26%	0.23	-64%	0.21	0.11	1.97
BUSP	12%	-0.01	-100%	0.31	0%	0.00	-100%	0.25	0.08	3.09
New York	-49%	0.33	-7%	0.06	13%	-0.46	5%	-0.03	0.22	-0.16
Total										
w/o BUSP	-38%	1.01	-20%	0.69	-8%	1.00	-27%	0.75		
Total										
w/ BUSP	-37%	1.00	-26%	1.00	-8%	1.00	-33%	1.00		
Circulation										
	37 to 38		39 to 41		41 to 43		39 to 43			
New Eng	4%	-0.02	-23%	0.17	-8%	0.04	-29%	0.10	0.17	0.58
Mid-Atl	-36%	0.55	-27%	0.36	-18%	0.15	-41%	0.25	0.31	0.81
S. Atlantic	-21%	0.20	-16%	0.12	-32%	0.17	-43%	0.15	0.17	0.85
S. West	-10%	0.06	11%	-0.06	-83%	0.43	-82%	0.20	0.13	1.62
N. West	-8%	0.05	-26%	0.20	-44%	0.21	-58%	0.20	0.18	1.15
BUSP	-41%	0.16	-100%	0.21	0%	0.00	-100%	0.10	0.05	1.98
New York	-49%	0.40	-21%	0.15	-21%	0.09	-38%	0.12	0.16	0.75
Total										
w/o BUSP	-19%	0.84	-19%	0.79	-36%	1.00	-49%	0.90		
Total										
w/ BUSP	-21%	1.00	-23%	1.00	-36%	1.00	-51%	1.00		
Loans										
New Eng	-7%	0.15	-7%	0.06	-7%	0.06	-13%	0.06	0.19	0.31
Mid-Atl	-17%	0.54	-22%	0.29	-15%	0.15	-32%	0.22	0.29	0.74
S. Atlantic	-9%	0.12	-8%	0.05	-29%	0.16	-35%	0.11	0.13	0.81
S. West	3%	-0.05	-8%	0.08	-62%	0.53	-65%	0.30	0.20	1.50
N. West	-0%	0.00	-24%	0.11	-32%	0.11	-48%	0.11	0.10	1.11
BUSP	-21%	0.25	-100%	0.42	0%	0.00	-100%	0.21	0.09	2.31
New York	-23%	0.38	-20%	0.14	-5%	0.03	-24%	0.08	0.15	0.55
Total										
w/o BUSP	-8%	0.75	-14%	0.58	-28%	1.00	-38%	0.79		
Total										
w/ BUSP	-10%	1.00	-22%	1.00	-28%	1.00	-44%	1.00		

Table 3
 State Debt Outstanding on September 1, 1841
 By Year Authorized
 Thousands of Dollars

	Before 1835	1835	1836	1837	1838	1839	1840	1841	State Default Total	??
Southern States: Primarily Bank Debt										
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	Y
Mississippi	2,000	0	0	0	5,000	0	0	0	7,000	Y
Arkansas	0	0	146	2,530	0	0	0	0	2,676	Y
Louisiana	22,200	0	0	600	0	1,185	0	0	23,985	Y
Southern States: Mixed Bank and Transportation Debt										
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	
Virginia	4,067	714	15	573	959	2,364	18	34	8,744	
South Car.	944	0	0	0	2,148	600	0	0	3,691	
Georgia	0	0	0	903	422	0	0	0	1,325	
Northwestern States: Mixed Bank and Transportation Debt										
Illinois	0	0	500	3,165	0	3,478	5,079	1,306	13,527	Y
Indiana	1,990	227	7,771	0	1,400	1,363	0	0	12,751	Y
Michigan	0	100	0	5,020	451	40	0	0	5,611	Y
Northeastern States: Primarily Transportation Debt										
Ohio	4,500	0	170	550	1,710	3,476	1,460*	1,881*	20,000*	
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	Y
Maryland	4,885	40	20	500	8,775	903	0	92	15,215	Y
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	234,719	
Total Ever Issued	79,266	4,775	13,556	21,587	37,746	20,764	19,811	5,798	203,304	

Table 4
Default, Resumption, and Repudiation Dates

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

Table 5
 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	12,991	14,404
on other security	17,386	18,815	3,071
on bank stock	3,061	296	0
Domestic Bills of exchange	17,751	7,446	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

Source Notes for Figures and Tables:

Figures 1A and 1D: Smith and Cole, *Fluctuations*, Table 45, p. 158.

Figure 1B: Gates, *History of Public Lands*, Appendix B, p. 802.

Figure 1C: Data on American foreign trade are available in Smith and Cole, *Fluctuations*, Table 18, p 73, and on British exports to America in Matthews, *Trade Cycle*, Table 5, p. 45.

Figure 2A: Donnell, *History*. The prices in shown in the figure are the low price per pound on New Orleans cotton.

Figure 2 B: Gross cotton margins figured as the difference between the purchase price in New Orleans, and the selling price in Liverpool 8 weeks later (also from Donnell), converting the Liverpool price to dollars at the rate of \$4.8665 per pound.

Figure 2 C: Interest rates in the New York and Boston are the average of the high and low rates reported in Smith and Cole, *Fluctuations*, Table 74, pp. 192-3.

Interest rates in London: NBER.

Bank Rate: Clapham, *Bank of England*, vol II, Appendix B, p. 199.

Exchange Rates on 60 day bills, Smith and Cole, *Fluctuations*, p. 190 and Officer, "American Foreign Exchange Market," p. 563.

Figures 3A and 3B: After January 1839, Bank note discounts are taken from Gorton, as posted on Warren Weber's web site. Before 1839, bank note discounts in New York are taken from Elliot, 1845, pp. 1148-1153. The Treasury reported bank note prices for January, April, July, October, and December in 1836 and 1837, for January, April, July, September, November, and December of 1837, and eight days in January of 1838. The figure includes data from January 3 1838 for January, and the January 27 data for February.

Figure 3C: Weighted bank note prices: The states are Virginia, North Carolina, South Carolina, Georgia, Louisiana, Tennessee, Kentucky, Indiana, and Ohio. The weights used was circulation in January 1839; for each month weights were calculated as the share of circulation in the states with notes reported in that month.

Figure 4: All panels taken from data supplied to the author from Sylla, Wilson, and Wright.

Table 1:

Both Berry and Temin take their data from Treasury Reports. Berry's are from a summary of the Treasury Reports in the Reports of the U.S. Comptroller of the Currency, 1876, pp. XLIV-XLV; Berry, pp. 556 and 588-89. Temin's numbers are taken from the Treasury Reports of 1841, U.S. Congress, House Document 111, 26th Congress, 2nd session, and 1850, House Document 68, 31st Congress, 1st session; Temin, 1969, pp. 179-185. The Treasury failed to publish statistics between 1842 and 1846. I have used the 1841 report, Document 111, and the first Treasurer's report in 1847, House Document 120, 29th Congress, 2nd session, 1847.

My data differ from Berry for several reasons. He excludes the District of Columbia, while I include it. Berry does not calculate a money supply, nor is it possible to do some from the data he presents. I do not include Mississippi or Arkansas because of inconsistencies in the reporting of data for those states. I also exclude Wisconsin and Iowa. As a result, my numbers are slightly lower than Berry's in most years, and lower than Temin's for every year but 1843.

The money supply is calculated as:

Row 14 = row 7 + row 8 + (row 5 - row 10) - row 13

Table 2:

Treasury Reports, as in Table 1.

Table 3:

The William Cost Johnson Report.” House Report, 296, 27th Congress, 3rd Session, 1843.

* The numbers for Ohio in the Johnson report are unreliable for the later years. I have included Scheiber’s estimates of borrowing for 1840 and 1841, pp. 143-151, and the \$20 million figure cited in the Census of 1880.

Table 4:

English, “Sovereign Default.”

Table 5:

Source: Congressional Report 226, 29th Congress, 1st Session, Appendix E, pp. 442, 458-60.

Figure 1A -- Smith and Cole Prices

1834-1842 = 100

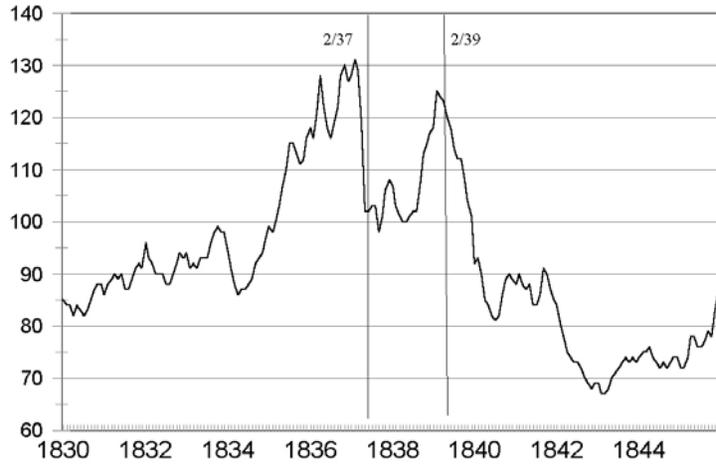


Fig. 1C - US Exports and Imports

millions of dollars



Figure 1B Annual Land Sales

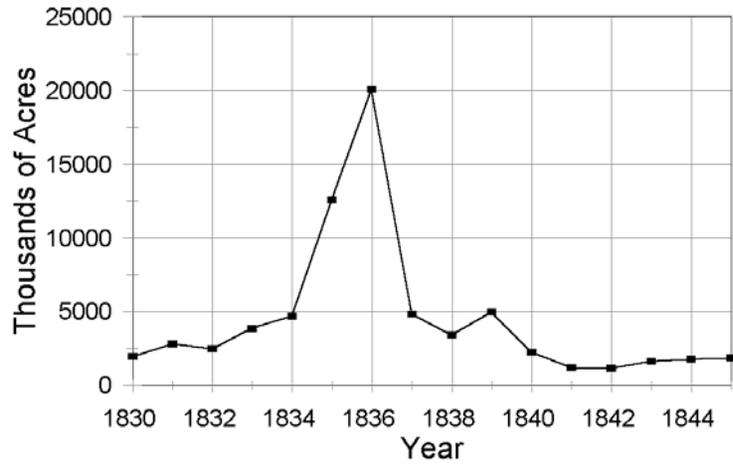


Fig. 2A - Cotton Prices, High & Low
New Orleans, Weekly, cents per pound

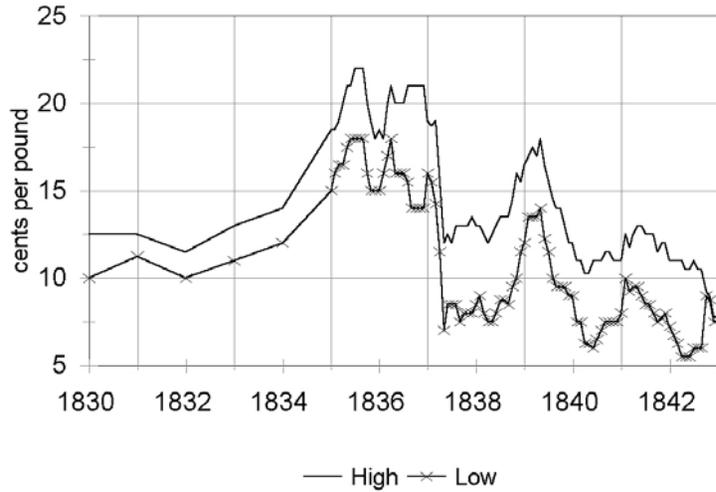


Fig. 2C-- Interest Rates
America and Britain (scaled)

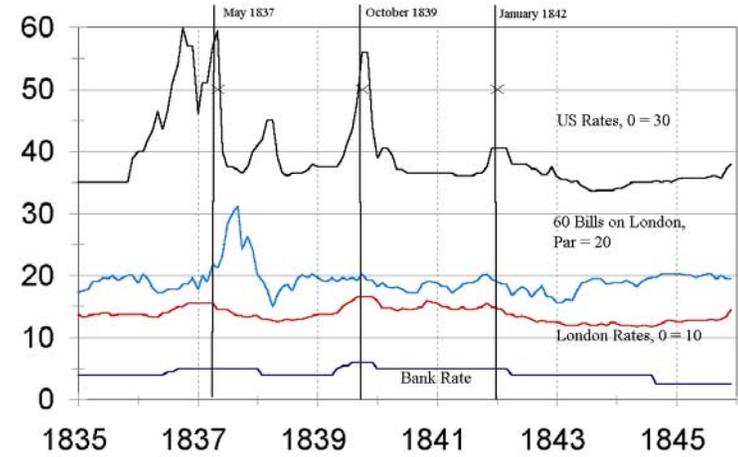
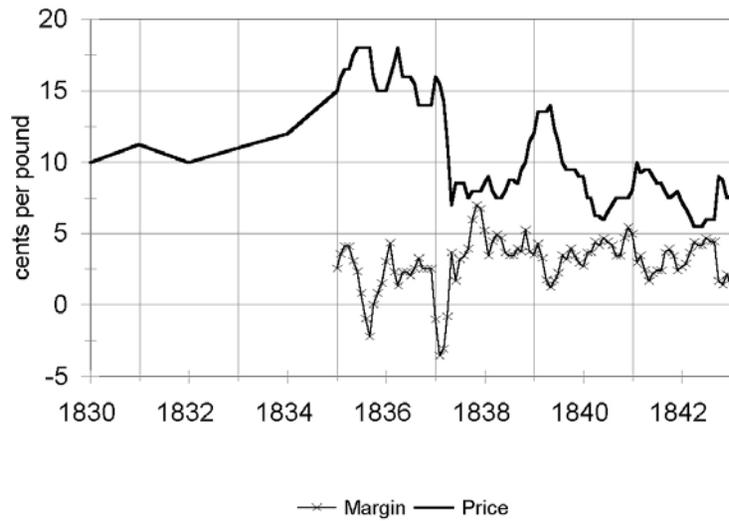


Fig 2B - Cotton Prices and Margins



Yield to Maturity, London Bond Market
Ohio, Indiana, and No-Default States

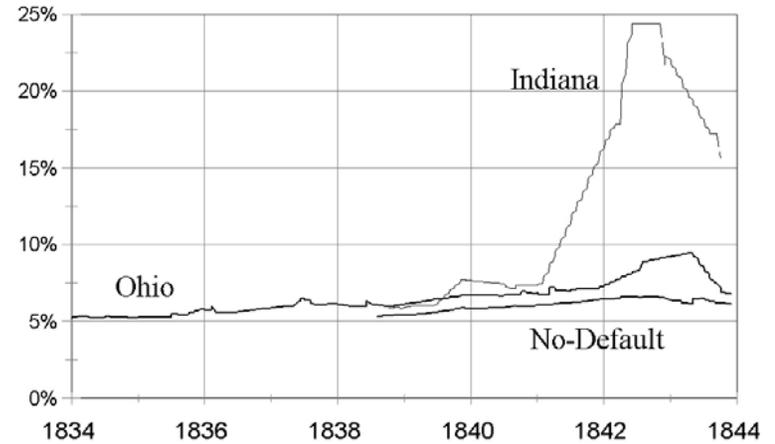


Fig. 3A - Monthly Bank Note Discounts
NY Prices (scaled)

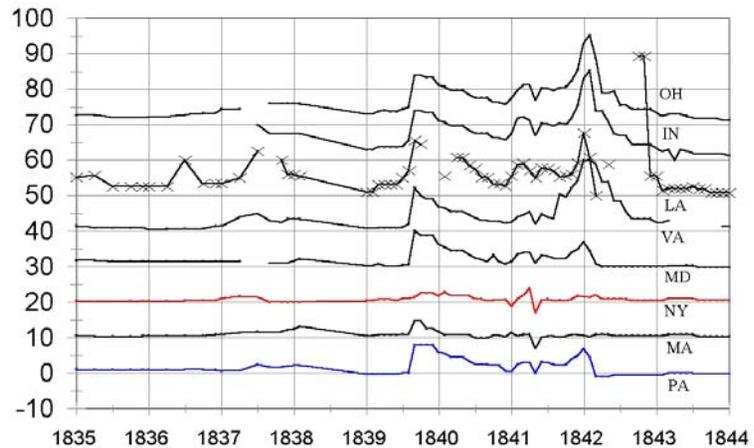


Fig. 3C - Average Discount on Notes
VA,NC,SC,GA,AL,LA,OH,IN,TN,KY,MO

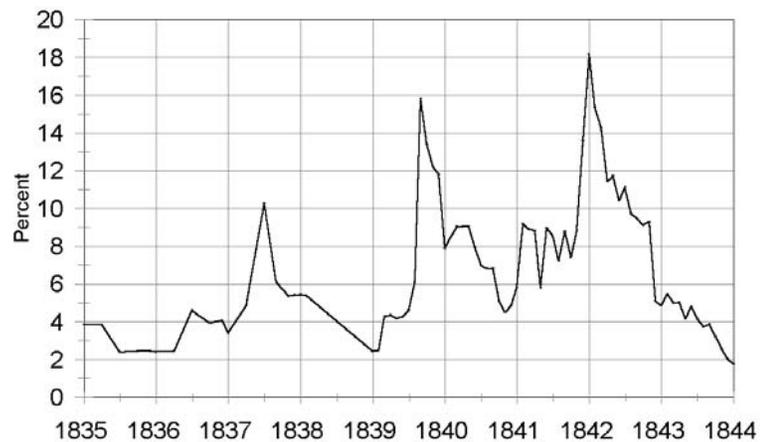


Fig. 3B - Monthly Bank Note Discounts
Southern Banks, NY Prices (scaled)

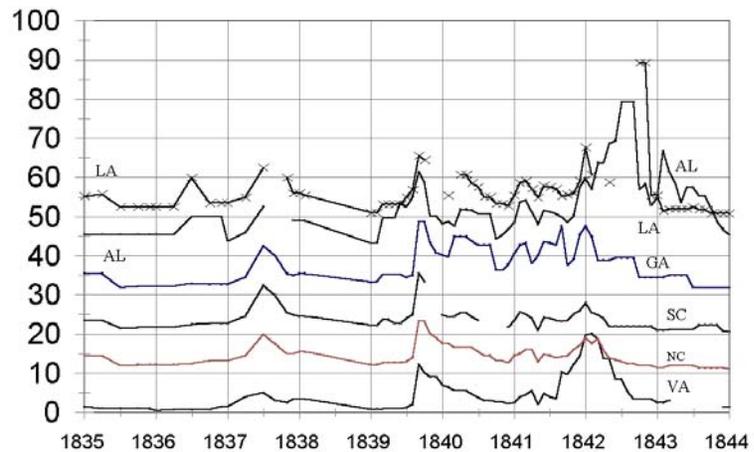


Figure 3D

Bank Note Discounts and Cotton Margins

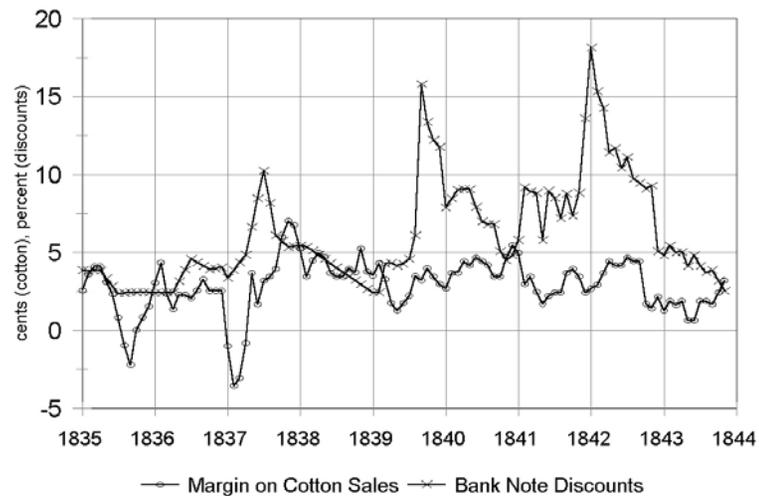


Fig. 4A - Pennsylvania Bond Prices

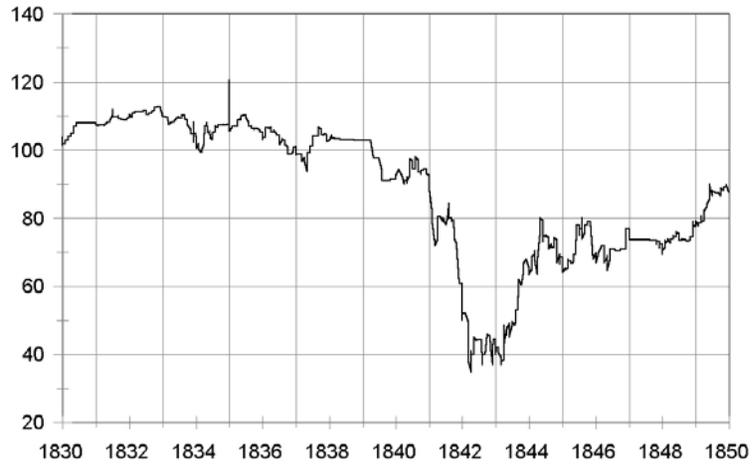


Fig. 4C - New York Bond Prices

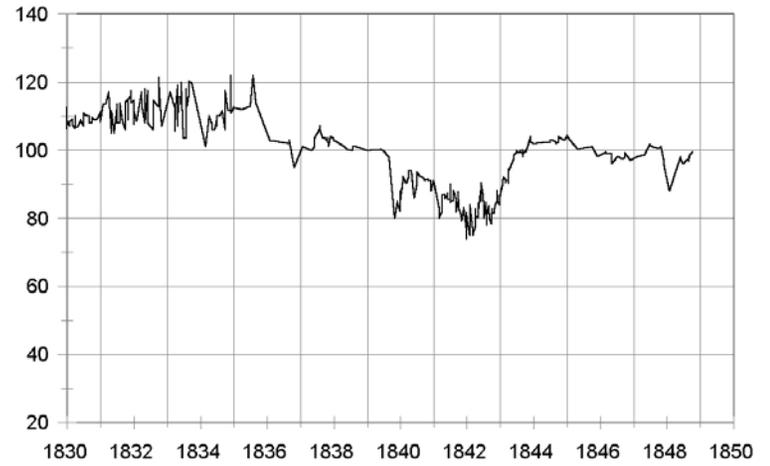


Fig.4B - Philadelphia Bank Stock Prices

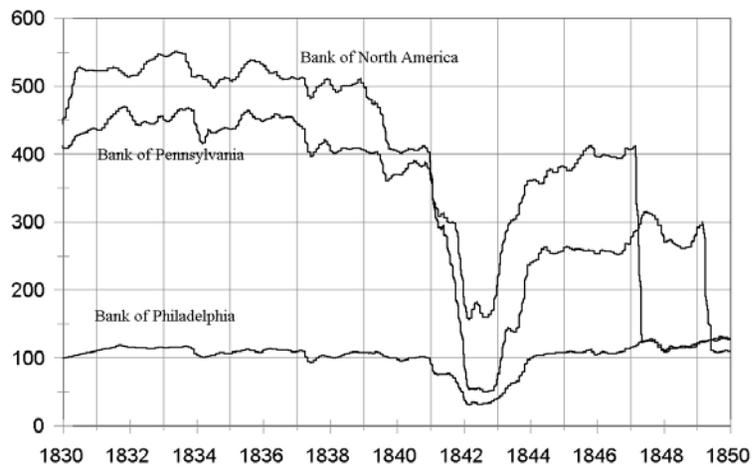


Fig. 4D - New York City Bank Stocks

City, Manhattan, Chemical, Mechanics

