

An Internal Affair: Macroeconomic Instability and
State Public Finance in the United States, 1836 to 1843

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Abstract: The American economy suffered one of its worst depressions between 1837 and 1843. The attention of economic historians has focused on events leading up the Panic of 1837 and the role of domestic and international forces in precipitating the Panic. This paper argues that, while the Panic of 1837 was important, the depression following the Crisis of 1839 was largely the result of domestic factors. State internal improvement investments and state involvement in banking created a situation that precipitated the Crisis in 1839 and was a major factor in the depths of the depression that followed. The paper also shows that a third banking crisis developed in 1842, again as the result of state pressure on their banks as the states faced the possibility of default.

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The years between 1835 and 1843 were some of the most unstable in American macroeconomic history. Contemporaries felt they were living through the worst depression ever, and until the Great Depression of the 1930s, historians generally agreed. The 1830s appeared to be one of those rare depressions caused by a policy mistake: Jackson's handling of the bank war. And, like the 1930s, the 1830s depression induced significant political changes designed, in part, to deal with the perceived causes of macroeconomic instability. After the demise of the Second Bank of the United States, the nation did not have a central bank until the Federal Reserve System was created. Constitutionally mandated general incorporation laws became widespread at the state level in the 1840s (with implications for state banks), as did constitutional restrictions on the ability of state and local governments to issue debt and finance investments in canals, railroads, and banks. These fundamental institutional changes occurred because Americans believed they had learned lessons about the interaction of government and the economy during the depression. They believed domestic economic policies caused the depression.

Peter Temin shattered this historical interpretation when he demonstrated that inflation prior to 1837 was not caused by Jackson's policy but by international specie flows responding to exogenous forces beyond the borders of the United States. He challenged the view that the Panic of May 1837 was the result of Jackson's inept handling of the Surplus Distribution and the unfortunate Specie Circular. Temin argued that tight credit conditions in international financial markets, driven by restrictive policies at the Bank of England, caused the Panic of 1837, and when the Bank of England raised its bank rate again in the summer of 1839, caused the crisis that broke out in October of 1839. Temin's conclusions not only revised macroeconomic history, they seemed to imply that the United States put off adoption of a central bank for seventy years and restructured its constitutional provisions regarding banks, corporations, and public debt because of revolutions in Mexico, opium in China, and the Bank of England's need to protect its specie reserves. Such a conclusion is profoundly dissatisfying. Did Americans mistakenly believe the depression had been caused by domestic policy mistakes when its true cause was international forces?¹

The larger purpose of this essay is to illuminate why Americans thought the depression of

the 1830s revealed weaknesses in their governments that they tried to remedy in the 1840s. The organizing question is Temin's: what was the role of domestic and international forces in the American economy after 1835? Because of the importance of price changes and monetary fluctuations the primary focus is banks, the banking system's role in international and domestic trade, and the behavior of financial markets and banks from 1835 to 1843. The most surprising finding is that there were three, not two, banking crises: May 1837, October 1839, and January 1842. The "Collapse of 1842" provides critical evidence on the role of international forces, as there was no international credit crisis in 1841, the Bank of England did not raise the bank rate or tighten monetary policy. Instead, there was a domestic crisis in public finance: eight states and the Territory of Florida defaulted on their sovereign debts in the last half of 1841 and the first months of 1842. In January of 1842, the bank notes of most western states traded at discounts of 25 percent or more in New York and the notes of banks in several states could not be sold at any price. The structure of internal exchange within the United States had broken down, and the obvious and apparent cause was the collapse of state governments finances.

The three banking crises were the focal points of the depression. In the first, international and domestic forces both played important roles. In the second, domestic forces predominated, but international forces still contributed to instability. In the third, international forces played no role at all. When Americans began revising their state constitutions in the 1840s to ban special incorporation, mandate general incorporation laws for manufacturing and banking, and institute procedural limitations on debt issue by state and local governments, they were not worried about regulating international specie flows. They were legitimately and correctly concerned about preventing governments from pursuing policies that had led to seven years of economic crisis.

I. Background

The contours of the 1830s macro economy can be seen in Figure 1A, which presents Smith and Cole's weighted wholesale price index. Matthews describes the series as "double-headed."

Prices peaked in February of 1837 and again in February of 1839: prices rose by 27 percent between February 1835 and 1837, fell 18 percent between February 1837 and 1838, rose 10 percent between February 1838 and 1839, fell 29 percent between February 1839 and 1841, and prices fell an additional 24 percent between February 1841 and 1843.² The double headed pattern also appears in land sales and international trade, Figures 1B and 1C. We can say little about the course of national product or employment between 1836 and 1843. Gallman's worksheet data show virtually no variation in GNP between 1838 and 1842. Temin uses those numbers to argue that the effects of the depression that began after 1839 were largely nominal. The use of Gallman's data is problematic, however. Gallman never intended the estimates to be used for business cycle analysis, and there are good reasons to believe that the estimates would not reflect a depression if there had been one.³

The American financial system in the 1830s consisted of two interconnected payment systems, one international and one domestic. 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.⁴ Most cotton found its way to Britain through a complex series of middlemen. 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.⁵ 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 could be discounted with local banks, merchants, or other financiers. Bills of less well known individuals required the endorsement of individuals with more standing, and most bills acquired a number of endorsers, all of whom stood at risk to honor the bill in the event that the sale of the cotton failed to generate funds sufficient to redeem the debt. The bills accumulated in smaller financial centers, were bought and transferred to New York or New Orleans, and from there on to England.

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. The Bank of the United States (BUS) played a prominent role in this market, buying bills in the south in the fall and winter (the shipping season for cotton) and selling bills in the northeast in the spring and summer. In partnership with Barings, who extended a line of credit to the BUS, the bank was able to stabilize seasonal fluctuations in bill prices, as well as provide greater liquidity to both sides of the international market. There was a steady seasonal flow of cotton to Britain, manufactured goods to the United States, and sterling cotton bills to pay for both.⁶

In Britain, the market for American bills was dominated by the “American” acceptance houses, firms that specialized in the financing of the American trade: “They were Baring’s, Brown’s, Lizardi’s, Morrison, Cryden and Co., and the three that later became notorious as ‘the three W’s, Wilson’s, Wiggin’s, and Wildes’.”⁷ 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.⁸ 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. Because bills drawn on cotton consignments represented advances against the final proceeds of sales, however, the whole system was susceptible to a decline in the price of cotton. If cotton prices fell far enough, the sale price would not cover the cost of shipping the cotton and the advance. In that case, bill drawers and all of the endorsers were potentially liable for the shortfall.

Bills of exchange were a flexible and sophisticated way to intermediate international

transfers. A bill drawn in Mississippi was denominated in British pounds, and the drawer could immediately sell it for dollars of the local currency. The difference between the sterling price and the local dollar price reflected an implicit exchange rate and an implicit interest rate. The main purchasers of sterling bills in the were American importers who needed to settle their accounts in London. As long as banks in Britain and the United States were willing to convert their bank notes into specie on demand, the prices for sterling bills was limited to a narrow range dependent on the prevailing interest rates and the overall confidence in the domestic economy. When banks in the United States suspended convertibility, however, the price of exchange rose sharply as pounds commanded a large premium over dollars. This happened in 1837 when the American banks stopped redeeming bank notes in specie and the exchange premium went to 10 percent.

Within the United States a parallel, but separate, exchange network financed the movement of goods within the country. “Inland” bills were drawn all over the country on major financial centers: New York, Boston, Philadelphia, Baltimore, New Orleans, and a few other cities. 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.⁹ 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. Inland bills in the domestic market provided a flexible instrument that could easily account for differences in the value of currency in, say, Ohio and New York city. 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.

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 1836.¹⁰

II. The Data:

This section presents information on cotton prices, monthly interest rates in America and Britain, the state of the banks at annual intervals, monthly prices of bank notes in New York, on the stock prices of large banks in New York and Philadelphia, and on the volume of state debts: all footprints left behind by the economic crisis. How this information relates to explanations of the depression is left to the following sections.

Cotton Prices

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.¹¹ The solid vertical lines indicate each banking 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. 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.

The Crisis of 1839 shares one distinctive feature with the Panic of 1837 and is 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. 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. Banks throughout the rest of the country, however, did suspend convertibility in 1839.

The collapse in 1842 shares only the last feature: 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 and January, but never came anywhere near the crisis levels of 1837 and 1839.

Interest rates, international exchange rates, and the price level moved in distinctly different patterns in 1837 than in 1839 and 1842. The only common element between 1837 and 1839 was the behavior of the Bank of England's Bank rate.

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 the Treasury reports. 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. Over the entire period 1837 to 1843, changes in specie held by the banks had little to do with changes in the money supply. The banking system held \$37.5

million in specie in 1837 and \$33.9 million in specie in 1843, with significant deviations only in 1839 (positive) and 1842 (negative). Changes in the money supply were the result of changes in circulation and deposits. On the other hand, between 1839 and 1842 the banking system as a whole lost \$16 million in specie (37 percent). The money supply evolved differently in each of the crises. In 1837, the banking system held onto specie, but sharply raised its reserve position by contracting deposits and circulation. In 1839, the banking system maintained its reserve position, but steadily lost specie (down to January of 1842). While the banking system recovered specie reserves in 1842, it dramatically strengthened its reserve position, raising the specie/(circulation + deposit) ratio from .23 to .33. The steady decline in the money supply from 1837 to 1843 had several different underlying causes.

What were those causes? A first look can be obtained by breaking down the changes in the banking aggregates into regions, as is done in Table 2. The table provides data on specie, deposits, circulation, and loans and discounts of banks in the five regions of the country; for the Bank of the United States; for New York separately (New York is also included in the Mid-Atlantic region); for the country as a whole excluding the BUS; and for the country as a whole including the BUS.¹⁴ 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 (while deposits at the Bank of the United States of Pennsylvania (hereafter BUSP) 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.

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, so the decline in specie in the south and west explains -126 percent of the change in specie (all of the rise was in the Mid-Atlantic region), 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. We need to explain why southern and western banks collapsed in the Crisis of 1839 and thereafter.

Van Court's Bank Note data

Tables 1 and 2 provide an overview of how the money supply changed over time and how the regional distribution of banking activity changed with each crisis. But the Treasury data preclude precise dating of the crises. An alternative source of information on the banking system can be found in the discounts on banknotes throughout the country, as recorded in New York and Philadelphia. Bank note prices (discounts) in Philadelphia were collected and published each month in Van Court's reporter, beginning in January 1839. Gorton has transcribed Van Court's monthly data. 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 are in Philadelphia prices and the Treasury data in New York prices. The Van Court data were converted into New York City prices to join the two series.¹⁶ 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.¹⁷ 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 for substantial periods of time 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 (until 1841, note discounts on the Illinois banks track the discounts on the Indiana bank). Absence of these states from the charts indicates that their notes were no longer trading long before 1841. Missouri and Kentucky are excluded because of spotty records (Kentucky looks very much like Tennessee).

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 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, Indiana, 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.

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. Figure 3C gives average bank note discounts in southern and western states. Discounts reached 25 percent in Ohio, Indiana, and Illinois; 20 percent in Virginia, Georgia, Alabama, Louisiana, Tennessee, and Kentucky. Remember that Michigan, Arkansas, Mississippi, and Florida are excluded because their notes 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 shock to an American economic historian. There shouldn't be any crisis in 1842. 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 1842.¹⁸

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. 1841 and 1842 were very bad years for banks.

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. 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. Table 3 provides information on the amount of total debt issued, debt issued to finance investments in banks in each year, and the debt issued by a selection of states by year from 1835 to 1841. The annual figures in the table are taken from the "William Cost Johnson Report," the original source for the Census tables. 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.

Two prominent features of the table deserve our attention. The first is timing: the massive increase in state borrowing occurs in and after 1837, not before: 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. With the exception of Ohio and Louisiana, western states (in the north and

south) did not borrow significant amounts until 1836, 1837, and 1838. Borrowing in northeastern states boomed in 1838 and 1839, indeed the majority of state debt issued in 1839 and 1840 is by New York, Pennsylvania, and Maryland. Second, the amount of state borrowing for investment in banks was significant: \$10,557,000 in 1837 and \$11,800,000 in 1838.¹⁹ Alabama, Mississippi, Arkansas, Indiana, Illinois, Virginia, South Carolina, and Tennessee borrowed to invest in banks. Paid in bank capital in these eight states rose from \$44.5 million in January 1837 to \$81 million in January 1840, over half of the new capital came from state governments. State investment continued to stimulate the banking sector even during the banking crisis.

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.

There are several other unwarranted conclusions about state borrowing and defaults. The failure of canal projects in the northern states was often attributed to mismanagement and the bad luck of building canals in a major depression. Taylor again: "The cost of constructing most canals

greatly exceeded the engineer's estimates, and the revenues from tolls fell far short of popular expectation. When it was realized that ... canals were costing huge sums and producing so little revenue that public credit was threatened, and that taxes ... had actually to be increased, construction slowed down and promoters of new projects found little encouragement..." (pp. 52-3). Just a moment's reflection on the timing of borrowing in Indiana, Illinois, and Michigan reveals why this story could not apply to them. These three states began borrowing to build canals and railroads in 1836 and 1837, and their projects were expected to take between 6 and 10 years to complete. How could anyone have been disappointed by toll revenues in 1839, which is when they stopped construction? Even if the systems were mismanaged, they should not have run out of money in 1839.²⁰

Why did Indiana, Illinois, and Michigan default? Two factors were critical. First, the terms of the enabling act creating the states prevented state and local governments from taxing public land for five years after the land was sold to private individuals. Huge land sales in 1835 and 1836 created expectations that land subject to the property tax in 1841 and 1842 would be at least double taxable land in 1836.²¹ These states depended on the property tax for revenues and they reasonably expected revenues to be higher in 1842 than in 1836. Second, in the early 1830s, state bonds typically sold for a premium and were easy to market. As the wave of state bonds issued after 1836 glutted the market, bond prices fell, and states found it difficult to sell bonds at par. Several nascent "investment" banks suggested that states sell their bonds to the banks on credit. The banks took delivery of the bonds, the state assumed immediate liability for paying interest, and the banks paid the state for the bonds in installments stretched over several years. The bank most notoriously involved in credit sales was the Morris Canal and Banking Company of New Jersey. In 1838 and 1839, Indiana advanced \$3,000,000 in bonds to the Morris Bank. In August 1839, the Morris Bank defaulted on its installment payments.²² Several other banks and individuals defaulted on Indiana in 1839. The "suspended" debt was estimated at \$3,381,000; \$2,146,000 for bonds issued to the Morris Bank. The Morris Bank also defaulted on credit sales with Michigan. The Phoenix Bank of

New York defaulted on credit sales with Arkansas. Illinois had trouble with several banks. The BUSP was a partner with the Morris Bank in Indiana and Michigan, as well as taking bonds on credit from Mississippi.²³

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.²⁴

Default in the southern states cannot be blamed on high construction costs and unexpected revenue shortfalls either. All of the bond proceeds in Florida, Alabama, Mississippi, and Arkansas, and 93 percent in Louisiana, were used to buy stock in land or property banks rather than commercial banks.²⁵ Bank stock was purchased by a mortgage on the lands of the stockholder. Stockholders were able to borrow from the bank to buy new lands. The state purchased stock by issuing bonds or by guaranteeing the bonds of the individual banks. The bank's liquidity came from sale of the state bonds; their assets were the mortgages. Circumstances varied in each state, but in general the banks were supposed to service the state bonds out of the dividends paid on the state's stock in the banks. Although the states were ultimately liable for the bonds, state governments and tax payers never expected to pay one penny of principle or interest on the debt. The states expected private borrowers to meet their obligations to the banks. When the Crisis of 1839 led to the insolvency of the banks in 1840 and bond holders turned to the states for interest payments, these states simply refused to pay anything. Florida, Mississippi, and Arkansas defaulted on interest

payments between January and June of 1841, (Louisiana did not default until 1843), and in February 1842, Mississippi and Florida dramatically repudiated their bonds by legislative action.²⁶

Between 1837 and 1839, credit sales handled by banks like the BUSP and the Morris Bank amounted to over \$20 million of the bonds issued by the newest and most undeveloped states.²⁷ 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). This was an enormous amount of long term debt to put on the market in a very short period of time. When the banks over reached and defaulted on their obligations to the states, they set in motion the events that became the Crisis of 1839.

IV. Explanations

Panic and recovery: 1837 and 1838

Temin convincingly 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. These international pressures were transmitted through the cotton market focused in New York, and geography is part of Temin's evidence. Rousseau convincingly 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, and again geography is important. The Treasury data show clearly that New York banks bore the brunt of the Panic (Table 2). Temin and Rousseau are both right: both international and domestic forces were important in 1837.

When American banks suspended in May of 1837, financial conditions within America eased quickly, the deflation stopped, and the disruption shifted to the market for international exchange (Figure 2C). Several forces began working immediately to restore confidence and

liquidity to banks and stimulate economic recovery.

Nicholas Biddle and the Bank of the United States of Pennsylvania found themselves 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 cotton was in hand, he drew sterling bills on the cotton. Biddle and the Bank realized immediate profits on these exchange operations.²⁸ 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.²⁹ As table 2 shows, the BUSP increased its specie holdings and deposits in calendar 1837, a measure of the confidence it still enjoyed.

As Temin notes, a second important reason for the recovery in late 1837 and 1838 was the increase in state expenditures on internal improvements. He focuses on expenditures for transportation projects in Indiana, Illinois, and Michigan, followed by renewed construction in New York, Ohio, Pennsylvania, Maryland, and Massachusetts (Table 3). A less appreciated component of state investment was in banks in eight southern and western states. As noted earlier, states invested \$25 million in banks between 1837 and 1839, accounting for 75 percent of the rise in bank capital in those eight states between 1837 and 1840. Temin treats the banking system as an infinitely inflatable balloon: specie goes in one end and the money supply out the other. It is useful abstraction, but the ability of banks to convert specie reserves into deposits, loans, and currency also depended on their capital. Jane Knodell examined the importance of bank capital for the money supply in the early 1830s. Between 1830 and 1836, Fenstermaker estimates that authorized capital

in all banks in the United States rose from \$170 to \$436 million, and bank specie reserves grew by \$30 million.³⁰ Knodell estimates that 59 percent of the increase in credit creation by banks between 1830 and 1836 was due to increasing capital and 40 percent to increasing specie reserves. Knodell's results are an important qualification on Temin's conclusion that specie flow explains most of the money supply increase before 1837. They also suggest that state investment in banks was an important element in the post 1837 recovery.

State banking policy worked through another channel as well. Michigan and New York passed free banking legislation in 1837 and 1838, respectively.³¹ Michigan's experience was a disaster. The number of banks rose from 9 in January of 1837 to 40 in January of 1838, then fell to 25 in 1839, 9 in 1840, and 3 in 1841. The experience in New York was more mixed. The Treasury data only includes free banks in New York for January of 1840, when 63 free banks reported a capital of \$15 million and a circulation of \$3.5 million. These free banks based their note issue on state bonds, of course, strengthening the market for the bonds.³² Of the \$61 million increase in the banking system's paid in capital between 1837 and 1840 (Treasury data) two thirds came from direct investment by southern and western states (\$25 million) and by new capital in New York free banks (\$15 million). State banking policies contributed directly to the recovery of the banking system after the Panic of 1837.

Crisis: 1839

Temin bases his analysis of the Crisis of 1839 on two points. First, 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 discusses the Bank of England, the importance of international factors, tightness in international credit markets, and the declining price of cotton. Second, as in 1837, he exonerates the Bank of the United States: "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). Neither of these conclusions holds up very well. The BUSP was not the sole cause of the “depression in which it failed” but, just as it played an important role in the recovery from 1837, it played a central role in the coming of the depression in 1839. The bank’s story illuminates international as well as domestic causes of the Crisis.

When the bank lost its federal charter and was incorporated in Pennsylvania, it tried to find buyers for its old branches. The Philadelphia bank financed the purchase 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 allowed the bank to hold stock it acquired in “settlement of debts and advances.” In June of 1836, the charter was amended to allow the Bank to purchase the stock of other banks. 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 played an active role in marketing state bonds in 1837 and later. It took the entire \$5,000,000 Mississippi bond issue in 1838, which it purchased on credit, agreeing to advance the principal in periodic payments spread over the next year. 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. The bank’s balance sheet at three dates is shown in Table 5.³⁴ In March of 1836, all of the bank’s assets were liquid and short term: bills, specie, due from state banks, and state bank notes. In 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.

The movement into financing long-term investment projects was not the only change in bank policy. Late in 1837, the bank established an agency in London, headed by Samuel Jaudon, to handle its British affairs. It also created the firm of Humphrey's and Biddle in Liverpool to handle its cotton shipments. Jaudon's London agency became the bank's primary outlet for the marketing of state bonds.³⁵ With the establishment of the agency, the BUSP enjoyed the same international exchange facilities as Barings or Browns. The Bank was now able to draw bills on itself: purchase bills for cotton consigned to Humphreys and Biddle or sell bills to importers drawn on Jaudon.³⁶ 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."³⁷ There were three cotton operations. The first involved cotton purchased in the spring and sold in the fall of 1837.³⁸ The second purchases were made in the fall of 1837 and liquidated in the fall and winter of 1838 and 1839. The second operation was successful, largely because Humphreys and Biddle used Jaudon's financial resources to hold cotton off the market until the price rose after October of 1838. The operation netted profits of roughly \$800,000. The third operation was a dismal failure. Cotton purchased in May and June of 1839 had to be sold in August of 1839 and later, to keep Jaudon in funds, at a loss of \$962,524.13.

In his study of international capital flows, Jenks lays blame for the depression that began in 1839 on the failure of Biddle's "system" and his cotton speculation.³⁹ Jenks' story is repeated in Hammond and Temin. But even 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.

The bank's bond operations brought much greater losses. For example, 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. 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.

Biddle stepped down from the presidency of the bank in 1838, replaced by Thomas Dunlap, although he remained involved in its affairs. 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 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.⁴⁰ 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."⁴¹

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.⁴² 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.⁴³ 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.

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) Tracking the timing and purpose of state borrowing makes it clear that the crisis in 1839 could not have been caused by a cut off of European capital. Florida, Mississippi, Louisiana, Arkansas, and Alabama borrowed to establish banks, and by 1839 none sought to issue more bonds.⁴⁴ These states did not abandon their banks, their banks went under in 1840 and threw the burden of servicing their debts back onto the states. Indiana, Illinois, and Michigan stopped construction on their transportation projects because American banks defaulted on their obligations to pay for bonds the states had already issued, not because the states were trying, but unable, to float new bond issues in Europe. It is true that Indiana and Illinois scrambled for funds to pay interests on their debts in 1840, and approached European bankers for loans, but that is not why they abandoned their projects. Finally, New York and Ohio began ambitious projects widening and expanding their canal systems in 1837 and 1838. Both Ohio and New York continued to borrow substantial sums well into 1840. Ohio had a close relationship with Barings and its own banks.⁴⁵ Although Ohio and New York had to pay higher interest rates on

their bond issues after 1839 they were still able to borrow. As interest rates rose they were more likely to borrow from domestic sources, an important source of the collapse in 1842.

Did the Morris Canal and Banking Company (hereinafter 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. 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. 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 bills to London to cover the bank's obligations in Europe.⁴⁶ From the very inception of the plan, the Morris Bank used Indiana bonds to settle other obligations of the bank. When 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.

What happened in 1839 was affected by tightness in British credit markets and declining cotton prices. But a domestic payments crisis developed, not an international payments crisis. As early as August of 1839, the discounts on the bank notes of southern and western states began rising in Philadelphia.⁴⁷ It was in August that 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, 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. 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.⁴⁸ 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.

Temin's appeal to geography in 1837 -- that the panic falling heavily in New York was evidence of its international character -- can be inverted to argue that the lack of pressure on New York in 1839 is evidence of the crisis's domestic character. Undoubtedly, tightness in international credit markets and declining cotton prices played a role in the onset of the crisis, but they do not explain why New York and New England banks went relatively unscathed, why they were not forced to suspend specie payments, and they clearly do not explain why the Bank of the United States was forced to suspend in October of 1839. They have nothing to do with the default of the Morris bank in Indiana or the growing crisis in state finances there. It is the break down in markets for domestic exchange that needs to be explained. Why did northeastern banks lose confidence in southern and western banks? Why didn't the notes of southern and western banks quickly return to par in late 1839 or early 1840?

Decline: 1840 and 1841

When Boston and New York banks forced the BUSP suspension, pressures were immediately transmitted to the BUSP partners throughout the country, and to other southern and western banks through the bank note market. None of the factors that worked to bring about a rapid recovery in 1837 and 1838 were at work in 1839, instead, the situation deteriorated steadily through 1841. The Crisis in 1839 was not accompanied by disruptions in international finance, the price of 60 bills on London stayed at par or better. There were no international payments pressures on New York. Banks in New York and New England responded appropriately to the financial crisis by reducing circulation outstanding and loans and discounts (Table 2), but they did not experience large drains in specie or deposits. On the other hand, the BUSP was in no position to enter the international exchange market or the domestic cotton market. The BUSP could not stimulate recovery in 1840.

Nor was there an investment banking boom to stimulate recovery in 1840. Banks like the BUSP, the Morris Bank, the Phoenix Bank of New York had taken millions of dollars in state bonds. Stock holdings of banks (Table 1, row 12) were primarily state bonds, and stock holdings rose from \$12 million in January 1837, to \$37 million in 1840 (\$16 million by BUSP), and \$23 million in 1841. Illinois and Indiana bonds had traded for roughly 90 percent of par in London and New York in June of 1839, by November 1839 they traded at 60 percent of par.⁴⁹ In the winter of 1841, the Indiana, Mississippi, and Illinois bonds were trading at a quarter of par. Banks holding substantial amounts of state bonds in their portfolios, including the State Bank of Illinois and free banks in New York and Michigan, were in serious trouble.⁵⁰

It is difficult to overemphasize the importance of the collapse in land values. Unfortunately, only Indiana has reliable annual statistics on land values, but land values fell sharply throughout the country after 1839. Public land sales came to a virtual halt. Falling land values endangered northwestern banks and, combined with falling cotton prices, were critical for southern banks. Borrowers (i.e., stockholders) in southern land banks were often better off defaulting than servicing their mortgages. Banks liable for interest payments on state bonds, like the Union Bank of Mississippi, did not pay dividends in 1840. When the balance in the state's dividend was exhausted, the banks stopped paying interest on state bonds, throwing the interest burden back on unsuspecting state governments and taxpayers. Southern banks, already weakened by the Panic in 1837, suspended specie payments, and many never reopened.⁵¹ In January 1835, Florida, Alabama, Mississippi, Louisiana, and Arkansas combined had 18 banks with paid in capital of \$38,330,000; by January 1839, there were 51 banks with a paid in capital of \$89,893,741; and by January 1, 1843 there remained only 8 banks (6 in Louisiana and 2 in Alabama), with a paid in capital of \$23,996,340. These banks did not fail because of a liquidity crisis: they became insolvent when the lands that served as the security for their assets fell in value.⁵² Cotton prices fluctuated sharply in 1837, perhaps because of the Bank of England's policies, but cotton prices did not continue to decline because of the Bank of England. The long term decline in land and cotton prices in the

United States after 1839 resulted from the shrinking American money supply, a result of the destruction and contraction of the banking system in the south and west. The causation is circular, but it is a domestic circle.

The collapse of the investment banks complicated things further. Indiana, Michigan, and Arkansas issued bonds on credit terms to investment banks between 1837 and 1839, and the banks were now in default.⁵³ In 1840, legislatures began to consider repudiation as an option for the “suspended debt.” Repudiation was not an idle threat, Michigan and Arkansas did repudiate their unpaid bonds. The American states could not be challenged legally through the courts, even the federal courts, should they decide to default or repudiate: the eleventh amendment to the federal constitution gave them immunity from prosecution. What started out as a banking crisis developed into a default and repudiation crisis. At stake was the sanctity of contracts and the obligation of states to honor their debts. In 1840 and 1841, western and southern states underwent a default crisis. The crisis moved north and east as 1841 unfolded.

Collapse: 1841 and 1842

Two puzzles remain unsolved. First, why is 1842 not a major financial crisis in our economic histories? To begin with, this was not a national banking crisis. Banks in New England and New York did not suspend in 1839, and continued paying specie through 1843. The BUSP failed in February 1841 and no longer served as the focal point for national news about banking.⁵⁴ As a result, newspapers in England and America did not treat this as a national financial crisis as they had in 1837 and 1839. Perhaps most important, the ongoing crisis in state government finance had few surprises. Beginning with Indiana in January of 1841, states defaulted on their debts throughout the year. It had been apparent since early 1840 that Indiana, Mississippi, Arkansas, Florida, Illinois, and Michigan were in dire straits and were likely to default at some point. Their defaults were not “crises.” Politicians in Mississippi and Florida many times expressed their strong sentiments that the honor of the state would never be impaired, but Mississippi Governor McNutt expressed his opinion in January 1841 that the \$5,000,000 in Union Bank bonds taken by the BUSP

had been authorized unconstitutionally and improperly marketed. Repudiation in Mississippi and Florida in February of 1842 was not a surprise. The continuous series of defaults, capped by repudiation dampened the level of economic activity, raised uncertainty in financial markets, and depressed security prices, but they were anticipated and so had modest effects on markets and in newspapers.

The second mystery: why then did the national market for bank notes suffer such a severe disruption in late 1841 and early 1842? The widespread decline in the prices of western and southern notes suggests a common cause, but there was no distinct western or southern crisis in late 1841 or 1842, and western state defaults predate the bank note crisis. An alternative to a western and southern explanation are events in New York and Pennsylvania. As shown in Table 3, Ohio, New York, and Pennsylvania continued to borrow in 1839 and 1840. As credit markets tightened, 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.

Louisiana's position in 1841 was quite precarious, hammered as it was by bank closings, bank failures, and declining land and cotton prices. In February of 1842, the state passed a Banking law requiring the suspended banks to resume specie payments within twenty five days or go into liquidation. Several banks immediately went into receivership and were taken over by the state.

Van Court reports only one note price for Louisiana bank notes from April 1842 to October 1842, and when prices resume in November the discounts were 40 percent. The absence of quotations for Louisiana bank notes in Figure 3C reflects extreme uncertainty about the fate of Louisiana banks between 1842 and 1843. In the Banking Law of 1842, the state “assumed the responsibility of paying off some \$17,000,000 of defaulted bonds; and when the legislature met in 1843, it immediately took up the problem of liquidating the banks and funding the bonds. The Law of 1843, in addition to setting up the machinery for liquidating banks taken over by the state, permitted debtors to pay off their obligations to the state in [state] bonds at par value.”⁵⁵ The Banking Law of 1843 made it clear what would happen to the banks. By allowing debtors to the banks to pay off their obligations at the face value of deeply depreciated bonds, the state betrayed the legitimate interests of other bondholders who were not debtors to the bank.⁵⁶ The 1843 bank law, however, restored order to the market for Louisiana bank notes.

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 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.”⁵⁷ 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 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.⁵⁸ 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.⁵⁹”

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, Europeans were unwilling to purchase large amounts of American bonds, and New York was forced to turn to its own banks.⁶⁰ 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.”⁶¹ 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, Ohio, and Louisiana all 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.

The next issue the New York legislature took up after the Stop and Tax Act was a “‘people’s resolution,’ a constitutional amendment designed to prevent a recurrence of the state debt crisis.”

New York would be one of the first states to write a new constitution incorporating procedural restriction on the creation of government debt. Between 1842 and 1852, Rhode Island, New Jersey, Louisiana (twice), New York, Illinois, Kentucky, Michigan, Virginia, Indiana, Maryland and Ohio would all write new constitution. Only Virginia would fail to regulate state debt issue. Every state but Kentucky and Virginia changed state policy with regard to corporations, typically mandating general incorporation laws and changing how banks were created and regulated. The economic depression of 1839 to 1843 had, indeed, produced a constitutional revolution.

V. Conclusions

This paper asks why, if the inflation from 1835 to 1837, the Panic of 1837, and the economic depression that followed the Crisis of 1839 had been caused by international forces exogenous to the United States, did Americans in the 1840s believe that the cause of the economic depression had been misguided policies of state governments with regard to investment in internal improvements and banks? The inflation from 1835 to 1837 undoubtedly resulted from specie inflows from Britain and Mexico and the reduction in specie outflows to the Orient. The Panic of 1837 was caused by a combination of international and domestic forces: the policy of the Bank of England, Jackson's specie circular, and the distribution of the federal surplus.

Yet the Panic of 1837 did nothing to stop state borrowing. Between 1837 and 1840, states borrowed \$100 million, over half of the debt outstanding at the end of 1841 was incurred after the Panic. State promotion of internal improvements and state banks contributed an unquantified amount to the recovery of the economy in late 1837 and 1838. The American banking system facilitated this surge of borrowing when several banks, the most important being the Bank of the United States of Pennsylvania, transformed from traditional commercial banks into investment banks. While the BUSP's policy may have been good for the country, it was bad for the bank. By the summer of 1839, the transformation of BUSP assets from short term liquid paper to long term, illiquid state bonds and private securities as well as the continuing issue of post notes brought the

BUSP to a bad end. Tightness in international financial markets certainly played a role in the Crisis of 1839, but the suspension of the BUSP was brought on by domestic creditors.

The origins of the crisis came from within the United States. The Morris Bank's default on its obligations to Indiana in August 1839 was the critical event for Indiana. When construction on its canal and railroad projects had to be stopped because funds were not forthcoming from the Morris Bank, land values throughout the state plummeted. Indiana defaulted in 1841 because land values were half of their level in 1837. Conditions in Illinois and Michigan were similar: construction stopped, land values fell, and default on state bonds was unavoidable. Southern land banks, financed through state bonds issues, were caught in a double bind: falling cotton prices and falling land values. When the banks failed to pay their dividends and bond holders pressed states for payments in their bonds, these states simply refused to pay. The final collapse came in the winter of 1842, when wealthy northeastern states that could pay their debts if they chose, struggled with how they should raise the needed funds and, in the process, created uncertainty about the viability and situation of banks in their states.

Voters and politicians in 1842 were perfectly justified in blaming the economic depression, and the recurring economic crises, on domestic forces. They were right to suspect that banks, state government borrowing, and the interaction between banks and states played a central role in the economic instability that followed the Panic of 1837. Whether the measures they adopted to prevent such a crisis from happening again actually worked is a subject for further investigation.

Endnotes

1. For the macroeconomic history see Temin *Jacksonian Economy*, “Economic Consequences,” and “Anglo-American,” Matthews *Trade-Cycle*, Gayer, Rostow, and Schwartz *Growth and Fluctuation*, McGrane *Panic of 1837*, Timberlake “Specie Circular” and *Central Banking*, Macesish “Monetary Disturbance,” and Rousseau “Jacksonian Monetary Policy.” For a discussion of how banking and other economic issues shaped the debate between the parties see Holt, *Political Crisis*, pp 17-38; Holt, *Whig Party*, pp. 76-82; Shade, *Banks*, pp. 40-59; and McCormack, *Party Period*, pp. 162-166.
2. These percentages are calculated as absolute change as percent of the average price level in the two months. The prices are Smith and Cole, *Fluctuations*, “Weighted index of General Wholesale Commodity Prices,” p. 158.
3. Temin’s conclusion is problematic. Gallman never intended his annual GNP estimates to be used for business cycle analysis. In 1839, agricultural output accounted for 50 percent of GNP, either directly as final product, or indirectly as the interpolating series for manufactured perishables. Fluctuations in the level of agricultural output have nothing to do with the business cycle, particular in a period like this one where so much new land was coming on line. The “consumer services” component of GNP was interpolated on a series measuring the service flows from the housing stock. By construction, this component of GNP could not go down from year to year, it could only rise. So 80 percent of GNP is either constrained not to fall, or has nothing to do with the business cycle. See Rhode “Gallman’s Annual Output Series.”
4. 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.
5. See Woodman, *King Cotton and His Retainers* and Perkins, *Anglo-American Trade*, for a description of cotton finances.
6. See Catterall, *Second Bank*, Smith *BUS*, and Hammond *Politics*, for a description of the Bank’s important role in this market.
7. 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.
8. See Clapham, p. 152-54. Of course, the bill market in London was far larger than just the American component. By the 1830s the Bank of England was out of the business of directly discounting bills, Clapham, pp. 131-42.

9. See Knodell "Profit and Duty," Caterall *The Second Bank*, Smith *BUS*, and Bodenhorn, *History of Banking*.

10. 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.

11. 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.

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. On January 1, 1836, the Bank of the United States still held its federal charter. In later years it was the Bank of the United States of Pennsylvania or BUSP.

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. 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.

17. 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.

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

19. The table reports debt issued. Debt authorized for banks was even greater. In 1839 state authorized \$2,880,000 for bank investments, but the debt was never issued.

20. The generalization does not even hold for Pennsylvania and Maryland, either. They began their canals in the late 1820s, and by the mid-1830s it was clear that tolls on the Pennsylvania Main Line and Maryland's Chesapeake and Ohio Canal would barely cover maintenance costs, to say nothing of servicing state bonds or returning a dividend to the state Treasury. But both states borrowed heavily after 1837, when it was clear that canal tolls would not service additional debts.

21. The five year tax moratorium was a feature of the enabling acts of all states admitted from Ohio to Missouri. In 1835 and 1836 combined, 4,932,000 acres of public land were sold in Indiana, 5,297,000 acres of land were sold in Illinois, and 6,007,000 acres of land were sold in Michigan. In 1835, Indiana levied property taxes on 5,210,735 acres of land and Illinois levied property taxes on 6,400,000 acres of land. Acres taxes in 1835 are not available for Michigan, but in 1840 Michigan levied taxes on only 4,086,310 acres of land.

22. See Milton Stapp to Noah Noble, August 6, 1839, Riker, *Wallace Papers*, p. 260. The situation in the summer of 1839 is described in Fatout, *Indiana Canals*, pp.93-101, Esarey, *History of Indiana*, pp. 423-27, McGrane, *Foreign Bondholders*, pp. 129-35.

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

24. 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."

25. See Schweikart, *Banking in the American South*, for a general discussion of southern banks and Sparks, *History and Theory*, pp. 83-113, for an explicit description of land banks.

26. Arkansas repudiated part of its debts and did not resume interest payments on the remainder until 1869. Louisiana drew a distinction between the "State debt proper" and debts issued on behalf on banks. Louisiana resumed interest payment on the "state debt" in 1844, but never paid anything on the bank debt. See English, "Sovereign Default," p. 265. Louisiana forced bondholders to foreclose on the property of the banks' debtors. In Mississippi the state repudiation effectively released the mortgagees from their obligations to the banks.

27. 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.

28. 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.

29. 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.

30. Of the \$266 million increase, \$37 million (14 percent) was in the northwest and \$90 million (34 percent) in the southwest. In 1830, the northwest had only 6 percent of the nation's banking capital and the southwest 10 percent. Figures in the text are taken from Fenstermaker, pp. 77, 80, 84, 87, 91, and 111. Knodell, "Frontier Growth," bases her calculations on Fenstermaker. Fenstermaker reports authorized, not paid in capital. In 1837, Fenstermaker reports \$471 million in bank capital nation wide, while the Treasury reports only \$293 million in paid in capital. The Treasury total rose to \$316 in 1838, \$306 in 1839 (nothing is reported for Mississippi banks in 1839, they had \$20 million in capital in 1838), and \$358 in 1840.

31. See Shade, *Banks or No Banks?* and Rockoff, "Free Banking Era" and "Money, Prices, and Banks," and for a description of Free Banking in New York and Michigan.

32. In 1844, the New York comptroller reported that the still operating free banks had deposited state bonds from Michigan, Indiana, Illinois, Arkansas, Alabama, Kentucky, and Maine with a face value of \$3,744,829 that the Comptroller valued at \$2,745,156. As reported in Knox, p. 418.

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. "As soon as the Agency was established, Biddle endeavored to make it a channel for the export of American securities to London. If the sale of high-price cotton would improve the international financial position of the United States the sale of high-priced pieces of paper would

serve that purpose too. Throughout October and November [1837] he wrote to numerous state officials and private individuals calling their attention to the new channel for the foreign disposition of stocks and bonds. The Illinois 6 per cent Sterling bonds were the first important issue thus secured.” Smith, p. 199.

36. The bank’s relations with Barings were already strained in the summer of 1837 with Barings attempts to curtail its American exposure. With the establishment of Jaudon’s agency, the BUSP and Barings formally parted, eliminating the open credit at Barings that the BUSP had enjoyed previously. See the discussion in Hidy, pp. 235-259.

37. House Document 226, p. 419.

38. 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.

39. ”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.

40. Hammond, “Chestnut Street Raid.”

41. 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.

42. Smith, *Economic Consequences*, p. 218. The first two loans were fully collateralized by the bonds, the third loan was not. There may have been other collateral.

43. 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.

44. Arkansas was still trying to get paid for the bonds it had issued to the North American Trust and Banking Company of New York, but the state was not trying to issue new bonds. McGrane, *Foreign Bondholders*, p. 249.

45. 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 its banks, which contributed to uncertainty in Ohio over the future and viability of the banks, see below.

46. 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.

47. 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.

48. 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.

49. The information on the bond prices of the western states is too spotty to date exactly when their prices began declining. Unfortunately, one of the gaps in bond prices for Indiana and Illinois comes between June and November of 1839. Price taken from Sylla, Wilson, and Wright.

50. Of the \$23 million in "stock" held by banks on January 1, 1841, \$4.6 million was held by New York banks (excluding free banks which are not reported by the Treasury in 1841), \$4.6 million in Pennsylvania, \$2.2 million in South Carolina, \$2.9 million in Kentucky, \$2.1 million in Illinois, \$1.8 million in Georgia,

51. The BUSP had encouraged several southern banks to join in its cotton speculations, and these banks were doubly cursed. See Kilbourne, *Bank of the United States*.

52. For evidence on insolvency in northwestern banks see Knodell *Financial Structure*.

53. The BUSP would continue to honor its obligations to Michigan until its failure in February 1841. At that point it stopped payments to Michigan, bringing on default in that state.

54. The *Circular to Bankers* clearly demonstrates the BUSP effect. In 1839, the *Circular* is obsessed with Jaudon's activity and follows the news from Philadelphia closely. In 1842, very little is reported, not even the Mississippi repudiation is big news.

55. Caldwell, *A Banking History*, p. 66. My discussion of Louisiana is based on Caldwell and Green, *Finance and Economic Development*.

56. For a discussion of Louisiana's perfidy, see Curtiss, "State Debts."

57. 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. Failure to sell bonds at par was one of the legal technicalities used by Mississippi to justify its repudiation in February 1842.

58. 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.

59. 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.

60. Sowers, *New York State*, p. 70. I believe that New York was constrained to sell bonds at par or better, which they could do New York banks, but not in London.

61. 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 (7)/(8)
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
BUS	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 BUS	-8%	1.74	-16%	0.60	6%	1.00	-12%	0.52		
Total										
w/ BUS	-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
BUS	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 BUS	-38%	1.01	-20%	0.69	-8%	1.00	-27%	0.75		
Total										
w/ BUS	-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
BUS	-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 BUS	-19%	0.84	-19%	0.79	-36%	1.00	-49%	0.90		
Total										
w/ BUS	-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
BUS	-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 BUS	-8%	0.75	-14%	0.58	-28%	1.00	-38%	0.79		
Total										
w/ BUS	-10%	1.00	-22%	1.00	-28%	1.00	-44%	1.00		

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	January 1846
		Repudiated Partially	Part paid bonds, July 1849
Illinois	January 1842	Resumed	July 1846
Maryland	January 1842	Resumed	July 1848
Pennsylvania	August 1842	Resumed	February 1845
Louisiana	February 1843	Resumed	1844
		Repudiated	??

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:

$$\text{Row 14} = \text{row 7} + \text{row 8} + (\text{row 5} - \text{row 10}) - \text{row 13}$$

Table 2:

Treasury Reports, as in Table 1.

Table 3:

English, "Sovereign Default."

Table 4:

"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 5:

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

Figure 1A -- Smith and Cole Prices

1834-1842 = 100

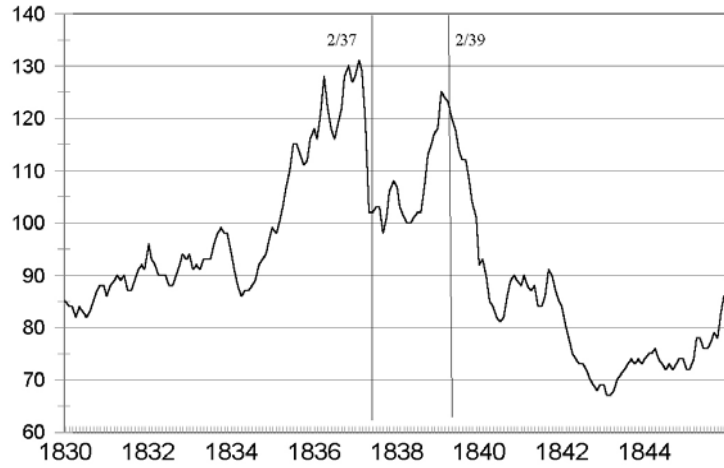


Fig. 1C - US Exports and Imports

millions of dollars



Figure 1B Annual Land Sales

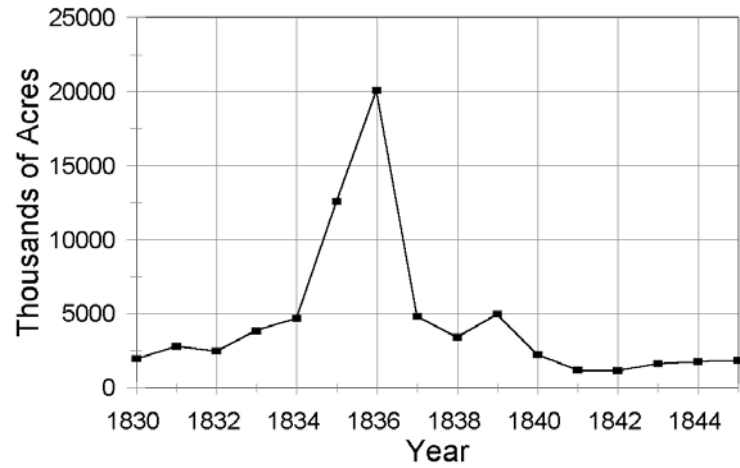


Fig. 2A - Cotton Prices, High & Low
New Orleans, Weekly, cents per pound

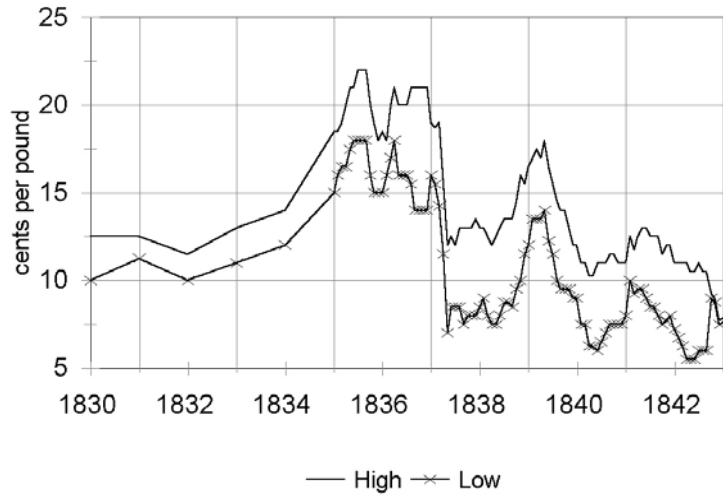


Fig. 2C-- Interest Rates
America and Britain (scaled)

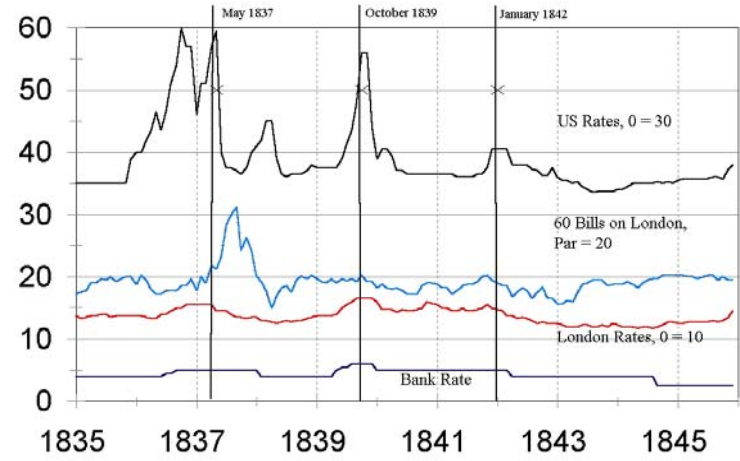


Fig 2B - Cotton Prices and Margins

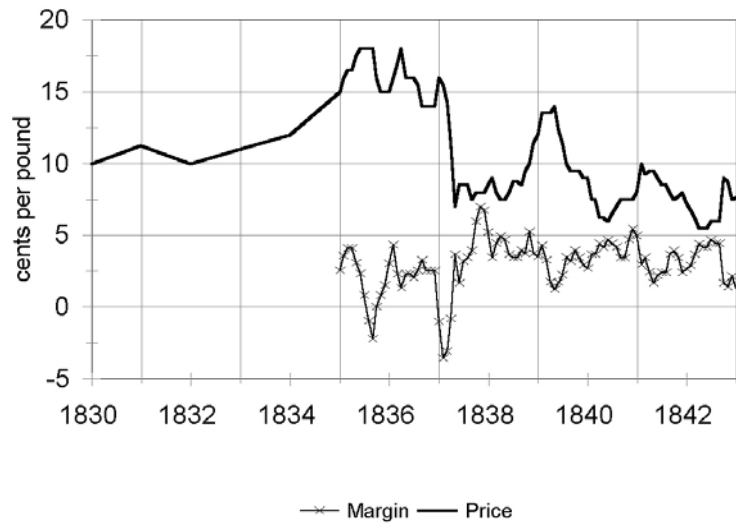


Fig. 3A - Monthly Bank Note Discounts
NY Prices (scaled)

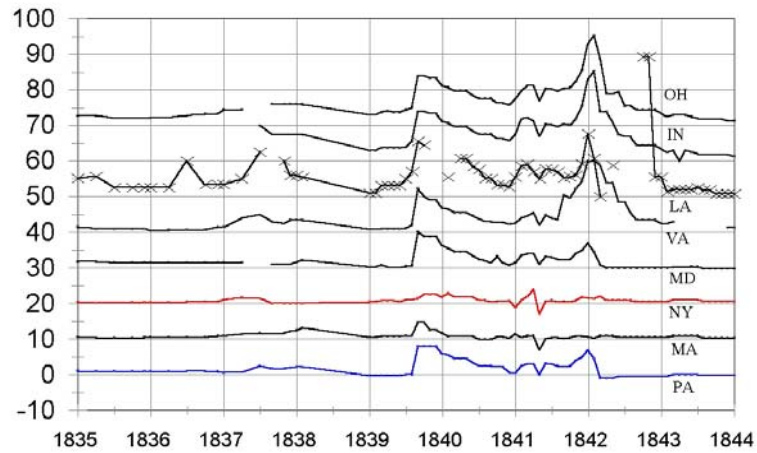


Fig. 3C - Average Discount on Notes
VA,NC,SC,GA,AL,LA,OH,IN,TN,KY,MO

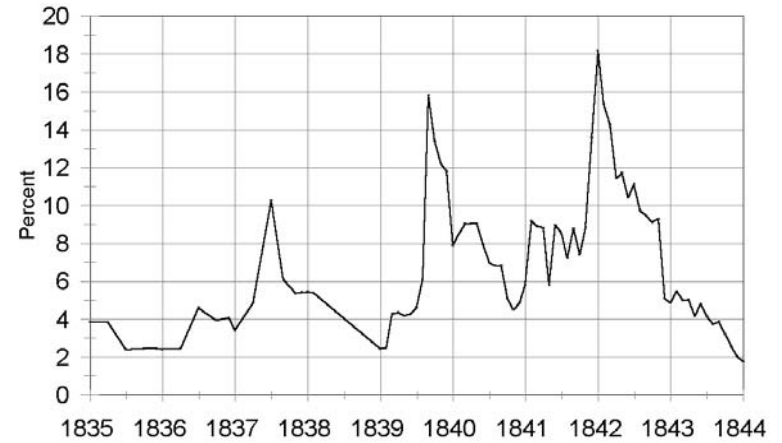


Fig. 3B - Monthly Bank Note Discounts
Southern Banks, NY Prices (scaled)

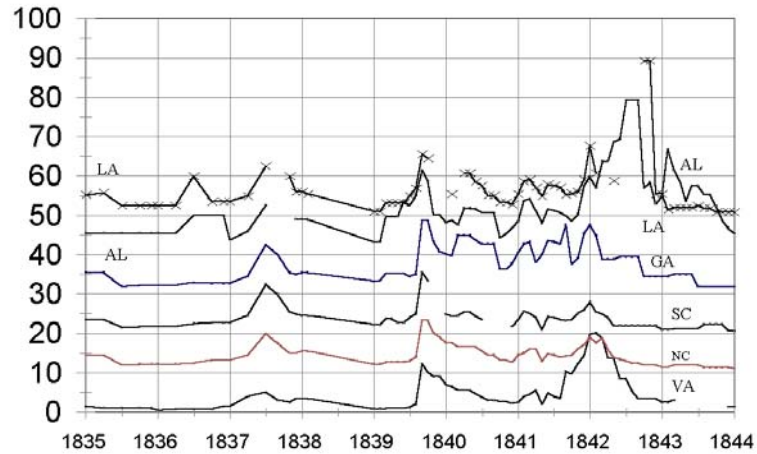


Figure 3D

Bank Note Discounts and Cotton Margins

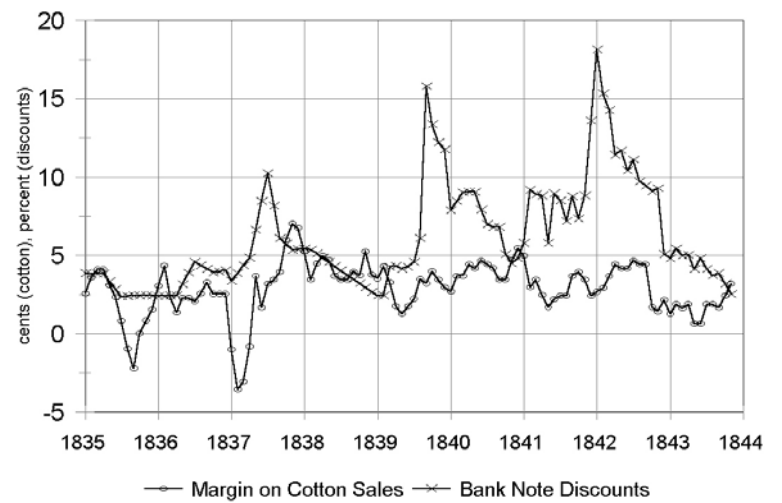


Fig. 4A - Pennsylvania Bond Prices

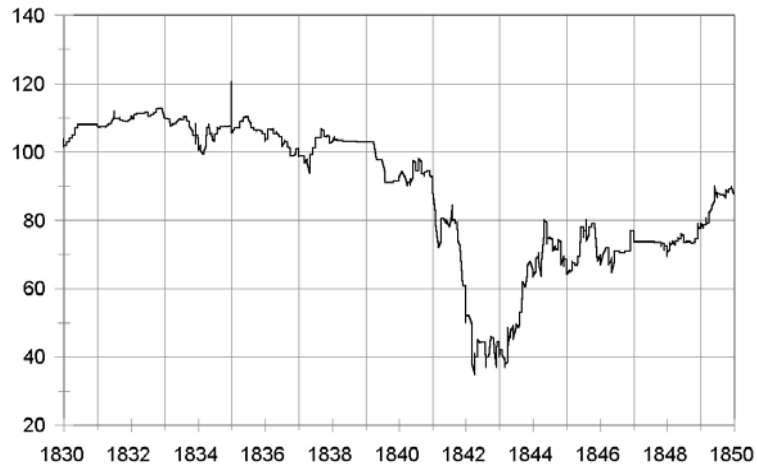


Fig. 4C - New York Bond Prices

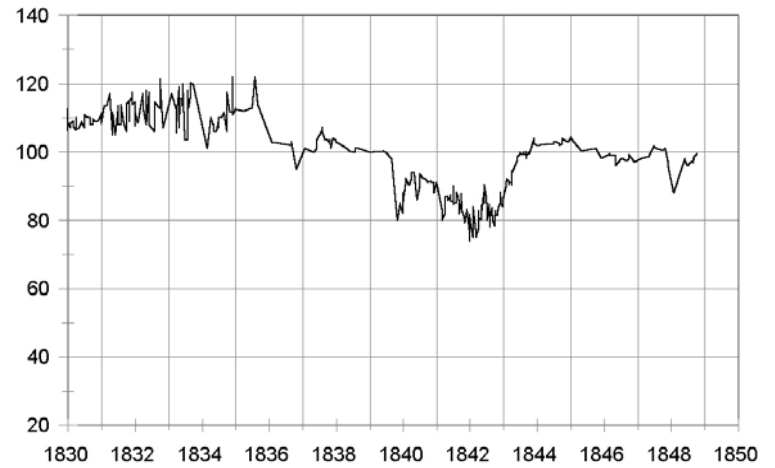


Fig. 4B - Philadelphia Bank Stock Prices

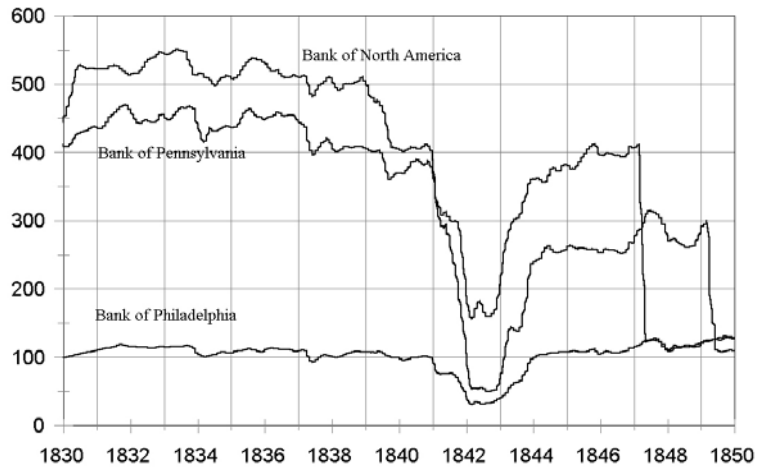


Fig. 4D - New York City Bank Stocks

City, Manhattan, Chemical, Mechanics

