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THE CAPITAL MARKET IN THE 1850s

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ABSTRACT

This paper brings together data from a variety of sources to create a portrait of net rates of return to capital in banking in the 1850s. The primary purpose is to provide estimates comparable to those developed by Lance Davis and many subsequent reasearchers for the post-bellum period. The conclusion that emerges is that the capital market in the developed regions of the U.S. was fairly well integrated in the 1850s, and that part of the wide divergence in rates observed in the 1870s was due to the the disruptions caused by the Civil War.

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1. THE DEBATE OVER THE INTEGRATION OF THE CAPITAL MARKET

This paper pulls together information from a variety of sources to create a portrait of rates of return to bank capital and earning assets held by banks in different parts of the country in the 1850s. The main purpose is to extend the Davis-Sylla-James-Smiley literature on post-bellum regional interest rates to the ante-bellum period. In the pathbreaking article that started it all Lance Davis showed that regional interest rates varied widely in the immediate post-bellum years and converged slowly.² A number of explanations of this phenomenon have been offered. Davis stressed the extension of the commercial paper market; Richard Sylla stressed increased competition in banking and especially the provision for smaller National Banks in the Gold Standard Act of 1900; John James, the revival of free banking; Jeffrey Williamson, changing demands for capital; and Marie Elizabeth Sushka and Brian W. Barrett, the development of the stock market.³

²Davis, Lance, "The Investment Market, 1870-1914: Evolution of a National Market" Journal of Economic History, 25 (Sept. 1965), 355-99. The title of my paper refers to the short-term capital market, following Davis's usage. He considered rates of return to the earning assets of banks to be short-term rates. To the extent that banks regularly rolled over loans for long-term customers, these may have reflected long rates.

³Richard Sylla, "Federal Policy, Banking Market Structure, and Capital Mobilization in the United States, 1863-1913," Journal of Economic History 29 (Dec. 1969), 657-86; John James, "The Development of the National Money Market," Journal of Economic History 36 (Dec. 1976), 878-97; Jeffrey G. Williamson, Late Nineteenth Century American Development: A General Equilibrium History (London and New York: Cambridge University Press, 1974), chapter 6, 119-145; Marie Elizabeth Sushka and Brian W. Barrett, "Banking Structure and the National Capital Market 1869-1914," Journal of Economic History XLIV (June 1984), 463-477. This list is not intended to be complete, or even entirely fair to those I have included. The point is simply to

I made a stab at this problem myself a number of years ago, arguing that different risks of bank failure were the crucial factor.⁴ Various attempts have been made to refine Davis's estimates.⁵ And there have been attempts to see whether a similar phenomenon can be observed within a given state or in other countries.⁶ But so far no attempt has been made to see whether a related pattern held in the United States before the Civil War.

Such an effort is important for several reasons. First, the standard interpretation of the post-bellum years may be misleading. The divergent character of rates in the aftermath of the war may be a product of the disruption of the capital market during the War. This is most likely to be the case for the South, a major contributor to the impression that rates were divergent until late in the nineteenth century. If this conjecture turns out to be correct it will throw into doubt some explanations of the convergence of rates that assume that there were important barriers to the inter-regional mobility of capital that had to be broken down by

illustrate the wide range of work stimulated by Davis's paper.

⁴Hugh Rockoff, "Regional Interest Rates and Bank Failures," Explorations in Economic History 14 (Winter 1977), 90-95.

⁵Gene Smiley, "Interest Rate Movements in the United States, 1888-1913," Journal of Economic History XXXV (Sept. 1975), 591-620; John James, "Banking Market Structure, Risk, and the Pattern of Local Interest Rates in the United States, 1893-1911," Review of Economics and Statistics (Nov. 1976), 453-62.

⁶Richard Keehn, "Market Power and Bank Lending: Some Evidence from Wisconsin, 1870-1900," Journal of Economic History 35 (Sept. 1975), 591-620; Kenneth A Lewis and Kozo Yamamura, "Industrialization and Interregional Interest Rate Structure: The Japanese Case, 1889-1925," Explorations in Economic History, 8 (Summer 1971), 473-99; David F. Good, "Financial Integration in Late Nineteenth-Century Austria," Journal of Economic History, 37 (December 1977), 890-910.

institutional innovations or legal changes.

What we expect to find in the ante-bellum period depends on the theory of post-bellum convergence we accept. If we believe that interest rate differentials were the result of an irrational prejudice against investing in capital-poor regions we would not be surprised to see the late ante-bellum period exhibit the same interest rate profile as the early post-bellum period. But if, for example, we agree with Sylla that the post-bellum divergence of rates was an artifact created by the National Banking Act then we would expect to see prewar rates close together, or at least showing a different pattern of divergence.⁷ In any case, the War caused major disturbances to the normal functioning of the capital market. By looking at the ante-bellum rates we can establish a better baseline for our examination of post-bellum trends.

This set of data is also relevant to the controversy over the profitability of slavery. After the profitability of slavery is measured, the question becomes with what alternative investment should we compare slavery? In Time on the Cross, for example, Robert Fogel and Stanley Engerman compare slavery with northern textile mills and southern railroads.⁸ The data presented here broaden the range of alternatives. Banking was an institution that southern planters were familiar with, and a reasonable alternative for a planter seeking to shift some of his wealth

⁷The National Banking Act established a minimum size for National Banks. A related law placed a prohibitive tax on state bank notes. Together these restrictions, in Sylla's view, created bank monopolies in the rural towns of the South and West.

⁸Robert W. Fogel and Stanley L. Engerman, Time on the Cross: The Economics of American Negro Slavery (Boston and Toronto: Little Brown and Company, 1974), vol.1, p. 70.

into financial assets. So these rates will give us a clearer idea where slavery fell in the spectrum of available alternatives.

The structure of the paper is straightforward. In section 2 I discuss the various measures of interest rates and profit rates from a theoretical point of view. Section 3.1 discusses the estimates for New England; section 3.2, the Mid-Atlantic estimates; section 3.3, the Southern estimates; and section 3.4, the Western estimates. The main purpose of the detailed estimates in section 3 is to compare various possible refinements in the estimates along the line suggested by James and Smiley. These estimates are pulled together to make inter-regional comparisons in section 4. Readers concerned only with the "bottom line" may skip the more detailed discussions in section 3 (although they will miss numerous illuminating insights into the nature of ante-bellum banking). The disruptions caused by the Civil War are discussed in section 5. The implications of the ante-bellum rates for the debate over the post-bellum capital market are discussed in section 6. Section 7 contains some brief concluding remarks.

2. MEASURES OF INTEREST RATES DERIVED FROM BANK DATA

Only limited sorts of data are readily available for the ante-bellum period, and only at scattered locations for scattered dates. A major research effort would be needed to compile long time series for a large number of representative locations. This paper is an exploratory effort that shows, I believe, that such an effort would be worthwhile, and might lead to a substantial revision of our thinking about the integration of the capital market in the United States.

Typically, we can find balance sheets for banks or groups of banks,

usually on an annual basis, and more rarely dividend rates. From these bits of information several rates of return can be calculated. Some familiarity with a typical ante-bellum bank balance sheet is necessary to understand how the rates of return are calculated. A typical balance sheet is given below.

Assets	Liabilities
Specie	Circulation
Notes of Other Banks	Deposits
Due from Other Banks	Other Liabilities
Loans and Discounts
Bonds	Surplus
Real Estate and	Capital
Other Assets	

The Specie of the bank is its reserve of gold and silver, and of course, earns no interest. Notes of Other Banks and Due from Other Banks stand next to specie itself in terms of liquidity, and I have treated them as if they typically earn no interest. Some bankers balances paid interest, but I do not know of any evidence on actual rates paid. In any case, bankers balances would have paid a relatively low rate and were typically a small proportion of assets. Loans and Discounts are the main earning items of the banks. The term "discount" was used frequently because a typical form of lending was by discounting promissory notes. A borrower would write a simple note: "I promise to pay the bank \$1000 on June 1." Interest would then be taken by discounting the note, paying say \$900 for it on the preceeding January 1. A bank might also own municipal, state, federal, railroad, or canal bonds. These could be sold on a national market and bore a lower rate of interest than loans to individuals. The last item, Real Estate, includes the building, the flagpole, and any earning properties the bank owned. I have generally treated this item, normally rather small due to

legal restrictions, as a non-earning asset.

On the liability side of the balance sheet we find the bank's Circulation. This is the currency the bank issues which then "circulates" from hand to hand as money. Bank notes, of course, bore no interest. Deposits may be either interest bearing or non-interest bearing, although our limited information for New England suggests that the proportion of interest bearing deposits was normally rather small. Capital is the initial book value of equity and Surplus the amount added over the years. Antebellum bank balance sheets often refer to "Capital Paid In" rather than simply to Capital. The difference arises because the intial subscribers often offered a note in partial payment for their shares.

From these balance sheet items, and from the dividends paid to shareholders, we can construct several rates of return. First we can look at the matter from the point of view of an investor in a bank and compute (1) the ratio of dividends to Capital and (2) the ratio of dividends plus retained earnings to Capital plus Surplus. It might seem that measure (2) is preferable since it includes all earnings of the bank in the numerator and total capital in the denominator. But this need not be the case. Since the dividend rate was the most widely known and discussed statistic, bank managers may have attempted to adjust the dividend rate to convey accurate information about the long term rate of return, and investors may have acted on it. In examining the dividend rates we may actually be following in the footsteps of nineteenth century investors. Measure (1), moreover, is more readily available since it does not require balance sheets.

We can also compute two measures from the asset side of the balance sheet: (3) the ratio of dividends plus change in Surplus to earning assets

(Loans and Bonds), or a more refined measure of the gross earnings on loans such as (4) dividends plus change in Surplus plus interest on deposits less interest on Bond holdings divided by Loans. These measures address the issue of whether local lending rates were equalized by competition among banks and other intermediaries.

Equalization of one of these rates, of course, is neither necessary nor sufficient to prove that the capital market was efficient. First, there is the problem of risk and uncertainty varying from region to region. And the costs of acquiring information about borrowers or other costs of banking might differ from region to region. This is the burden of George Stigler's criticism of Davis's work.⁹

A related problem emerges when we face the issue of how to interpret a difference in interest rates once we have computed them. Should we look at the relative difference in rates or the absolute difference? For example assume that initially the rate in region A was 8 percent and in region B the rate was 10 percent. Later the rate fell to 2 percent in A, and 3 percent in B. In absolute terms the gap has narrowed from 2 percent to 1 percent. But in relative terms it has widened from 22 percent in the initial period (2/9) to 40 percent (1/2.5) in the later period. The consensus in the literature is that absolute differences are what count. Smiley's use of the coefficient of variation to measure dispersion, for example, was criticized by both Sylla and James.¹⁰ The argument is simply that a dollar is a dollar. If

⁹George Stigler, "Imperfections in the Capital Market," chap. in The Organization of Industry (Homewood, Illinois: Richard D. Irwin, Inc., 1968, p. 116; reprinted from Journal of Political Economy LXXV, June 1967), 113-122.

¹⁰Richard Sylla, "Financial Intermediaries in Economic History: Quantitative Research on the Seminal Hypotheses of Lance Davis and Alexander Gershenkron," in Recent Developments in the

arbitrageurs can make additional profits from moving money from region A to region B they will do so, and the supply response will depend on the size of the gain. I must confess to some uneasiness about this argument. It seems to neglect the declining marginal utility of further gains when interest rates are already high. Will an investor in region A be as likely to move his capital to region B in response to a small absolute gain when he is earning 8 percent as when he is earning only 2 percent? But in the analysis below I will concentrate on absolute differentials to maintain comparability with the post-bellum studies.

Here I exploit three sources of data: (1) Histories of individual banks, or of banking systems (2) Bankers' Magazine (3) reports to the state banking authorities.¹¹ My best example in category (1) is an essay on Rhode Island by Howard Kemble Stokes.¹² This source gives balance sheets for Rhode Island going back to 1809. Beginning in 1837 there are annual dividends. Included in the balance sheets is the breakdown between interest bearing and non-interest bearing deposits so a better than usual estimate of the cost of deposits to the banks can be developed. This source has rarely been exploited by banking historians. Bankers' Magazine reported dividends and

Study of Business History: Essays in Memory of Herman E. Krooss, ed. Robert E. Gallman, Research in Economic History, supplement 1, 1977, p. 68; John James, "The Development of the National Money Market," 879-80.

¹¹I have used some of this data before in order to examine the affects of free banking laws on rates of return, here I add data from states where that was not a pressing issue. Hugh Rockoff, "The Free Banking Era: A Re-examination," Journal of Money, Credit and Banking 6 (May 1974), 141-168.

¹²Howard Kemble Stokes, "Public and Private Finance," chap. in State of Rhode Island and Providence Plantations at the End of the Century: A History, ed. Edward Field, vol. 3., Boston, The Mason Company, 1902, pp. 173-322.

balance sheets from time to time, more in the late forties (it began publication in 1846) and early fifties. In the late fifties it confined itself primarily to reporting the dividends of the banks in Boston, New York, and Philadelphia.

Finally, the Secretary of the Treasury annually reprinted the reports of the state banking authorities, so they are available in congressional executive documents. Most state banking authorities apparently did not require that dividends be reported, but a few did. In some cases it was necessary to go back to the original state documents, because the Secretary reprinted summary tables that were too aggregated.

In short, there is adequate information in these sources to put together an interesting portrait of the geographical dispersion of rates in the late ante-bellum period. These bits of information are by no means the maximum that could be obtained. By combing local newspapers, bank archives, and other sources, one could steadily enlarge the sample used here. But moving beyond the sources that I have relied upon appears to substantially raise the cost of acquiring additional data. This is the reason this effort should be viewed as an exploratory inquiry.

3.1 NEW ENGLAND

The New England banking system, the most stable and longest established, provides us with some of the best information on ante-bellum banks. There are three states (Maine, Rhode Island, and Massachusetts) that required their banks to report annually on a variety of asset and liability

categories and on dividends.¹³ Rates of return derived from this data are presented in Table 1. All of the data for Massachusetts and Maine have been interpolated to mid-year months using linear interpolations. Given our familiarity with annual series. The effect of this procedure is to blur turning points. The crisis of 1857, for example, does not show up dramatically in Table 1. Panel A. in Table 1 is simply the ratio of aggregate dividends to aggregate book value of capital. Panel B. adds retained earnings to the numerator and surplus to the denominator. As we would expect, a measure that incorporates retained earnings fluctuates more than the dividend rate, but on average the dividend rate draws about the same picture as the measure that incorporates retained earnings. Evidently, bank managers made some effort to level the flow of income to the shareholders. Panel C. reports a measure analogous to the measures of short-term rates reported for the post-bellum period: the ratio of net earnings to earning assets.

Panel D. makes use of an unusual feature of the Massachusetts and Rhode Island balance sheets, the separation of deposits into interest bearing and non-interest bearing, and the separation of earning assets into bonds and loans. The ratio computed here adds an estimate of the interest paid on deposits to total earnings, subtracts an estimate of interest on the bond portfolio of the banks, and then divides by loans (earning assets net of bonds). The idea is to make a closer approach to the net interest earned on short term loans in the local community. I assumed a fairly high rate of

¹³For Rhode Island I have relied on the data assembled by Howard Kemble Stokes. Stokes omitted some small categories from his balance sheets, and it might be possible by going back to the underlying state documents to improve on Stokes's handling of the data. But the potential gain did not seem to justify the work involved.

interest was paid (5 percent) on interest bearing deposits, and that 5 percent was earned on bonds. The bond rate could be improved somewhat by using one of the available series as a proxy. But it is unlikely that the change could materially alter the results. The important point here is that panel D., although it includes theoretical refinements that seem important intuitively, does not differ substantially from panel C. The shares of interest bearing deposits in total deposits, and of bonds in total earning assets, were too small to effect the basic return being earned on loans and discounts. Although we can not be sure that other states will behave in a similar way, we can nevertheless have some confidence that panel C., the variable generally available, can tell us something meaningful. If anything, we might expect that in newer regions the shares of interest earning deposits and of bonds in total earning assets would be even smaller than in New England, the former because it is a sign of savings, and the latter because it is a mark of financial conservatism. Both characteristics are more likely to be found in established regions. Maine did not report the split between interest bearing and non-interest bearing deposits, nor the breakdown of assets between loans and bonds, possibly because bonds and interest bearing deposits were too small to worry about.

I take the evidence in Table 1 to mean that the capital market within New England was, as we might expect, highly integrated in the late ante-bellum period with respect both to the allocation of bank capital, and short-term funds. This does not mean that rates were everywhere the same. There is some evidence in panel C., for example, that short-term rates for Rhode Island were consistently above those in Boston, but the gap is rather small, perhaps 100 basis points.

3.2 THE MID-ATLANTIC

New York had become the financial center of the nation by the 1850s. The estimates we derive here are based on a random sample of 12 New York City banks during the period 1847 to 1859.¹⁴ A sampling procedure was dictated by the extremely laborious process of interpolation needed to bring balance sheet reporting dates into line.¹⁵ Although this is a relatively small number of banks, it generally made up about one quarter of the total bank population. It seems unlikely from an inspection of the remainder of the data that including more banks would significantly alter the results.

I followed a similar procedure in computing the rates of return earned by Philadelphia banks. I drew a random sample of a dozen banks.¹⁶ This sample averaged more than half the population. It included by chance two banks set up during the period, and one that failed. The data were drawn from Banker's Magazine, the Congressional Documents, and for certain years from a more detailed state document, the annual Communication from the Auditor General Relative to Banks and Savings Institutions. The latter, in addition to providing dividends for certain years, provided more detailed balance sheets from which it was possible to make a better estimate of

¹⁴The Bank of Commerce, Bank of New York, Bank of the Republic, Bank of the State of New York, Broadway Bank, City Bank, Leather Manufacturers, Manhattan Company, Merchants Bank, Pacific Bank, People's Bank, and Tradesman Bank.

¹⁵The dividend payment dates also varied from bank to bank. But since dividends remained relatively stable it seemed reasonable to forego the extra work to bring these dates into line.

¹⁶The Bank of North America, Bank of Pennsylvania, City, Commercial, Consolidation, Farmers & Mechanic's, Girard, Kensington, Manufacturers and Mechanic's, Southwark, Tradesman's, and Western.

retained earnings than was possible in the standard sources.¹⁷ Nevertheless it is possible that in certain years the change of surplus, as I measure it, does not adequately reflect retained earnings.¹⁸

The striking finding when comparing New York City and Philadelphia, is that even though returns to equity appear to have been higher in Philadelphia, the proxies for short term loan rates were quite close together. This might be explained by a greater degree of monopoly power in Philadelphia; New York had a Free Banking Law while Philadelphia operated under a system of individual charters. Evidently, however, it was not borrowers who were exploited. One would, afterall, be willing to travel some distance to sign a note. Instead it may have been other players in the financial market such as depositors, or note holders who bore the brunt of exploitation.

3.3 THE SOUTH

In the late 1840's and early 1850's Banker's Magazine published dividends for the banks in Baltimore and Virginia. Table 3 shows the rates of return derived from this source. In Baltimore and Virginia both the rates of return to equity and the short term rates appear to have been in line with

¹⁷A great deal of additional data is provided in the reports of the individual banks. For example, the bond portfolio of each bank is given. A casual inspection suggests that Philadelphia banks typically held Pennsylvania bonds, U.S. bonds, or bonds issued by local railroads or canals. This impression supports the attribution of a low yield to holdings of "stock" (the term often used to refer to bonds in the ante-bellum period).

¹⁸I defined surplus for my purposes as the sum of Assets less Liabilities plus contingent funds, profit and loss, and the item listed as surplus. But when assets exceeded liabilities it could not be determined for certain whether this was due to the omission of retained earnings (the most likely case), other omitted items, or error.

each other but a bit lower than in New England or in New York City or Philadelphia. In the immediate post-bellum period Southern rates were relatively high compared with the Northeast. But there is no evidence of that here. Instead this part of the South appears to have been a capital rich region.

There is also excellent information on South Carolina for the late 1850s displayed in Table 4. The South Carolina banks exhibit the same pattern we are familiar with from New England and the Middle Atlantic states in these years. Although somewhat higher in 1854 and 1855, the dividend ratio and net earnings ratios were in the neighborhood of 7.5 percent and the dividends to earning assets ratio and the net earnings to earning assets ratios were about 40 or 50 percent below that at 4.25 to 4.5 percent. The net earnings to total capital ratio, as we would expect, displayed greater variability than the dividend to capital ratio. But it is clear that the crude measures contain similar information about long term trends to the more sophisticated measures.

In general, an investor in bank capital would find it hard to choose between Boston, New York, Philadelphia, Baltimore, or South Carolina in the late 1850s. The same, it would seem to be true, could be said of a borrower signing a short-term note. The same cannot be said, however, when we turn to the West.

3.4 THE WEST

Charles Clifford Huntington's classic history of banking in Ohio before

the Civil War reports earnings of Ohio banks in 1850, 1851, and 1853.¹⁹ I have used this information before in order to examine the effect of the introduction of free banking.²⁰ For present purposes, this is simply an unwelcome complicating factor, since we would like to observe the "normal" interest rate differential between Ohio and the East. Table 5 presents various ratios for the years 1850, 1851, and 1853 by class of bank (as explained in the note to the table).

The reworking of the data produces numbers that show less of an impact from free banking than my previous work. The first column (of estimates) does reveal the depression in the dividend rate for the independent and state banks between 1851 (when a number of free banks were set up) and 1853 that I pointed to previously.²¹ But when retained earnings are taken into account in column 2 the effect on the state banks disappears. And there is no discernible effect on the returns to earning assets. This is the same pattern we observed in our comparison of New York City and Philadelphia; the effects of competition show up in rates of return to bank capital rather than lending rates. The wide dispersion in rates of return to earning assets of the banks reflects their regulatory status. The requirement that independent and free

¹⁹Charles Clifford Huntington, "A History of Banking and Currency in Ohio Before the Civil War," Ohio Archaeological and Historical Publications (Columbus: Fred J. Heer, 1915); reprinted from the Ohio Archaeological and Historical Quarterly, XXIV (July 1915).

²⁰Hugh Rockoff, "The Free Banking Era: A Re-examination" Journal of Money, Credit and Banking, VI (May 1974), 141-167.

²¹The dividend rates shown here for the free banks in 1853 are somewhat higher than before. Previously I reported the average rate for 1853 as reported in Huntington. Here I report total dividends divided by mid-year capital. The difference reflects the rapid growth of capital within the year.

banks back up their notes with bond holdings evidently had a substantial impact on their rates of return, although intuitively the reduction in returns is more than one would expect from this source.

There are also rates available for the State Bank of Indiana. This was a system of semi-autonomous branches located throughout the state. It was a conservatively managed bank. The president of its last transformation, the Bank of the State of Indiana, was Hugh McCulloch who subsequently became the first Comptroller of the Currency and Secretary of the Treasury because of his reputation for financial sobriety. So its rates, although based on a state-wide institution, may not be typical of the West.

The bank was also subject to a usury ceiling of six percent. The weight to be given to this restriction is uncertain. Most economic historians, it is fair to say, tend to reject the role of usury restrictions because they assume that borrowers and lenders will find a way around them. But it should not be forgotten that a usury restriction is self-enforcing. A borrower who doesn't want to pay can interpose the defense of usury in court. No bureaucracy, in other words, is required to activate the law. It is known that in the West the favorite means of evading the usury law was by excessive charges for "exchange" on time bills of exchange. It was harder to evade the usury law on a promissory note, since there was no corresponding service charge that could be adjusted to circumvent the law. The State Bank of Indiana, according to William F. Harding, shifted from discounting of promissory notes and lent, by the late 1850s, predominantly by discounting bills of exchange.²² So tentatively, I assume that the usury ceiling was not

²²William F. Harding, "The State Bank of Indiana," Journal of Political Economy 3 (December 1895), 27, and the table following p. 114.

binding. An array of rates for this bank are given in Table 6. The last column is included because there were certain assets on the balance sheet which I could not positively identify. But the results are similar to the fourth column of estimates, which excludes these items and includes only bills discounted, stocks and other familiar items.

Two points are worth noticing. First, rates here are a bit higher than in the other regions we have examined, a point that will be discussed more fully in the following section. Second, any impact from the introduction of free banking in 1852 was rather limited. This suggests that monopoly power is only part of the explanation for any difference between rates in Indiana and the East. Rates in 1854 - 1856, it should be noted, reflect the winding up of the bank, and treat some long term gains as current income.

Finally, there are sufficient data in Banker's Magazine to compute realized earnings of three banks in Kentucky for a few years in the early 1850s. This results are displayed in Table 7. Like the State Bank of Indiana the Banks in Kentucky earned fairly high returns, compared with the East. Note also that there were a number of extra dividends paid in these years that I have omitted because they seem to be once and for all realizations of assets. If these were included the rates of return realized in Kentucky would have been still higher. The high rates in Kentucky may be attributed in part to monopoly elements in the banking system; Kentucky did not have a free banking law. The three banks reported here were the only ones in existence from 1833 to 1850. But there is probably also something of a frontier effect. Information on where and how to establish competitive institutions to take advantage of these high returns was probably costly to obtain. But if we allow some margin for the monopoly effect, then the rate of return on earning

assets in Kentucky probably did not differ by more than 100 basis points from returns in the eastern financial centers.

It would be useful to have a long series of rates from New Orleans, a major financial center. I have been able to locate rates, however, only for one year, 1858.²³ In that year the dividend to capital ratio was 9.84 percent and the dividend to earning asset ratio was 6.16 percent. It is possible that net earnings were lower than dividends. The gap between assets and liabilities in the balance sheets in De Bow's Review declined from +\$1,636 in September 1857 to - \$664,993 in August 1858.²⁴ Adjusting for this decline would make the net return on book capital 5.64 percent and the net return on earning assets 3.57 percent, rates in line with other financial centers. But the absence of complete balance sheets and a longer time series make it hard to draw firm conclusions.

The same source provides share prices for the New Orleans banks. In 1858 dividend-price ratios for 9 banks ranged from 4.37 percent to 9.65 percent and averaged 7.41. This would appear to be a good variable to compare with Fogel and Engerman's estimate that slave owners on average earned "10 percent on the market price of their bondsmen"²⁵ since both rates are relative to market prices. Slavery was probably riskier than investing in banks in New Orleans (which had a strong reputation for soundness), but this estimate, as well as the related rates for Baltimore and South Carolina, strongly

²³De Bow's Review, 18 (1858), 562.

²⁴George D. Green, Finance and Economic Development in the Old South: Louisiana Banking, 1804-1861 (Stanford: Stanford University Press, 1972), 204 shows a total for all of Louisiana, "other liabilities," that a note says includes capital accounts. This item declines from 2.21 million in December 1857 to .46 million in January 1859.

²⁵Fogel and Engerman, Time on the Cross, 70.

reinforce the conclusion that slavery was a very profitable investment when judged by rate of return.

It appears that a far different state of affairs prevailed in California, although the evidence is sketchy. But what there is suggests that rates were extraordinarily high.²⁶ According to Hubert H. Bancroft the interest rate "ruled at ten percent per month even after 1849, or even double that for short loans. In 1852 it declined to three and soon after to two and a half per cent per month, at which it stood for some time, while operations adjusted themselves more and more to eastern forms."²⁷ To some extent this state of affairs may have been due to legal restrictions. California's constitution had prohibited the state from chartering note-issuing banks, and subsequent legislation made clear that the prohibition on note issue applied to private banks as well. But Bancroft's emphasis on "the enterprise stirred by the fast-developing resources of a new country" may well be the right one. It evidently took a few years for the capital market to adjust to the rapid development of this region.

4. INTER-REGIONAL COMPARISONS

The state and city level studies above have shown that the ratio of net earnings to total earning assets conveys most of the available information relevant to judging net short rates, so here I will compare the different regions on the basis of this variable. Perhaps it is appropriate at this

²⁶ Sidney Homer records a number of private transactions in California at rates of 60 percent and more per year, and a loan on which San Francisco paid 24 percent per year. Sidney Homer, A History of Interest Rates (New Brunswick, New Jersey: Rutgers University Press, 1963), p. 323.

²⁷ Hubert Howe Bancroft, History of California, vol. vii (San Francisco: The History Company Publishers, 1890), pp. 161-162.

point to reiterate that these are highly synthetic figures. Numerous decisions had to be made about how to interpret missing observations or other anomalous features of the data, and numerous interpolations of individual observations had to be made in order to compute annual figures. The practical result is that these numbers may be misleading for the purpose of interpreting short-term cyclical movements. In particular, the Crisis of 1857 appears to be obscured by all of the manipulations. On the other hand, for longer term comparisons (two to three years) the data are more reliable. I should also point out that individual banks and banking systems used very different accounting methods, and were subject to widely varying rules and regulations. It would be improbable that these measures would show the same uniformity as measures computed from the post-bellum observations from the National Banks.

Table 8 shows the ratio of net earnings to earning assets in several parts of the country, circa 1850. To be sure, there are some differences. The State Bank of Indiana (and the Kentucky banks) appear slightly higher and Baltimore and Virginia banks slightly lower than New England.

But by what standard are we to judge these differences? A strong case can be made that if any region of the country constituted a unified capital market in the 1850s, it was New England. Banking was had a long history in this region by the 1850s. Banks in this region, moreover, were all subject to the Suffolk system of note redemption.²⁸ Banking regulations (including usury laws) were similar from state to state. Note, for example, the wide divergence in returns for different types of state systems in Ohio. These are

²⁸The Suffolk was a bank in Boston. By agreement of the Boston banks all out of city notes were turned over to the Suffolk for redemption. This arrangement had the effect of keeping New England notes at par.

a clue to regulatory differences, and have little to say about integration of the capital market. There was very little in the way of free banking in New England, but it has been argued that legislatures in this region were relatively free in granting charters.²⁹ Even the accounting frameworks within New England seem to have been similar. But such considerations are only part of the story. More important, New England was a long settled region with limited variation in its legal, political, and cultural institutions. Surely networks of businessmen and bankers existed - classmates at Harvard or Bowdoin - through which capital could move from one part of New England to another. The differences in interest rates among Maine, Rhode Island, and Massachusetts, were as low as the technology and varying risks and business conditions of the time would allow.

Thus, we can take the largest differences in New England as the basis for judging inter-regional differences. The larger those inter-regional differences are in comparison with the intra-regional differences the more probable it becomes that these were truly distinct markets. But on the whole the gaps outside New England, but within the settled regions of the country, do not appear large compared with the differences within New England. Over the years 1850 through 1854 Maine was lower than Rhode Island on average by 117 basis points, and Rhode Island was lower than the State Bank of Indiana by 52 basis points. So the amount we must attribute to the monopoly position of the State Bank of Indiana and to the uncertainty of economic projects in a

²⁹ See Richard Sylla, "Early American Banking: the Significance of the Corporate Form," Business and Economic History 14 (March 1985), 105 -123. Anna J. Schwartz, "The Beginning of Competitive Banking in Philadelphia, 1782 - 1809," Journal of Political Economy 55 (October 1947), 417 - 31, demonstrates that competition can take hold quickly, even in a system that requires a legislative charter for each new bank.

newly settled region, appears rather small compared with the differences within New England. In Baltimore rates appear a bit lower than some of the others, perhaps due to a weak loan market in Baltimore during these years. But compare, say, the gap between Baltimore and Indiana (209 basis points in 1848 -1851) with the gap between Boston and Massachusetts country banks over the same years (152 basis points). Again it would appear that rates earned in Baltimore did not differ a great deal more from those earned in Indiana over these years than did rates earned by city and country banks in Massachusetts.

Differences of this magnitude are observable in Davis's data among close regions in the immediate post-bellum period despite the uniformity imposed by the national banking system. In 1870, for example, net returns on earning assets for non-reserve city banks in the mid-Atlantic region differed by 100 basis points from the net returns in New England. At that time the region that might have been in a separate capital market (where the costs of acquiring information for many investors was too high to justify any investment activity) was the Pacific coast which differed by 300 to 400 basis points from the East. Even at the very end of Davis's period, 1914, when we have much more reason to expect a unified capital market with decreased costs of acquiring information, rate differentials of 100 basis points were not uncommon between regions.³⁰

In the rapidly growing markets of California it appears that rates were fabulously high. To some extent this difference, and perhaps part of the slightly higher rates in Indiana and Kentucky, can be explained by the heavy demand for capital in regions of new settlement and by the failure of firms, and sometimes whole industries, to possess the track record that made fine

³⁰Davis, "The Investment Market," 364-65.

calculations of risk possible.³¹

Table 9 shows the net earnings ratios in a slightly different group of locations for the period 1854 to 1859. Eighteen fiftynine can be considered fairly normal for the late ante-bellum period. In that year the return on earning assets in Maine differed from the return in South Carolina by only 25 basis points, when the difference between Maine and Rhode Island was 40 basis points. It would seem to follow that the South Carolina figures are well within the range that might be expected if an integrated capital market existed along the east coast. Similar, if less emphatic, comparisons can be made over longer time periods.

The result that emerges here is about as clear as it can be: Rates of return on earning assets in the years immediately preceding the Civil War along the eastern seaboard from Maine to South Carolina and in the established regions of the Middle West fell within the range that might have been expected in an integrated capital market, allowing only for small differences due to government regulations, short-term fluctuations in ex-post yields, and in the case of the Middle West the uncertainties of business life in a region still emerging from the frontier. Only in the far West were rates substantially higher, reflecting restrictive legislation, the strong demand for capital, and uncertainties inherent in new enterprises.

The rate of return to bank equity has received less attention in the post-bellum literature than proxies for the short-rate. But the return to equity has the distinct advantage that, unlike the proxies for the short-rate

³¹ Adam Smith would not have been surprised that interest rates were higher in the regions of new settlement, An Inquiry into the Nature and Causes of the Wealth of Nations, (New York: Random House, Inc., The Modern Library 1937 [1776]), pp. 92-93.

examined above, it was something that potential investors in banks actually examined. The dividend rate, which as the previous discussions indicate tells about the same story as more sophisticated measures, are given in Tables 10 and 11. There is clearly a pattern here of higher rates in the West (Ohio, Indiana, and Kentucky) than in the more established parts of the country, a reflection of monopoly elements and the uncertainties of investing in newer regions.

The bank dividend rates provide evidence of a regional pattern with rates lower in New England. But a regional pattern in returns to bank capital held in the United States long after regional integration in the short term market was presumably achieved. Regional profit rates were published by Keith Powlison in 1931.³² Powlison presented the ratio of net earnings to capital by region. Averages of his estimates for three broad periods are shown in Table 12. The table reveals the convergence of rates of return called for by the Davis-Sylla-James arguments, but it is not as apparent to the naked eye as one might expect. Perhaps the best case for convergence can be made if we compare the Middle Atlantic region that includes New York with the other regions. Most of the gaps narrow, especially when we compare 1870-1891 with 1891-1904. In 1870-1891, for example, rates in the South and Middle West exceed rates in the Middle Atlantic by almost 100 basis points. In 1891-1904, however, rates in the South exceed the Middle Atlantic by only 25 basis points, and rates in the Middle West are actually below those in the Middle Atlantic States.

But the main point here is that a wide dispersion of rates of return to has been seen as consistent with integration of the short-term market in the

³²Keith Powlison, Profits of the National Banks (Boston: R.G. Badger, 1931).

post-bellum period. The explanation may be that local bank monopolists are unable to exploit borrowers who can always turn to private individuals, and who in any case are willing to travel long distances for a slightly better rate. The locus of exploitation may fall on depositors and note-holders, who have fewer alternatives. In regions where bank failures are high depositors may choose to accept inferior service, or an inferior balance sheet, simply because a bank has a reputation for being able to weather coming storms. In this case it might be more appropriate to regard the extra return earned by the bank as a return to a form of capital, a reputation for soundness.³³

5. THE CIVIL WAR

There are two regions that are "outliers" in pictures of post-bellum interest rates: the South and the Pacific Coast. In both cases the explanation for the high rates prevailing in these regions in the immediate post-bellum years can be traced, at least in part, to the disruptions caused by the Civil War. The case of the South is obvious. The South suffered enormous losses of human, physical, and financial capital during the War. Its banking system was destroyed. It is not surprising that rates here were higher than in the North during the immediate post-bellum years. Perhaps the most surprising factor is the relatively long period of time it took the South to fall in line. The difficulties in re-establishing an effective banking system within the constraints imposed by the National Banking Act documented by Richard Sylla and John James appears to be the answer. The

³³See Rockoff, "Regional Interest Rates." In keeping with the monopoly arguments one could argue that local banks in rural areas were able to exploit depositors but not borrowers. Depositors need an on-going relationship with a bank, but a borrower might be willing to travel some distance to sign a note.

National Banking Act, according to Sylla, set a minimum capital requirement that was too high to support more than one bank (if any) in many rural towns. The tax on state bank notes passed shortly after the National Banking Act inhibited the growth of state banking as an alternative, at least until the use of deposit money was widely established. This set of restrictions was especially burdensome in the South which had to re-establish its banking system.

The less obvious case is the Pacific Coast. During the Civil War the United States was forced off the gold standard. In the East the Greenback dollar became the unit of account and gold, now useful mostly as foreign exchange or to pay customs duties, went to a premium which varied over time with market conditions. On the Pacific Coast, however, the reverse occurred. The gold dollar remained the unit of account and the greenback went to a discount. The United States consisted of two currency areas linked by a fluctuating exchange rate. This situation prevailed until 1879 when specie payments were resumed. For an eastern investor contemplating investment on the Pacific coast the expected change in the exchange rate, and the risk of fluctuations in that rate, became important factors to be taken into account.

Since the greenback was appreciating over most of this period (the gold price of greenbacks was rising) a potential investor in the West would have regarded the potential change in the exchange rate as a loss to be deducted from any gain from moving his funds west. The appropriate equilibrium condition from 1862 to 1879, to put the point differently, is

$$(1) i_p - e = i_e$$

where i_p is the rate of interest on the Pacific Coast,

ϵ is the expected percentage change in the gold price of the greenback, and

i_e is the rate of interest on the East Coast.

This is, of course, an oversimplification. It does not allow, for example, for the risk associated with fluctuations in the exchange rate. The gold price of greenbacks rose fairly steadily, but there were fluctuations, and the rate might have risen dramatically in any given year. Table 13 contains the data for assessing the role of greenback appreciation. It shows the interest rates in New York and the Pacific Coast, the differential, the appreciation of the greenback in terms of gold, and the net differential.

The appreciation of the greenback on average can explain a little less than half the differential during the period prior to resumption (compare the gross differential with the net differential), and the negative net differentials in some years suggest that exchange risk was also a factor capable of deterring interregional capital movements in this period.

In both the South and the Pacific Coast, to sum up, regional differentials in the immediate postwar period were distorted by the disruption caused by the Civil War. To that extent an analysis that begins in 1870 gives an exaggerated picture of the extent to which the market was naturally fragmented.

6. IMPLICATIONS FOR THE DEBATE OVER POST-BELLUM DIFFERENTIALS

George Stigler has argued that interest rate differentials must be treated with extreme caution. There is a tendency, according to Stigler, for economists to jump to the conclusion that there are "imperfections in the capital market" without giving serious thought to whether these imperfections

might really be cost differences.³⁴ In particular, the cost of acquiring information about lending risks might explain many existing differentials. Stigler criticized Davis for using declining inter-regional interest rate differentials as an indicator of how closely capital market came to being a "national" market.³⁵ Stigler's point was that the differentials might have been produced by information, or other costs. But although Davis did write of inter-regional "barriers" being overcome, the difference between he and Stigler is mostly semantic. Davis describes the source of the differentials as a "reluctance of capital to migrate." This ambiguous phrase, drawn from the writing of contemporaries; although it could suggest some sort of irrational segmentation of the market, is also consistent with costs of acquiring information. The point is that although Davis's language leads the reader, or some readers, to think in terms of a segmented capital market, his analysis leaves open the possibility of describing an integrated market in which the costs of acquiring information on investments in capital poor regions declined.

Our analysis reinforces the view that the differentials observed in the post-bellum period were due to information costs as well as legal restrictions on competition. Some ante-bellum systems were more competitive than others. The State Bank of Indiana, the Kentucky banks, and those in New Orleans, and Philadelphia all appear to have had some monopoly power. But the lack of borrowing rate differentials between New York and Philadelphia, and the failure of rates to change much in Indiana when competition was introduced suggest that it may have been the inherent uncertainty facing

³⁴George Stigler, "Imperfections in the Capital Market."

³⁵Ibid., 114.

lenders in regions of new settlement, rather than specific legal restrictions, that created slightly high rates in those areas.

7. SUMMARY AND CONCLUSIONS

The implication to be drawn from the bank lending rates assembled here is that there probably was, before the Civil War, an integrated market for bank capital covering New England, the South and the Middle West. By integrated we do not mean that rates were everywhere the same. Differentials could and did exist for a variety of reasons. The vision we wish to reject is one in which inter-regional differences were large, persistent, and hard to explain except on the basis of irrational fears and prejudices. The argument is based on the observation that rate of return differentials were relatively small among the developed regions. But relative to what? There are, naturally, a number of bases of comparison: post-bellum inter-regional differences, "normal" spreads among assets of different risk, and so on. But the comparison on which we put the most weight is with the intra-regional differentials observed in New England, a region where a strong a priori case can be made that the capital market was integrated in the late ante-bellum period.

The differences appear to have been larger between the developed regions and the regions of new settlement. This was exacerbated by legal restrictions on competition in banking in the developing regions. But the existence of this phenomenon under a range of institutional arrangements in both the ante-bellum and post-bellum periods suggests that there is something more fundamental at work here. In the developing regions, of course, the demand for capital was relatively high. But the costs of feeding capital into these uses

were also high. It took time for bankers to learn how to assess risk in these areas.

The rates of return earned by banks in the South, moreover, appear to have been relatively moderate, confirming the view that the ante-bellum southern capital market was not part of a separate world. And, incidentally, reconfirming the point that slavery was highly profitable when compared with alternatives.

But why does it matter that the capital market appears to have been integrated in the late ante-bellum period? Historians have long supported the view that changes in financial markets that took place during the Civil War, and in a particular the National Banking Act, were crucial to postwar economic development. Action by the Federal government, in other words, was needed to create a unified currency in order to permit rapid economic expansion. The evidence assembled here disputes that view. The National Banking Act, whatever its pluses and minuses, clearly was not needed to knit together regional capital markets. Capital would have found its way to profitable ventures even in the absence of a partial centralization of the bank regulatory environment.

This summary leads us to another question. When was the date at which the capital market first became integrated? Was there a capital market Big Bang like the one cosmologists seek? One answer is that we don't know. More work is needed to push our measures of interest rates back in time, and across a wider range of locations. The main purpose of this essay is to show the feasibility of such an effort. But it may be make better sense to assume tentatively that capital markets in the United States have always been integrated. The idea of separate centers of savings and investment emerging

on a wide plain of settlement and then being knit together is probably the wrong way to view the evolution of the capital market in the United States. Instead, the point is that settlement proceeded as capitalists made decisions to invest their funds in regions of new settlement. The frontier separated the regions in which investment decisions could be based on a long experience with similar investments from regions where rates of return, although potentially very high, were a matter of conjecture. The frontier, to use Frank Knight's terminology, was the line that separated risk from uncertainty.³⁶

³⁶A model of separate markets being gradually knit together, however, may make more sense for other countries. See, for example, Good, "Financial Integration in Late Nineteenth-Century Austria."

Table 1

New England Banks, 1846-1859

Year	Boston	Mass. Country	Maine	Rhode Island
A. Dividend Rate				
1846	6.88			
1847	7.16	6.58		6.50
1848	7.51	6.72		6.75
1849	7.83	6.67		6.80
1850	8.09	7.81	7.60	7.10
1851	7.95	7.82	7.69	7.00
1852	5.13	7.70	6.46	7.25
1853	7.93	7.05	6.61	7.00
1854	6.94	8.17	7.58	7.10
1855	7.01	7.66	8.32	7.10
1856	7.61	7.29	7.47	7.40
1857	7.24	6.48	7.17	NA
1858	7.28	6.96	6.92	NA
1859	7.36	7.30	6.83	6.71
B. Net Earnings to Total Capital				
1846	10.37			
1847	5.63	7.51		6.94
1848	6.08	5.56		6.78
1849	11.69	5.66		6.66
1850	7.88	10.91	7.36	7.26
1851	7.60	7.94	8.45	7.24
1852	4.53	7.64	7.03	7.52
1853	9.48	6.81	9.31	7.97
1854	5.94	9.60	8.84	7.47
1855	4.11	7.98	7.82	7.31
1856	7.35	4.98	6.71	8.03
1857	6.52	6.97	6.43	NA
1858	6.58	6.37	6.15	NA
1859	7.02	6.92	6.88	6.22

C. Net Earnings to Earning Assets

1846	6.83			
1847	3.48	4.80		5.09
1848	3.99	3.49		5.12
1849	8.12	3.56		5.37
1850	5.30	6.89	4.29	6.01
1851	4.94	5.00	4.94	5.86
1852	2.87	4.78	3.97	5.84
1853	6.20	4.11	5.20	6.08
1854	4.07	5.79	5.24	5.72
1855	2.80	4.97	4.96	5.43
1856	4.90	3.05	4.38	5.81
1857	4.73	4.55	4.43	NA
1858	4.30	4.45	4.29	NA
1859	4.68	4.62	4.50	4.90

D. Net Earnings Plus Deposit Interest to Loans

1846	6.94			
1847	3.57	4.83	NA	5.16
1848	4.06	3.52	NA	5.17
1849	8.16	3.61	NA	5.44
1850	5.34	6.93	NA	6.11
1851	4.97	5.03	NA	5.98
1852	2.90	4.81	NA	5.99
1853	6.23	4.13	NA	6.22
1854	4.10	5.81	NA	5.81
1855	2.86	4.99	NA	5.52
1856	4.99	3.08	NA	5.94
1857	4.83	4.58	NA	NA
1858	4.38	4.48	NA	NA
1859	4.80	4.66	NA	5.02

Sources: Boston and Massachusetts Country and Maine; Annual Reports of the Secretary of the Treasury on the Banks. Rhode Island; Stokes, "Public and Private Finance," 320-21.

Table 2

New York City and Philadelphia, 1847-1859

Year	Net Earnings to Total Capital		Net Earnings to Total Earning Assets	
	NYC	Philadelphia	NYC	Philadelphia
1847	9.04		5.65	
1848	8.26		5.41	
1849	7.82		4.92	
1850	7.93	9.15	5.81	4.01
1851	8.91	14.66	5.59	7.85
1852	7.72	2.94	4.28	1.51
1853	7.23	10.36	4.05	4.97
1854	8.84	9.19	4.89	4.75
1855	8.04	9.49	4.20	4.75
1856	8.27	8.25	4.40	4.10
1857	7.06	6.24	3.99	3.24
1858	6.47	10.43	3.67	5.57
1859	7.43	6.09	4.18	3.26

Sources: New York; Dividends (1847-1851) Hunt's Merchant's Magazine, vol.23, 89, vol. 27, 92 (1852-1859), Banker's Magazine, vol. 14 (old series), 556, vol. 15 (old series), 163, 250. Balance Sheets: Annual Reports of the Secretary of the Treasury on the Banks. Philadelphia; Dividends: 1850-1855, Banker's Magazine, vol.10, 978; 1856-1859, Communications of the Auditor General. Balance Sheets: 1849, House Document 68, 226-227; 1850, House Document 122, 196 - 201; 1851, Banker's Magazine, vol. 6, 932-33; 1852, Communication from the Auditor General Relative to Banks and Savings Institutions (Jan. 1853), 128 - 139; 1853, Communication (Jan., 1854), 164 - 175; 1854, Communication (Jan., 1855), 174 - 185; 1855, Communication (Jan., 1856), 190 - 201; 1856, Communication (Jan., 1857), 192 - 203; 1857, Communication (Jan., 1858), 202 - 213; 1858, Communication (Jan., 1859), 324 - 337; 1859, House Document 49, 134 - 148.

Table 3

Baltimore and Virginia, Circa 1850

Year	Dividend Rate	Net Earnings to Total Capital	Dividends to Earning Assets	Net Earnings to Earning Assets
A. Baltimore				
1847	6.62	5.62	4.15	3.85
1848	6.67	6.56	4.02	4.32
1849	7.08	6.90	4.22	4.51
1850	8.37	6.09	4.87	3.86
1851	8.07	5.09	4.54	3.47
B. Bank of Virginia and Branches				
1851	8.00	7.44	4.09	4.26
1852	8.00	6.93	4.05	3.91
C. Farmers Bank of Virginia and Branches				
1851	8.00	7.29	3.89	4.08
1852	8.00	7.11	3.70	3.78

Sources: Baltimore; Dividends: (1849-1851) Banker's Magazine, vol. 6, 749; (1852) vol. 7, p. 166. Balance Sheets: Annual Reports of the Secretary of the Treasury on the Banks. Virginia; Banker's Magazine, vol. 6, 167; vol. 7, 166, 653; vol. 8, 380.

Table 4

South Carolina, 1854-1860

Year	Dividend Rate	Net Earnings to Total Capital	Dividends to Total Earning Assets	Net Earnings to Total Earning Assets
1854	8.26	9.47	5.30	6.64
1855	7.69	8.45	5.21	6.38
1856	7.61	6.82	4.30	4.30
1857	7.85	7.55	4.27	4.57
1858	7.44	7.74	4.18	4.89
1859	7.34	7.40	3.76	4.35
1860	7.92	6.70	4.38	4.22

Sources: Annual Reports of the Secretary of the Treasury
on the Banks.

Table 5

The Banks of Ohio, 1850-1853

Year	Type of Bank	Dividend Rate	Net Earnings to Total Capital	Net Earnings to Earning Assets	Dividends to Earning Assets
1850	Independent	15.68	6.23	1.47	3.31
"	State	14.54	12.80	5.43	5.80
"	Old	11.78	11.37	7.00	5.07
1851	Independent	14.22	15.40	3.35	2.96
"	State	15.34	14.78	5.84	5.73
"	Old	12.53	9.78	5.00	5.55
1853	Independent	13.20	13.60	3.19	2.84
"	State	13.59	14.90	6.13	5.19
"	Old	NA	NA	NA	NA
"	Free	11.75	11.75	3.77	3.52

Note: The old banks were chartered by the state government and subject only to the limitations laid down in their charters. The independent banks issued a bond secured note issue but were chartered individually by the state legislature. The state banks were private banks, but part of a statewide mutual insurance system. The free banks issued a bond secured note issue, but entry was automatic if certain basic conditions could be met.

Source: Huntington, "Banking in Ohio," dividends, 212-213, 293-94; balance sheets, 277-79.

Table 6
The State Bank of Indiana, 1845-1856

Year	Dividend Rate	Net Earnings to Total Capital	Dividends to Earning Assets ^a	Net Earnings to Earning Assets ^a	Net Earnings to adjusted Assets
1845	7.87	7.80	4.36	5.07	4.87
1846	8.12	8.37	5.03	5.05	4.81
1847	8.34	8.49	4.38	5.39	5.17
1848	9.53	10.60	4.92	6.77	6.29
1849	9.80	10.73	4.89	6.82	6.41
1850	10.00	12.71	4.81	8.11	7.67
1851	9.35	8.77	4.27	5.50	5.14
1852	9.35	10.09	4.24	6.46	5.97
1853	9.73	9.03	4.22	5.67	5.53
1854	12.00	12.14	5.40	8.11	7.81
1855	15.77	13.81	7.28	9.85	9.52
1856	18.42	12.75	7.98	8.72	8.15

^a A narrow definition of earning assets that includes bills of exchange, notes and discounts and bonds.

Source: William F. Harding, "The State Bank of Indiana," Journal of Political Economy 3 (December 1895), 23 (dividends), Table following p. 114 (balance sheets).

Table 7
Three Banks in Kentucky, 1850-1854

Year	Dividend Rate	Net Earnings to Total Capital	Dividends to Total Earning Assets	Net Earnings to Total Earning Assets
Bank of Kentucky and Branches				
1850	9.50 ^a	11.73	6.48	8.35
1851	9.00	8.53	6.59	6.78
1852	9.50 ^b	12.42	6.63	9.10
1853	NA	NA	NA	NA
1854	11.50	9.87	6.80	6.38
Bank of Louisville and Branches				
1851	9.00 ^c	7.22	5.45	5.23
1852	9.00 ^c	7.60	5.35	5.26
1853	NA	NA	NA	NA
1854	11.50	10.36	6.05	6.50
Northern Bank of Kentucky and Branch				
1849	9.00	8.88	5.36	6.17
1850	9.00	7.93	5.01	5.22
1851	10.00	8.71	5.63	5.77
1852	10.00	9.37	5.24	5.84
1853	NA	NA	NA	NA
1854	10.00	8.88	5.98	6.40

^aAn extra dividend of 5 percent was also made out of the assets of the Schuykill bank.

^bAn extra dividend of 4.5 percent was also made out of the assets of the Schuykill bank.

^cAn extra dividend of 2.5 percent was also paid.

^dAn extra dividend of 3 percent was also paid.

Sources: Banker's Magazine, vol. 5, 249, 993; vol. 6, 167, 235, 670; vol. 7, 166, 239; vol. 9, 659, 795-96.

Table 8
Net Returns on Earning Assets, Circa 1850

Year	1847	1848	1849	1850	1851	1852	1853
Maine	NA	NA	NA	4.29	4.94	3.97	5.20
Rhode Island	5.09	5.12	5.37	6.01	5.86	5.84	6.08
Boston	3.48	3.99	8.12	5.30	4.94	2.87	6.20
Mass. Country	4.80	3.49	3.56	6.89	5.00	4.78	4.11
New York City	5.65	5.41	4.92	5.81	5.59	4.28	4.05
Philadelphia	NA	NA	NA	4.01	7.85	1.51	4.97
Baltimore	3.85	4.32	4.51	3.86	3.47	NA	NA
Ohio (1) ^a	NA	NA	NA	5.43	5.84	NA	6.13
Ohio (2) ^b	NA	NA	NA	1.47	3.35	NA	3.19
Ohio (3) ^c	NA	NA	NA	NA	NA	NA	3.52
Indiana	5.39	6.77	6.82	8.11	5.50	6.46	5.67
Kentucky	NA	NA	6.17	6.79	5.93	6.73	NA
Virginia	NA	NA	NA	NA	4.17	3.85	NA
California !	NA	NA	NA	213.84	213.84	55.80	34.49

^aState Banks

^bIndependent Banks

^cFree Banks

Sources: Section 3.

Table 9

Net Returns on Earning Assets, 1854-59

	Maine	RI	Boston	MA	NYC	Phil.	SC
1854	5.24	5.72	4.07	5.79	4.89	4.75	6.64
1855	4.96	5.43	2.80	4.97	4.20	4.75	6.38
1856	4.38	5.81	4.90	3.05	4.40	4.10	4.30
1857	4.43	NA	4.73	4.55	3.99	3.24	4.57
1858	4.29	NA	4.30	4.45	3.67	5.57	4.89
1859	4.50	4.90	4.68	4.62	4.18	3.26	4.35

Sources: Section 3.

Table 10
Dividend Rates, Circa 1850

Year	1847	1848	1849	1850	1851	1852	1853
Maine				7.60	7.69	6.46	6.61
Rhode Island	6.50	6.75	6.80	7.10	7.00	7.25	7.10
Boston	7.16	7.51	7.83	8.09	7.95	5.13	7.93
Mass. Country	6.58	6.72	6.67	7.81	7.82	7.70	7.05
New York City	8.12	7.42	6.49	7.96	8.43	8.61	8.40
Philadelphia	NA	NA	NA	11.02	9.70	10.04	10.85
Baltimore	6.65	6.68	6.64	7.34	7.59	NA	NA
Ohio (1) ^a	NA	NA	NA	14.54	15.34	NA	13.59
Ohio (2) ^b	NA	NA	NA	15.68	14.22	NA	13.20
Ohio (3) ^c	NA	NA	NA	NA	NA	NA	11.53
Indiana	8.34	9.53	9.80	10.00	9.35	9.35	9.58
Kentucky	NA	NA	9.00	9.25	9.33	9.50	NA
Virginia	NA	NA	NA	NA	8.00	8.00	NA

^aState Banks

^bIndependent Banks

^cFree Banks

Sources: Section 3.

Table 11

Dividend Rates, 1854-59

Year	Maine	RI	Boston	MA	NYC	Phil.	SC
1854	7.58	7.10	6.94	8.17	8.57	11.08	6.64
1855	8.32	7.10	7.01	7.66	8.66	10.32	6.38
1856	7.47	7.40	7.61	7.29	7.99	9.64	4.30
1857	7.17	NA	7.24	6.48	7.81	7.77	4.57
1858	6.92	NA	7.28	6.96	7.65	6.66	4.89
1859	6.83	6.71	7.36	7.30	7.86	6.98	4.35

Sources: Section 3.

Table 12

Post-bellum Rates of Return to Bank Capital

Region	1870-1891	1891-1904	1904-1914
New England	6.99	5.32	7.26
Middle Atlantic	8.09	8.25	8.88
South	9.90	8.48	10.50
Middle West	9.94	7.76	9.21
West	13.63	8.12	13.55
Pacific	13.78	8.64	11.64

Note: The regions are defined as follows New England: Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and Rhode Island. Middle Atlantic: New York, New Jersey, Pennsylvania, Delaware, and the District of Columbia. South: Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Arkansas, Kentucky, and Tennessee. Middle West: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, and Missouri. West: North Dakota, South Dakota, Nebraska, Kansas, Wyoming, Colorado, New Mexico, Oklahoma and the Indian Territory. Pacific: Washington, Oregon, California, Idaho, Utah, Nevada, and Arizona.

Source: Hugh Rockoff, "Regional Interest Rates and Bank Failures, 1870-1914," Explorations in Economic History 14 (Winter 1977), 92; based on K. Powlison, Profits of the National Banks (Boston: R.G. Badger, 1931), 105-6.

Table 13

Rates on the Pacific Coast and Appreciation of the Greenback

Year	New York City	Pacific Coast	Gross Diff.	Appreciation of Greenback	Net Diff.
1869	6.32	12.52	6.20	1.80	4.40
1870	5.78	8.81	3.03	10.90	-7.87
1871	5.36	18.62	13.26	8.99	4.27
1872	5.33	15.24	9.91	.62	9.29
1873	5.50	7.40	1.90	-2.83	4.28
1874	5.41	9.17	3.76	2.38	1.38
1875	4.91	10.25	5.34	-0.62	5.96
1876	3.87	8.36	4.49	-1.15	5.64
1877	3.29	8.55	5.26	5.50	-0.24
1878	3.03	5.92	2.89	5.13	-2.24
1879	2.84	7.48	4.64	2.47	2.17
1880	3.51	6.90	3.39	.00	3.39
1881	3.70	8.53	4.83	.00	4.83
1882	3.37	6.84	3.47	.00	3.47

Sources: Interest rates; Davis, Lance, "The Investment Market, 1870-1914: Evolution of a National Market" Journal of Economic History, 25 (Sept. 1965), p. 365, columns I (1), VI (1). Gold price of the Greenback; Kindahl, James K., "Economic Factors in Specie Resumption" in The Reinterpretation of American Economic History, eds. Robert W. Fogel and Stanley L. Engerman (New York: Harper & Row, 1971), p. 472, column (4).