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Author(s): Kenneth Ng
Source: *The Journal of Economic History*, Vol. 48, No. 4 (Dec., 1988), pp. 877-889
Published by: Cambridge University Press on behalf of the Economic History Association
Stable URL: http://www.jstor.org/stable/2121621

Free Banking Laws and Barriers to Entry in Banking, 1838–1860

KENNETH NG

The thesis that free banking laws lowered barriers to entry in the U.S. banking industry is tested by examining entry of firms and output of banking services before and after the institution of free banking. The output of banking services and the number of banks remained the same or declined after the institution of free banking, in all states with viable free banking laws except New York. In light of this evidence, the belief that free banking in the antebellum United States increased competition and efficiency of the banking industry by lowering barriers to entry must be reconsidered.

The efficiency effects of free entry in the banking industry have been argued since free banking was first proposed in the early nineteenth century, and the debate continues today in discussions of financial industry deregulation. Previous studies have examined the effect of free entry into banking on failures and panics, the money supply, and financial intermediation. Much of the empirical evidence comes from antebellum experiments in free banking because only then was entry into banking relatively unrestricted. The works of Hugh Rockoff, Arthur Rolnick and Warren Weber, among others have overturned many previously held beliefs about wildcat banking and failure rates under free banking laws.[1] These authors have shown that free banking laws did not lead to systematic episodes of wildcat banking or bank panics, but free banks may have experienced a higher probability of failure than conventionally chartered banks.

Free entry into an industry is a sufficient condition for economic efficiency. If free banking laws did not induce wildcat banking and

The Journal of Economic History, Vol. XLVIII, No. 4 (Dec. 1988). ISSN 0022-0507.

The author is Lecturer in Economics, School of Business and Economics, California State University at Northridge, Northridge, CA 91330.

I would like to thank William Brown, Stanley Engerman, Richard Sylla, Hugh Rockoff, and James Gikas for comments.

[1] See Hugh Rockoff, "Varieties of Banking and Regional Economic Development in the United States, 1840–60," this JOURNAL, 35 (Mar. 1975), pp. 161–62; *The Free Banking Era: A Re-Examination* (New York, 1975); "New Evidence on Free Banking in the United States," *American Economic Review*, 75 (Sept. 1985), pp. 886–89; Arthur J. Rolnick and Warren E. Weber, "New Evidence on the Free Banking Era," *American Economic Review*, 73 (Dec. 1983), pp. 1080–91; "The Causes of Free Bank Failures: A Detailed Examination," *Journal of Monetary Economics*, 14 (Nov. 1984), pp. 267–91; and "A New Explanation for Free Bank Failures," Federal Reserve Bank of Minneapolis, Department Staff Report 79 (1982); James Kahn, "Another Look at Free Banking in the United States," *American Economic Review*, 75 (Sept. 1985), pp. 881–85; L. Helderman, *National and State Banks* (Boston 1931), pp. 18–26; and Bray Hammond, *Bank and Politics in America from the Revolution to the Civil War* (Princeton, 1957), chap. 8.

panics, the overall efficiency effects of free banking must turn on the effect of free entry on industry structure and performance. Previous authors, using a variety of evidence, have concluded that free banking laws lowered barriers to entry and must, therefore, have led to greater competition in the supply of banking services and a significant increase in social surplus. I examine here the economic reasoning and empirical evidence supporting this hypothesis. A simple state-by-state test of the thesis that free banking lowered barriers to entry rejects the notion that there was a causal connection between free banking laws and barriers to entry or industry structure.

I. HISTORIOGRAPHY OF LOWER BARRIERS TO ENTRY

Two characteristics differentiated free banking laws from others providing for the incorporation of banks. Free banking laws contained a bond security provision and did not place a limit on the number of banks that could be chartered under the law. The bond security provision provided for approved bonds to be deposited with the state on a dollar-for-dollar basis as a condition for the issuance of banknotes, the major source of funds for banks during the period. If a bank were to fail, the state would sell the bonds and use the proceeds to reimburse noteholders. Free banking laws also allowed any number of banks to be chartered as long as each bank met the requirements of the law. These provisions were in marked contrast to previous methods of creating and allocating bank charters. Besides the unsuccessful attempt to provide deposit insurance through the safety-fund system in New York, banks not incorporated under free banking laws required a special act of incorporation to be passed by the legislature, and, in general, no provision was made for the reimbursement of banknote holders in the event of failure except the normal recourse of creditors in a general bankruptcy. The well-defined conditions for chartering a free bank and the absence of a limit on the number of charters has led previous researchers to argue that barriers to entry existed prior to the advent of free banking and that free banking laws significantly lowered those barriers leading to a more competitive industry structure.

This theory has been supported with three types of evidence. First, Rolnick and Weber and other financial historians infer the effects of free banking laws from statements of market participants.[2] Newspaper accounts, legislative documents, and personal papers show bank presidents, stockholders, and directors were opposed to free banking laws, presumably because the laws would reduce entry barriers, thus, eliminating the monopoly rents earned from owning a bank charter. This type

[2] Rolnick and Weber, "New Evidence on Free Banking in the United States," p. 1082; Helderman, *National and State Banks*, pp. 18–26; and Hammond, *Bank and Politics in America*, chap. 8.

of argument, in the absence of more robust supporting data, is unconvincing because it does not reveal that actual barriers to entry existed and were affected by free banking laws. Even in unconstrained markets, existing competitors will not generally welcome potential entrants.

The second type of evidence, used by Richard Sylla, examines the link between growth rates of industry assets and the passage of free banking laws.[3] Sylla observes that in the 1850s banking industry assets grew substantially. By 1863, most states had removed prohibitions on banking and substituted free banking laws. Other states without prohibitions on the issuance of bank charters also instituted free banking laws in response to the perceived political corruption involved in the legislative charter system. Using the rough correspondence between the widespread institution of free banking and industry growth in the 1850s as evidence, Sylla concludes there were economic rents to owning a bank charter prior to the passage of free banking laws, free banking laws lowered barriers to entry promoting competition in the banking industry, and greater competition led to an expansion of industry output as shown by the substantial increase in total banking assets and a reduction in banking profits.

But free banking laws were not passed only in the 1850s; the first was passed in 1838. Laws were passed periodically from 1838 to the advent of the National Bank System during the Civil War. An increase in the growth rate of industry assets in the 1850s does not correspond precisely to the advent of free banking. By looking only at the growth rate at the national level, Sylla cannot determine whether it was growth in free banking states which caused the increase in total industry assets or whether the increase was caused by growth in states without free banking. Further, if assets in free banking states grew, does the timing of the change in growth of assets support the lower entry theory? The correlation between increasing national banking assets and the passage of the free banking laws also fails to prove that the laws, not other forces, caused the growth in industry assets. Factors unrelated to free banking such as population, growth in national income, increases in the stock of specie, and technological change no doubt contributed to the growth of national banking assets. Increasing growth of assets following passage of free banking laws is a necessary but not sufficient condition for the hypothesis examined here to hold.[4]

[3] See Richard Sylla, *The American Capital Market, 1846–1914: A Study of the Effects of Public Policy on Economic Development* (New York 1975); and, also, Benjamin Klebaner, *Commercial Banking in the United States* (Hinsdale, 1974), p. 9 for another exposition of this view.

[4] The evidence does not address the existence, significance, or strength of monopoly power before and after passage of free banking laws. If assets grew after passage of a free banking law and lower entry barriers were the cause, the correlation between higher growth rates and institution of free banking laws gives no precise information about the magnitude of the change in entry barriers

Three measures of bank profits, the ratio (expressed as a percentage) of dividends to nominal capital, dividends as a fraction of net worth, and the ratio of dividends to the market price of bank stock, are used by Rockoff to reveal banking monopolies.[5] If banks in different states earned different rates of return, entry restrictions may have allowed a banking monopoly in states with higher rates of return. Limited surviving information on dividends restricts the profit computation to New York, Boston, and Philadelphia from 1849 to 1859 and Ohio from 1850 to 1853. Because no banks were chartered under the free banking laws in Massachusetts and Pennsylvania, calculating bank profits in Boston and Philadelphia are of little value. Because the New York free bank law passed in 1838 and Rockoff's profit figures for New York do not begin until 1849, they tell little about the effect of the free banking law on monopoly power. The Ohio figures, which show profits declining significantly following the institution of free banking, are the only evidence supporting the thesis that free banking lowered barriers to entry.[6]

Rockoff's profit measures have problems which further discredit the evidence. The connection between dividends and profits is tenuous. There are many ways a profitable bank can distribute profits to shareholders. Profits can be given directly to shareholders as dividend payments, retained by the bank as cash, or used to finance other activities which yield a stream of income. Only profits distributed as dividends are included in Rockoff's profit figures. Rockoff computes the rate of return banks earn as a percentage of nominal capital, but nominal capital may not accurately measure the value of capital used in running a bank. Nominal capital represents the face value of stock when the bank was established and is identical to the amount on the liability side of a bank's balance sheet in the capital account. In many cases, the face value of stock, which was set by legislation authorizing the bank's charter, was not the price at which the stock was sold to investors. It was not unusual for a bank to accompany the sale of stock with a loan to the purchaser at below market rates or allow payment for the stock to be made in installments occurring over extended periods of time. These measures effectively discounted the price of stock below its face value and deflate Rockoff's measure of bank profitability. If laws varied

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or monopoly power due to the free banking law. If assets did not grow after institution of free banking, monopoly power in the banking industry did not change. In either case, the test provides no information about the existence of rents earned by firms in the industry.

[5] See Hugh Rockoff, "The Free Banking Era: A Reexamination," *Journal of Money, Credit, and Banking*, 6 (May 1974), pp. 157–63.

[6] Rockoff presents his evidence as suggestive and does not attempt to draw a general conclusion about free banking and barriers to entry from the Ohio free banking experience. Rockoff also notes that different levels of risk in bank portfolios, not monopoly, may have caused a divergence in profits. "The Free Banking Era," p. 158. More important, his paper is concerned with the existence of monopoly, not the effect of free banking laws.

across states, cross-sectional comparisons can be misleading. Measuring profits in an economically more meaningful manner, stock price appreciation plus dividends as a percentage of stock price, is precluded by the lack of surviving data. If banks earned higher than normal profits due to entry barriers, the purchase of bank stock would still offer only a normal rate of return. Potential stockholders, aware that banks earned a higher than normal rate of return, would bid up the price of bank stock until the purchase of stock at the market price yields only a normal rate of return. If bank stock were traded freely in a market, the rate of return adjusted for risk must be equal to the other assets with the same risk characteristics. The ratio of dividends to the market price of bank stock, rather than revealing bank profitability as Rockoff suggests, provides information only about the risk characteristics of bank stock relative to other financial assets.

II. AN ALTERNATIVE TEST

A comparison of state growth in total assets to total asset growth for the industry can offer a simple test of the lower barriers to entry theory. A competitive industry produces greater output and sells it at a lower price than an industry with a monopolistic or oligopolistic structure. The theory that free banking lowers barriers to entry predicts that the state-level output of banks grew immediately following institution of free banking. If output did not increase after institution of free banking, the lower barriers to entry theory can be rejected. Rejection of the lower barriers to entry theory leaves the existence of entry barriers an open question. If there were no unusual growth in output following the passage of free banking laws, either significant entry barriers existed but were unaffected by the free banking law, entry in the industry was already unconstrained, or existing firms were acting competitively. The test cannot differentiate among the alternative hypotheses.

When measuring increases in output several issues must be addressed. What is the baseline against which growth in output is measured? Besides entry restrictions, many factors, such as national income and population growth, structural changes, and increases in the stock of specie, affected the size of the banking industry. If the demand and supply curves for banking services shifted from year to year, a profit-maximizing monopolist or cartel would change output each year. Simply examining the sign on the growth rate of banking output would not be meaningful. The comparison must be between growth in states exposed to changes in industry structure and growth in states that were not. To eliminate region-specific growth factors, the growth of banking assets in free bank states is compared with the growth of industry assets at the national and regional levels. The second issue concerns the appropriate measure of industry output. Banks provided a basket of

services. By accepting deposits and issuing currency on a fractional reserve basis, they provide a medium of exchange and a store of value. By making loans, they act as an intermediary between savers and borrowers. To measure changes in output, total state banking assets are used as a rough composite measure of industry output.

Tables 1 and 2 show the relative growth rate of total assets in free banking states. Eighteen states passed free banking laws, but in eight of them no free banks were chartered. This leaves ten states with viable free banking systems. In three of the ten states with viable free banking laws, Illinois, Minnesota, and Wisconsin, there are insufficient data to compute the requisite growth rates. However, the seven states for which there are data represent 90 percent of the bank assets in states with viable free banking laws. The test is therefore applied to 90 percent of all bank assets in states in which free banking was practiced.

Applying the growth rate test to the seven states for which there are sufficient data yields mixed results. At the national level, total assets grew 1 percent below the national growth rate prior to the passage of free banking laws and 1 percent above the national growth rate in the five years after the institution of a viable free banking law. At the regional level, total assets of states with viable free banking laws grew 2 percent above the regional growth rate before the passage of free banking laws and the same as the regional growth rate after free banking was instituted. Looking at the individual state growth rates, a more marked pattern emerges. In two out of seven states with viable free banking laws, Michigan and Ohio, there is a decrease in asset growth when compared with the growth rate of national bank assets. In three more states, Connecticut, Louisiana, and New Jersey, the relative growth of assets before and after free banking is within a few percentage points. In one state, Indiana, there is a slight increase in the growth of assets and, in one other state, New York, relative asset growth increased markedly after the institution of free banking.

Greater insight into the effect of free banking laws can be gained by examining the number of banks chartered under each free bank law.[7] States can be divided into three categories based upon changes in the number of banks following the institution of free banking.

The number of banks in Louisiana and Michigan after the institution of free banking remained the same or decreased. Three years prior to the institution of free banking in Louisiana, there were 41 banks. By 1855, two years after the institution of free banking, there were only 19 banks. Free banking in Louisiana was followed by a decrease in the number of banks. In 1857, there were 4 banks chartered in Michigan. Five years after the institution of free banking, Michigan still had only

[7] Data on the number of banks chartered under free bank laws are from John Jay Knox, *A History of Banking in the United States* (New York, 1969); and Rockoff, *The Free Banking Era*.

TABLE 1
STATE MINUS NATIONAL GROWTH RATES OF BANK ASSETS

State	Year Free Banking Instituted	$n-3$	$n-2$	$n-1$	n	$n+1$	$n+2$	$n+3$	$n+4$	$n+5$	Three Years before Free Banking	Five Years After Free Banking	Share of Assets
Connecticut	1852	−0.01	−0.02	0.03	0.35	−0.04	−0.17	−0.07	0.08	−0.05	−0.00	−0.05 (0.02)	0.037
Illinois	1851	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.15	n.a.	n.a.	n.a.	n.a.	0.016
Indiana	1852	−0.07	−0.03	−0.12	0.26	−0.15	0.26	0.45	−0.61	−0.18	−0.07	−0.04 (0.01)	0.012
Louisiana	1853	−0.08	−0.08	0.09	−0.20	−0.09	0.05	0.03	−0.08	0.08	−0.02	−0.00 (−0.04)	0.063
Michigan	1857	0.15	−0.19	−0.09	−0.24	−0.35	−0.22	−0.12	−0.41	n.a.	−0.04	−0.28 (−0.27)	0.001
Minnesota	1858	n.a.	n.a.	n.a.	n.a.	n.a.	0.87	0.05	n.a.	n.a.	n.a.	n.a.	0.000
New Jersey	1850	−0.03	−0.06	−0.01	−0.03	0.25	−0.10	−0.20	0.07	0.01	−0.03	0.01 (0.00)	0.021
New York	1838	n.a.	−0.14	−0.15	−0.16	0.11	−0.22	0.17	0.25	0.08	−0.14	0.08 (0.04)	0.284
Ohio	1851	0.36	0.06	0.04	−0.06	0.22	−0.23	−0.38	−0.13	0.02	0.15	−0.10 (−0.09)	0.019
Wisconsin	1852	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.57	0.41	0.15	n.a.	n.a.	0.016
All free banking states		0.05	−0.07	−0.03	−0.01	−0.01	0.03	0.09	−0.07	0.02	−0.01	0.01	0.490

Notes: Share of assets is computed as the state's share of total U.S. bank assets in 1850. For states without data in year n, the share of total assets was computed for the nearest year with available data. The average relative growth rate in the 5 years following the institution of free banking is computed two ways, one including and one excluding the year free banking was instituted. The average relative growth rate including the year free banking was instituted is in parentheses. N.a. indicates insufficient data to compute growth rates.

Sources: Growth rates are computed using data from U.S. Comptroller of the Currency, *Annual Report of the Comptroller of the Currency, 1876* (Washington D.C., 1876) and the formula:

$$\frac{A_n - A_{n-1}}{\left(\frac{A_n + A_{n-1}}{2}\right)} - \frac{N_n - N_{n-1}}{\left(\frac{N_n + N_{n-1}}{2}\right)}$$

where A_n = Total assets of state in year n, and N_n = total national assets in year n. States with free banking laws but no banks chartered under the law are omitted. These states are Alabama, Florida, Georgia, Iowa, Massachusetts, Pennsylvania, Tennessee, and Vermont.

TABLE 2
STATE MINUS REGIONAL GROWTH RATES OF BANK ASSETS

State	Year Free Banking Instituted	$n-3$	$n-2$	$n-1$	n	$n+1$	$n+2$	$n+3$	$n+4$	$n+5$	Three Years before Free Banking	Five Years After Free Banking
Connecticut	1852	−0.06	−0.06	0.22	−0.08	0.01	0.09	−0.20	0.14	0.29	0.03	−0.05 (−0.06)
Illinois	1851	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.27	n.a.	n.a.	n.a.	n.a.
Indiana	1852	−0.13	−0.12	−0.09	0.04	−0.03	0.46	0.68	−0.90	−0.13	−0.11	0.01 (0.02)
Louisiana	1853	0.15	−0.35	1.04	−0.92	−0.18	0.10	−0.03	−0.01	0.17	0.28	0.01 (0.04)
Michigan	1857	0.26	−0.21	−0.10	−0.18	−0.38	−0.14	−0.30	−0.56	n.a.	−0.02	−0.34 (−0.31)
Minnesota	1858	n.a.	n.a.	n.a.	n.a.	n.a.	0.69	-0.08	n.a.	n.a.	n.a.	n.a.
New Jersey	1850	−0.04	−0.06	−0.01	−0.08	−0.02	0.26	0.00	−0.35	0.11	−0.05	0.00 (−0.01)
New York	1838	n.a.	−0.24	−0.15	−0.28	0.10	−0.09	0.09	0.08	0.26	−0.20	0.09 (0.03)
Ohio	1851	0.32	0.12	−0.10	−0.01	−0.04	−0.34	−0.68	−0.24	0.03	0.11	−0.26 (−0.21)
Wisconsin	1852	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.60	0.44	0.25	n.a.	n.a.
All free banking states		0.08	−0.13	0.10	−0.22	−0.08	0.13	0.04	−0.15	0.06	0.02	0.00

Notes: Regions are defined as New England: Maine, Massachusetts, Vermont, New Hampshire, Rhode Island, and Connecticut; Middle Atlantic: Pennsylvania, New Jersey, Delaware, New York, Virginia, and Maryland; South: North Carolina, Kentucky, Tennessee, South Carolina, Georgia, Florida, and Mississippi; West: Indiana, Illinois, Iowa, Minnesota, Michigan, Wisconsin, and Ohio. Regional growth rates are computed without including states instituting free banking in that year. Relative growth rates computed using the formula:

$$\frac{A_n - A_{n-1}}{\left(\frac{A_n + A_{n-1}}{2}\right)} - \frac{(R_n - A_n) - (R_{n-1} - A_{n-1})}{\left(\frac{(R_n - A_n) + (R_{n-1} - A_{n-1})}{2}\right)}$$

where A_n = Total assets of state in year n, and R_n = Total regional assets in year n.
Source: See Table 1.

4 banks. The lack of entry was accompanied by a decline in the total assets of the banking industry in Michigan.

Connecticut and Ohio both experienced an increase in the number of banks following the passage of free banking laws. In Ohio, there were 52 banks chartered in 1850. Thirteen more banks were chartered in the year following the institution of free banking. However, the increase in the number of banks in Ohio, was accompanied by a decrease in total bank assets. In 1850, there were 37 banks in Connecticut. The year after free banking was instituted, 5 banks were chartered under the free banking law. By 1855, there were 67 banks chartered in the state, of which 13 were free banks. However, Connecticut did not experience any increase in relative asset growth following the institution of free banking.

New Jersey and Indiana both experienced wildcat banking under their free banking laws.[8] New Jersey shows a sharp increase in total assets the year following the institution of free banking followed by a sharp decrease. The increase was caused by a mistake in the list of securities eligible for note issue and led to wildcat banking.[9] Indiana shows a fall in the relative growth of assets in the five years after the institution of free banking, but high volatility from year to year. In the two years after the institution of free banking there is a large increase in assets followed by a decline. The pattern of growth was caused by wildcat banking produced by a defective free banking law. In the two years following the institution of free banking, close to a hundred banks were chartered in Indiana under the free banking law.

A state-by-state examination of entry after the institution of free banking does not support the thesis that free banking lowered barriers to entry. Only in New York is free banking followed by a relative increase in the number of banks and an increase in banking services supplied to the market. The number of banks in Louisiana declined following the passage of a free banking law. In Michigan, there was no change in the number of banks but an absolute decline in total assets. In Ohio, the number of banks increased, but total bank assets decreased. The number of banks in Connecticut increased, but relative asset growth remained essentially constant. New Jersey and Indiana experienced a small increase in the relative growth of assets and an increase in the number of banks following the passage of free banking laws, but these increases resulted from wildcat banking due to a defective free banking law and not lower barriers to entry per se.[10]

New York's free banking experience is the one exception that supports the thesis found in traditional financial histories that free

[8] See Rockoff, "The Free Banking Era: A Reexamination," pp. 141–68, for a detailed examination of wildcat banking under free banking.

[9] See Rockoff, *The Free Banking Era*, pp. 100–4.

[10] See Rolnick and Weber, "New Evidence on the Free Banking Era," pp. 1084–75, for another view of the Indiana experience.

banking lowered barriers to entry. New York passed the first free banking law and was the premier American financial center. The New York free bank experience is understandably the most widely documented and studied case of free banking. Because the New York free banking law significantly reduced entry barriers, traditional financial historians may have generalized New York's experience and erroneously concluded that free banking laws lowered entry barriers in other states.

A general statement about barriers to entry and free banking laws can be formulated. In eight out of eighteen states that passed free banking laws, there were no banks organized under the auspices of the law. Free banking laws in these states had no effect on barriers to entry. In three of the remaining ten states, Louisiana, Michigan, and Ohio, there was either a decrease in the number of banks or an absolute decline in total bank assets following the institution of free banking. Because a decline in entry barriers must be followed by either an increase in output or an increase in the number of firms in an industry, the thesis that free banking lowered barriers to entry can be rejected in these three states. Only in Connecticut was there an increase in the number of banks, but even there total asset growth relative to the national average was the same before and after the passage of the free banking law. The growth of assets in Connecticut relative to the growth of assets in New England declined following the institution of free banking. Since the lower barriers to entry theory implies an increase in the relative growth of assets, the lower barriers theory is rejected for Connecticut. In two states, New Jersey and Indiana, free banking produced wildcat banking and in three states, Illinois, Minnesota, and Wisconsin, which comprised only 10 percent of total banking assets affected by free banking laws, there are insufficient data to draw a conclusion.[11] This leaves only New York where a compelling argument can be made that free banking lowered barriers to entry. The conclusion can therefore be drawn that free banking laws did not generally lower barriers to entry, increase competition in the banking industry, or increase social surplus.

Because the existence of effective entry barriers under the system of individual legislative charters has never been proven and is supported only by literary evidence, the theory that significant entry barriers to the banking industry existed in the nineteenth century can be questioned. Historical records as well as theory suggest that the process of obtaining a charter from the legislature involved substantial bargaining. The

[11] Although there are insufficient data to perform the growth rate test, there is fragmentary evidence on free banking in these states. Six years prior to the advent of free banking in Illinois, total specie and loans and discounts were $2,365, 599. In 1856, five years after the institution of free banking, specie and total loans and discounts had fallen to $1,097,149. During the same period, the number of banks increased from 15 to 36. The Minnesota free banking law, because of a defect in the law, led to wildcat banking. See Rockoff, *The Free Banking Era*, pp. 104–14, for details.

length of the charter, exclusivity, capitalization, branching restrictions, and the price of a charter were all negotiable. While there is good information about the terms of charters, surviving evidence about their price is poor.[12] In some cases banks supported public works projects as a condition of obtaining a charter, but for most charters the price involved an unrecorded payment by the bank organizers to members of the legislature.[13] In numerous cases, bank organizers were also the legislators who voted on banking legislation. Because payments were politically sensitive, their size and existence are unrecorded. Free banking charters contained their own restrictions. Like individual legislative charters, free banking laws established capital requirements, reserve requirements, portfolio restrictions, and branching restrictions, among others. The absence of unusual growth in free banking states suggests that free banking laws exchanged one set of entry barriers contained in the legislative charter system for different, but equally effective barriers.

The argument is supported in the histories of states which passed free banking laws but saw little or no banking activity under its provisions. The states include Massachusetts, Iowa, Pennsylvania, Alabama, Florida, Georgia, Tennessee, and Vermont. Because no banks were organized under the free banking laws in these states, it is possible that free banking laws restricted banking operations and eliminated the potential profit from opening a bank.

The results of this analysis raise the possibility that the banking industry was essentially competitive under the legislative charter system.[14] Because state legislatures could restrict entry into the banking industry does not mean they created a monopoly in banking. Where there was more than one bank, the industry faced usual cartel problems and may have been unable to enforce output or price-fixing agreements.[15] If banks in the industry earned economic profits, the right to issue charters constituted an unexploited profit opportunity for legislators. Legislators would extract payments equal to the monopoly profits from existing banks. As control of the legislature changed hands, the industry would tend to move toward a competitive structure as addi-

[12] See Davis R. Dewey, *State Banking Before the Civil War* (Washington D.C., 1910).

[13] See Robert E. Chaddock, *The Safety Fund Banking System in New York, 1829–66* (Washington D.C., 1910), chap. 1; and Robert King, "On the Economics of Private Money," *Journal of Monetary Economics*, 12 (July 1983), p. 140, for the New York case.

[14] See Richard Sylla, "Forgotten Men of Money: Private Bankers in Early U.S. History," this JOURNAL, 36 (Mar. 1976), pp. 173–88, for a discussion of private banking and attempts to limit entry through legislation in the early part of the nineteenth century.

[15] This line of reasoning may explain much of the anecdotal evidence about city/country bank animosity. Rather than the traditional explanation that country banks "overissued" their circulation because their remote location precluded redemption, country banks may have been criticized by city banks because by competing against city banks they made cartels more difficult to establish and maintain. See Fritz Redlich, *The Molding of American Banking* (New York, 1968), vol. 1, chap. 5.

tional banks were chartered.[16] Interstate competition may have prevented, limited, and eroded the ability of the legislature in any one state from attaching rents to ownership of a bank charter. If the legislature in any particular state effectively controlled entry into the industry, competing banks could simply set up business in a cooperative neighboring state.[17] This could explain the advent of free banking laws in Connecticut, Massachusetts, New Jersey, and Vermont in the early 1850s and in Illinois, Indiana, and Ohio between 1851 and 1852.[18] Interstate competition limiting monopoly power may have been particularly strong in regions where the banking industry was well developed and the transaction costs imposed by the distances between states were small. Finally, even though they had the power to do so, state legislatures may not have significantly limited the number of banks.

III. CONCLUSION

Traditional financial historians and cliometricians have assumed that free banking lowered barriers to entry. In retrospect, the conclusion was the result of inordinate attention paid to the innovative provisions of free banking laws which, unlike the legislative charter system, created well-defined conditions for obtaining a charter and placed no limit on the number of free banks. This view was established in the literature by an unwarranted generalization of the New York free banking experience to other free banking states. Closer examination of free banking outside of New York reveals that free banking was not generally followed by entry of new banks and an increase in output, and therefore the theory that free banking generally led to lower barriers to entry must be rejected.

This result leaves the monopoly power/free banking question partially resolved. A fuller and more detailed look at the banking industry and the limitations of the argument used here reveals several alternative explanations. Laws prohibiting private banking and the legislative charter system, although intended to create a monopoly or cartel in the banking industry, may have been defeated by market incentives to avoid regulation or may have been circumvented by the classic difficulties of enforcing price and quantity restrictions in a cartel. Confirmation of the

[16] See Walter W. Chadbourne, *A History of Banking in Maine, 1799–1930* (Orono, 1936), p. 235, for an example.

[17] See Knox, *A History of Banking in the United States*, p. 377.

[18] My argument regarding the lack of asset growth ignores interaction between the establishment of free banking laws in one state and monopoly power in other states. If out-of-state banks are not close substitutes for in-state banks, then there is no effect. However, if in- and out-of-state banks competed, then free banking would force competitive behavior on banks in neighboring states. In this case, the institution of free banking in one state would force increases in output in all neighboring states. If this were true, then industry output would increase, but a cross-sectional comparison of output growth rates would show no difference between states with and without free banking.

hypothesis is complicated by the almost total absence of a quantitative or descriptive record of private banking.[19] Free banking laws may have contained different but equally effective provisions restricting entry. In other words, the banking industry was not competitive, but free banking laws did nothing to change the situation. By the time free banking became prevalent, the legislative charter system may no longer have been a significant barrier to entry. The political process and falling informational and technological barriers to interstate competition may have negated the ability of the state to allocate economic rents through bank charter ownership. In any case, there is basis for considerable skepticism that the antebellum banking industry was not competitive.

[19] See Sylla, *The American Capital Market*, appendix A.