Banking Instability and Regulation in the U.S. Free Banking Era*

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The United States is moving toward a less regulated banking industry. Banks generally are now allowed to pay market rates of interest on most of their deposits and to sell many of their products nationwide. And banks in some states can now offer a variety of traditionally nonbank financial products, such as brokerage, real estate, and insurance services. More deregulation is on the horizon, too, with the possibility that even the 1933 Glass-Steagall prohibition against banks underwriting corporate securities may be relaxed. Such deregulation, which certainly increases competition among banks as well as between banks and other financial institutions, is viewed by many as benefiting consumers of financial services.

However, bank deregulation may also bring with it some very large costs. Even some of the staunchest proponents of laissez-faire have viewed banking as inherently unstable. According to this view, if left to unfettered market forces, banks would be prone to massive withdrawals simply because an ill-informed public would at times lose confidence in the industry's ability to make good on their liabilities. Proponents of this view cite numerous bank panics in U.S. history as evidence of the industry's inherent instability and have argued for bank regulation to keep this instability in check.

Of course, U.S. banking history cannot properly be used as evidence of inherent instability in banking. U.S. banks have always been regulated to some degree, and evidence from even a lightly regulated banking system does not constitute evidence of what would happen in a totally unregulated system. However, if one accepts the proposition that banking is inherently unstable, then U.S. banking history can help assess the effectiveness of alternative regulatory environments in controlling the problem.

One period in U.S. banking history, the so-called Free Banking Era (1837–63), seems a particularly good choice for study. Since this period had relatively few bank regulations (essentially aimed at protecting those who held the currency banks could issue), it allows us to isolate the effectiveness or ineffectiveness of those particular regulations in containing inherent instability. The Free Banking Era, moreover, has the reputation for wildcat banking, frequent bank failures, and substantial losses to users of bank currency despite regulatory attempts to protect them. Thus, the period would seem to have had enough individual bank problems to have easily caused a general loss of confidence in the entire banking system.

Our examination of the evidence indicates, however, that that did not happen during the Free Banking Era. Many free banks did have problems, but their problems were not contagious. The free bank regulations appear to have provided the public with enough information about

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the financial condition of individual banks to keep the inherent instability in banking under control.

The Concern: Inherent Instability in Banking

There is no agreement on a precise definition of *inherent instability in banking.* However, the conventional view is that it means that general bank panics can occur without economy-wide real shocks, that is, without economy-wide disturbances to real economic activity that affect all or most banks. The usual explanation for how this can happen involves a local real economic shock that becomes exaggerated by the actions of incompletely informed depositors (or holders of other demand liabilities of banks, for example, free bank notes).[1]

Incompletely informed depositors are critical to this explanation. According to it, the local real shock causes runs on some banks by causing the value of their assets to fall below the value of their liabilities. Individuals aware of this situation rationally want to withdraw deposits from these banks and switch to currency or deposits of other banks. Since the real shock is local, it does not affect the assets of most banks, so informed depositors do not withdraw funds from them. Thus, if depositors have full information about bank portfolios, no general run or panic results.

Incompletely informed depositors, however, can turn the local shock into a general bank panic. Such depositors cannot always distinguish local shocks from economy-wide shocks. More important, they cannot clearly distinguish banks that are relatively unaffected by the local shock and still have sufficient assets to cover their deposits (*sound* banks) from banks that are greatly affected and are left with insufficient assets to cover deposits (*unsound* banks). Consequently, incompletely informed depositors quite rationally interpret the runs of some banks as a signal that other banks may be in trouble. Hence, the trouble at a few banks spreads as depositors begin to worry about other banks. That is, bank runs are contagious because depositors use the observation of runs of some banks to revise their views about the safety of others.[2]

This explanation of a general bank panic corresponds to that of Friedman and Schwartz (1963, p. 308) for the events of 1930:

> A crop of bank failures, particularly in Missouri, Indiana, Illinois, Iowa, Arkansas, and North Carolina, led to widespread attempts to convert demand and time deposits into currency. . . . A contagion of fear spread among depositors, starting from the agricultural areas, which had experienced the heaviest impact of bank failures in the twenties. But such contagion knows no geographical limits.

Clearly this general loss of confidence, due to incomplete information, causes more banks to be hurt by the local shock than would be hurt if information were complete. By demanding their funds, a doubting public can force some banks that were not otherwise affected by the local shock to *close,* to go out of business even though all depositors are eventually paid off. Still more disturbing, a doubting public can cause some sound banks to *fail,* to go out of business without being able to fully pay off their depositors. Obviously, the local real shock causes the value of some assets to fall because some banks have to liquidate assets. With complete information, depositors would be able to determine the new level of asset prices, and banks with assets sufficient to cover liabilities would not be run. With incomplete information, however, asset prices can be lower than their full information level because the demands of fearful depositors cause more banks to have to liquidate assets. And at these lower asset prices, fewer banks have assets sufficient to cover liabilities.[3]

The Observation: Many Free Bank Failures and Closings

At first glance, the Free Banking Era appears to be a classic example of uncontrolled inherent instability. The few regulations in free banking laws tried to protect holders of these banks' major liabilities, bank notes, from virtually any loss. Nevertheless, free bank noteholders did suffer losses and many free banks went out of business.

Laws and Operations

Before 1837, all new U.S. banks had to be chartered by a state legislature. Although these charters differed from bank to bank and from state to state, generally they established reserve and capital requirements for a bank and limited the types of loans it could make. In practice, the chartering system was a cumbersome and very political process that severely limited the number of banks opened.

Starting in 1837, many states passed general banking laws that eliminated the legislative charter requirement for a bank to be established. The new laws essentially allowed anyone to open a bank that could issue its own

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[1]A real shock is *local* if it only affects a particular geographic area or a particular class of assets. An economy-wide, or *global,* shock affects the entire country or large classes of assets.

[2]An explicit model of inherent instability in banking that incorporates these ideas is Diamond and Dybvig's (1983).

[3]This is the aspect of bank panics that seems to motivate Friedman and Schwartz's (1963) emphasis on the high percentage of liabilities that many failed banks ultimately paid off after the Great Depression.

currency (bank notes), take deposits, and make loans. The Free Banking Era derives its name from this free entry provision of the general banking laws. By 1860, a majority of the 33 states in the Union had passed such laws.

Despite its name, though, the Free Banking Era was not a period of laissez-faire banking. While entry was unrestricted, banks established under the free banking laws were subject to other restrictions. Most of the free banking laws were patterned on that passed by the New York legislature in 1838 (and amended in 1840). In particular, they contained its three regulations intended to insure the safety of free bank notes:

- Free banks had to deposit designated state bonds with the state banking authority (state auditor or treasurer) as security for all notes issued. Most states allowed bonds of other states as well as their own; some states also allowed federal bonds.
- Free banks had to pay specie (gold or silver) for notes on demand. Failure to redeem even one note meant that the state banking authority would close the bank and sell all of the assets deposited with it to pay off noteholders. Further, in many states, noteholders had preference over other bank creditors in terms of legal claims on the remaining assets of the bank.
- In general, free bank stockholders were liable for bank losses in an amount up to the value of their stock even though free banks were limited liability companies. This *double liability* provision meant that, if a bank failed, someone with, say, $25,000 of free bank stock not only might lose this investment, but also would be liable for an additional $25,000 of personal wealth to cover bank losses (including those on notes).

As an illustration of how a free bank operated under these laws, consider a potential banker with $50,000 of capital. To establish a free bank, that person would buy state bonds with this capital and deposit them with, say, the state auditor. In exchange, the person would receive $50,000 of notes that the new bank could issue. Presumably, these notes would get into circulation by being exchanged for other assets (loans, specie, or more state bonds, for example).

The balance sheet of the prototypical free bank would look something like Table 1. This table assumes the free banker exchanged the initial $50,000 of notes for $25,000 more of state bonds and $25,000 of loans. These additional $25,000 of bonds were then deposited with the auditor for another $25,000 of notes which were finally exchanged for another $15,000 of loans and $10,000 of specie.

Table 1
Balance Sheet of a Prototypical Free Bank

Assets		Liabilities and Capital	
State Bonds	$ 75,000	Liabilities: Notes Outstanding	$ 75,000
Loans	40,000		
Specie	10,000	Capital	50,000
Total	$125,000	Total	$125,000

Table 1 illustrates that free bank notes could be risky. Here, if the value of the bank's state bonds and loans fell below $15,000, then the value of the bank's assets plus the $50,000 additional liability of stockholders (due to the double liability provision) would be insufficient to pay off noteholders. Thus, although the free banking laws were intended to promote note safety, they were not sufficient to guarantee it.

Problems

In a previous study (Rolnick and Weber 1983) we presented evidence on the free banking experience of four states for which detailed state auditor data are available: New York, Indiana, Wisconsin, and Minnesota. Our findings indicated that free banking in these states did have problems, though they were quantitatively smaller than is usually suggested. Two of our major findings:

- Some free bank noteholders suffered losses. The losses ranged from an average of between 10 and 15 cents on the dollar in Indiana to an average of about 25 cents on the dollar in New York and Wisconsin. (We exclude Minnesota here because we think our earlier loss calculations for that state are far too high. We explain why in Rolnick and Weber 1985.)
- Many free banks did not survive the Free Banking Era. Between 1838 and 1863, of the 709 free banks that operated in our four states, 48 percent (339) went out of business. About one-third of these (104) *failed;* their noteholders suffered losses. The rest simply *closed;* they went out of business but fully paid off their noteholders.

This large number of bank failures and closings suggests that the instability inherent in banking was left unchecked during the Free Banking Era.

A Crucial Missing Element: Contagion

A large number of banks failing or closing, however, is not enough to conclude that the regulations in this period were inadequate to stabilize banking. Recall that inherent instability in banking manifests itself through a contagious loss of confidence, or panic, that leads to trouble at good banks as well as bad. Evidence of uncontrolled instability must include signs of contagion, that is, signs that problems with one bank or with one state banking system affected the confidence that the public had in others.

The nature of free bank notes and the fact that free banks failed imply that such losses of confidence could have occurred during the Free Banking Era. A local shock could have caused the value of the assets backing the notes of some free banks to decline, leading holders of these notes to desire to redeem them for specie and leading some of these banks to fail. If noteholders of banks relatively unaffected by the shock were incompletely informed, they might have—rightly or wrongly—interpreted the redemptions and failures at some banks as evidence that their bank was also in trouble. In this way a local shock during this period could have caused a bank panic, that is, a large number of bank failures and closings that were not warranted by the local shock.

To determine whether the Free Banking Era had such bank panics, we first identify periods during these 26 years when local shocks caused free bank failures in the four sample states we have studied before: New York, Indiana, Wisconsin, and Minnesota (Rolnick and Weber 1984). Then we try to determine whether these failures were contagious by examining the extent to which they spread.

The obvious first pass at identifying periods when shocks affected free banks is to find periods when several banks failed. Our findings are displayed in Table 2. Notice that most (76 of the 96) free bank failures occurred during periods of falling asset prices, as measured by large declines in the prices of either Indiana or Missouri state bonds. We would expect declines in the prices of these bonds to be potential causes of failures in at least three of our sample states because Indiana 5s made up a large portion of the bonds backing the notes of the banks that failed in New York and Indiana and Missouri 6s made up a large portion of the bonds backing the notes of the banks that failed in Wisconsin. The remaining 20 failures grouped at the bottom of the table occurred during periods of steady or rising bond prices.

Table 2

Free Bank Failures Grouped by Changes in Asset Prices, 1841–61

Periods When Asset Prices Were*	Number of Bank Failures in Sample States				
	New York	Indiana	Wisconsin	Minnesota	Four States
Falling					
Jan. 1841–April 1842	20	—**	—	—	20
May 1844–July 1846	2	—	—	—	2
July–Dec. 1854	1	11	0	—	12
March–Oct. 1857	1	0	0	—	1
June 1860–June 1861	1	1	37	2	41
Total	25	12	37	2	76
Stable or Rising					
May 1842–April 1844	3	—	—	—	3
December 1847	1	—	—	—	1
October 1851	2	—	—	—	2
Jan. 1853–June 1854	2	1	0	—	3
Jan. 1855–June 1856	0	3	0	—	3
Jan.–Dec. 1858	1	0	0	0	1
June–Sept. 1859	0	0	0	7	7
Total	9	4	0	7	20
All Periods	34	16	37	9	96

*The assets defining these periods are Indiana 5s and Missouri 6s. The periods when their prices were stable or rising exclude lengthy periods when no free banks failed.

**A dash (—) indicates that the state did not have a free banking law during the particular period.

Source: Rolnick and Weber 1984

Table 2 shows that 80 of the 96 free bank failures seem to have occurred within four time periods. (The remaining 16 failures did not occur in large groups.) We are confident that three of these periods, accounting for a total of 68 of the 80 failures, were associated with local real shocks:

- *January 1841–April 1842, when 20 New York free banks failed.* The local real shock here was the possibility, which arose as early as 1839, that some states would default on their bonds due to insufficient revenues from the extensive railroad and canal

projects that these bonds were used to finance (Ratchford 1941). In fact, Indiana did default in 1841, along with Arkansas, Florida, and Mississippi and followed by Illinois, Louisiana, Maryland, Michigan, and Pennsylvania in 1842.

- *June–September 1859, when 7 of Minnesota's 12 free banks failed.* The local real shock here was the suspension of construction on Minnesota's railroads in the late spring of 1859. This caused a drop in the price of Minnesota 7s (the so-called railroad bonds) that backed the notes of several Minnesota free banks. We have determined that the failure of at least 5 Minnesota free banks was related to the suspension of railroad construction (Rolnick and Weber 1985).

- *June 1860–June 1861, when 41, mostly Wisconsin, free banks failed.* The local real shock here was obviously the onset of the Civil War. The shock can be considered local in the sense that the prices of bonds of Southern states, like Missouri 6s, were affected much more than those of Northern states. For example, during this period the price of North Carolina 6s declined 56 percent; Missouri 6s, 57 percent; and Virginia 6s, 59 percent. In contrast, the price of Indiana 5s declined only 20 percent.

One period with a group of bank failures we have not been able to definitely associate with a local real shock: July–December 1854, when 12 free banks failed, all but 1 in Indiana. The 11 Indiana failures represent 15 percent of all free banks established in that state up to that time. Evidence from contemporary sources seems to indicate that the shock was more economy-wide than local. However, prices of Indiana bonds declined more than those of other state bonds during this period, suggesting that we can treat the period as if there had been a local shock which primarily affected Indiana bond prices.

Having identified local shocks and apparently related free bank failures, we now need to determine whether the failures led to unwarranted runs on other banks and their subsequent failures or closings. A positive determination would indicate that the instability inherent in banking was unchecked during the Free Banking Era. Our first test is to determine whether failures in any one of our four sample states were followed by failures and closings in the others. This test is suggested by the view of Friedman and Schwartz (1963, p. 308) that "contagion knows no geographical limits."

The definition of contagion as bank failures spreading across state lines means that only the three post-1852 periods we have isolated could potentially provide evidence of contagion. That is because only one of our four sample states, New York, allowed free banking before 1852. None of the three post-1852 periods provides evidence that free bank failures were contagious. Specifically,

- Between July and December 1854, only Indiana seems to have had banking problems. Of the 232 free banks operating in New York in September 1854, only 1 bank failed and 14 banks closed by the end of the year. And of the 19 banks operating in Wisconsin in July 1854, none failed and only 1 closed during this period.

- Between June and September 1859, banking problems seem to have been limited to Minnesota. During this period, none of the approximately 390 free banks operating in New York, Indiana, and Wisconsin failed and no more than 7 banks closed, all in Wisconsin.

- Between June 1860 and June 1861, banking problems seem to have been confined to Wisconsin. During this period, of the 273 free banks operating in New York in December 1859, only 1 failed and 12 closed, and of the 17 free banks operating in Indiana in January 1860, only 2 went out of business.[4]

This focus on an interstate test of contagion during the Free Banking Era can be justified by the concern about a general loss of confidence in the banking system. But a skeptic might argue that more geographically limited bank runs—say, of an intrastate nature—could also indicate such a loss. That is, while the Free Banking Era may not have had bank panics that crossed state boundaries, it could have had panics within states.

Therefore, we perform a second test, looking for evidence of intrastate contagion. Although we cannot determine explicitly whether bank failures spread through unwarranted bank runs in our sample states, we can establish that within a state the banks that failed or closed after local shocks had portfolios much more vulnerable to the shocks than the banks that remained in business. This suggests that even intrastate contagion was limited.

Minnesota's experience is a good example. The banks that failed in this state in the summer of 1859 backed their notes almost exclusively with Minnesota 7s, the ill-fated railroad bonds. Those banks that stayed in business had bonds that held their value, either Minnesota 8s (backed by explicit taxes) or Ohio 6s.

[4]All figures on the total number of operating free banks are from Rolnick and Weber 1983, p. 1088.

Tables 3 and 4

The Relationship Between State Bonds Backing Notes and Bank Status After Local Shocks in the Free Banking Era

Table 3

In Wisconsin—The State Bonds Backing the Notes of Free Banks on January 31, 1860

			Banks That in June 1860–June 1861					
	All 107 Banks		Failed (35)		Closed (17)		Stayed Open (55)	
State Bonds	Face Value	% of Total	Face Value	% of Total	Face Value	% of Total	Face Value	% of Total
Southern								
Missouri 6s	$1,974,000	40.6	$1,016,000	48.8	$211,000	32.9	$ 747,000	34.9
Tennessee 6s	738,000	15.2	320,000	15.4	120,000	18.7	298,000	13.9
North Carolina 6s	409,500	8.4	197,000	9.5	27,500	4.3	185,000	8.6
Virginia 5s and 6s	233,340	4.8	86,600	4.2	71,240	11.1	75,500	3.5
Louisiana 5s and 6s	150,500	3.1	88,000	4.2	17,000	2.7	45,500	2.1
Other Southern	62,000	1.3	36,000	1.7	3,000	.5	23,000	1.1
Total	$3,567,340	73.4	$1,743,600	83.8	$449,740	70.1	$1,374,000	64.2
Northern								
Illinois 6s	$ 542,020	11.1	$ 132,420	6.4	$ 98,600	15.4	$ 311,000	14.5
Ohio 6s	225,000	4.6	86,000	4.1	31,000	4.8	108,000	5.0
Michigan 6s	185,500	3.8	60,000	2.9	30,000	4.7	95,500	4.5
Wisconsin 6s	100,000	2.1	39,000	1.9	5,000	.8	56,000	2.6
Other Northern	241,500*	5.0	19,500	.9	27,000*	4.2	195,000**	9.1
Total	$1,294,020	26.6	$ 336,920	16.2	$191,600	29.9	$ 765,500	35.8
All State Bonds	$4,861,360	100.0	$2,080,520	100.0	$641,340	100.0	$2,139,500	100.0

Note Percentage columns may not add to totals due to rounding

*This value includes only bonds of Wisconsin railroads.

**This value includes $50,000 of bonds of Wisconsin railroads.

Source. Wisconsin 1860, Rolnick and Weber 1983, 1984

Table 4

In New York—The State Bonds Backing the Notes of Free Banks on December 31, 1839

			Banks That in Jan. 1841–April 1842			
	All 73 Banks		Failed or Closed (17)		Stayed Open (56)	
State Bonds	Face Value	% of Total	Face Value	% of Total	Face Value	% of Total
Defaulting States						
Arkansas 6s	$1,099,000	22.0	$ 220,000	14.1	$ 879,000	25.7
Illinois 6s	1,045,000	21.0	395,000	25.4	650,000	19.0
Indiana 5s	1,043,000	20.9	787,000	50.5	256,000	7.5
Michigan 6s	872,000	17.5	80,000	5.1	792,000	23.1
Total	$4,059,000	81.4	$1,482,000	95.1	$2,577,000	75.2
Nondefaulting States						
New York 5s	$ 478,200	9.6	$ 0	.0	$ 478,200	14.0
Alabama 5s	207,000	4.2	66,000	4.2	141,000	4.1
Other	240,500	4.8	10,000	.6	230,500	6.7
Total	$ 925,700	18.6	$ 76,000	4.9	$ 849,700	24.8
All State Bonds	$4,984,700	100.0	$1,558,000	100.0	$3,426,700	100.0

Note Percentage columns may not add to totals due to rounding.

Source: New York 1839, Rolnick and Weber 1983, 1984

Wisconsin had a similar experience. The Wisconsin banks that went out of business between June 1860 and June 1861 had a far higher percentage of Southern bonds backing their notes than those that stayed in business. In Table 3 we group the bonds held by the Wisconsin state treasurer as backing for free bank notes on January 31, 1860, by whether the bonds were those of a Southern or a Northern state and by whether the banks issuing the notes subsequently failed, closed, or remained in business. The banks that failed and closed had 84 and 70 percent of their portfolios in Southern bonds. In contrast, the banks that remained open held only 64 percent of their portfolio in such bonds.

New York free banks follow the same pattern. Here the local shock was states defaulting on their bonds, and failed and closed banks had a higher percentage of their portfolio in defaulted bonds (Table 4). Of the 73 New York banks that had bonds deposited with the state auditor on December 31, 1839, 16 banks failed and 1 closed between January 1841 and April 1842. Those 17 banks held nearly all—95 percent—of their state bond portfolio in the bonds of states that defaulted. The banks that stayed in business held a much lower percentage of such bonds.[5]

An Explanation: Adequate Public Information

Overall, the evidence on free bank failures and closings indicates that free banking experienced little if any of the contagion supposed to be symptomatic of inherent instability. But if banking is inherently unstable, why weren't free bank failures contagious? Why didn't the bank failures in one state spread to other states or even within a state? A possible explanation: The requirement that free banks had to keep a reserve of state bonds behind their notes led to the public being reasonably well informed about a substantial part of most free bank portfolios. Free bank failures caused by local shocks did not spread, that is, because the public knew more or less which banks were truly affected by the shocks.

Consider the seven free bank failures in Minnesota between June and September 1859. The local real shock here affected only the price of Minnesota 7s (the railroad bonds), and these bonds backed the notes of at least five of the banks that failed. There was no reason for the Minnesota failures to spread because the public knew that Minnesota 7s did not back the notes of banks in any other state. In New York, notes stated whether they were backed by state bonds alone or by state bonds and mortgages, and free banks established in that state after 1840 were only allowed to back notes with New York or U.S. bonds. In Indiana and Wisconsin, Minnesota 7s could have backed free bank notes, but publicly available reports on individual bank portfolios by state banking authorities revealed that none did. And within Minnesota, the newspapers kept the public well informed about which were the so-called railroad banks.

Or, consider the 41 free bank failures between June 1860 and June 1861, which occurred mostly in Wisconsin. The local shock here, again, was the onset of the Civil War, which caused the prices of bonds of Southern states to decline far more than the prices of bonds of Northern states. Since state bonds were traded on the New York Stock Exchange, current market price information was readily available to the public. But the public knew more than that. The Wisconsin failures very likely did not trigger failures and closings in New York and Indiana, our other two sample states with free banking systems of any size at the time, because people in those states knew that Southern bonds were a much smaller part of the note backing in their states than in Wisconsin. As noted above, after 1840 New York allowed only New York or U.S. bonds as backing for notes. In Indiana, the state auditor regularly reported the bond backing of notes on a bank-by-bank basis. He reported on November 1, 1859, for example, that only 44 percent of the notes of Indiana's free banks were backed by bonds of Southern states.

Summary and Implications

If banking is inherently unstable, then the riskiness of free bank notes could have led to bank panics during the Free Banking Era. Yet we found no evidence that bank failures in one state spread to other states or even spread within a state during this period. A plausible explanation for the lack of contagion is that the state bonds deposited with the state banking authorities as backing for free bank notes became public information.

This, of course, does not mean that free bank failures never made the public question some banks. Since noteholders were aware of which bonds backed their notes, however, they were at least not likely to lose confidence in sound banks once a bank or even a group of banks failed.[6] That is, we have found that the public

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[5]The data on bond holdings for both Wisconsin and New York are taken from the last balance sheet available before the period of the local shock. Since the date of this balance sheet precedes the local shock period, the numbers of total banks and bank failures and closings do not agree with those given in Table 2 or earlier in the text.

[6]Some might be willing to accept the interpretation that the state bond reserve requirement prevented bank failures from spreading, but would argue that this regulation had the undesirable side effect of increasing the number of free bank failures. They would argue that this regulation, by requiring banks to back their note issue with risky state bonds, led free banks to hold riskier portfolios than they

generally did not lose confidence in banking during the Free Banking Era because they were relatively well informed about the quality of the backing of their notes.

This study of one period of U.S. banking history suggests that regulations which provide information to the public about the quality of the backing of bank liabilities can effectively control inherent instability.[7] The obvious implication for today is that regulations intended to control banking instability should provide depositors with better information on the quality of the backing of their bank deposits. Two examples of regulatory changes which would do that are more complete disclosure of individual bank portfolios and higher reserve ratios on bank liabilities.

This study must be interpreted cautiously, however. Nothing in it suggests that in a totally unregulated environment information on the quality of bank portfolios would not be made available to the public either by banks themselves or by some bank rating service (such as the bank note reporters that were regularly published during the Free Banking Era). Our study provides no evidence, that is, on the deeper question of whether or not banking is inherently unstable.

References

Diamond, Douglas W., and Dybvig, Philip H. 1983. Bank runs, deposit insurance, and liquidity. *Journal of Political Economy* 91 (June): 401–19.

Friedman, Milton, and Schwartz, Anna Jacobson. 1963. *A monetary history of the United States: 1867–1960.* Princeton, N. J.: Princeton University Press.

King, Robert G. 1983. On the economics of private money. *Journal of Monetary Economics* 12 (July): 127–58.

New York. 1839. State Comptroller. Report of the Comptroller.

Ratchford, B. U. 1941. *American state debts.* Durham, N.C.: Duke University Press.

Rolnick, Arthur J., and Weber, Warren E. 1983. New evidence on the Free Banking Era. *American Economic Review* 73 (December): 1080–91.

_____. 1984. The causes of free bank failures: A detailed examination. *Journal of Monetary Economics* 14 (October): 267–91.

_____. 1985. Explaining the demand for free bank notes. Research Department Staff Report 97. Federal Reserve Bank of Minneapolis.

White, Lawrence H. 1984. *Free banking in Britain: Theory, experience, and debate, 1800–1845.* Cambridge: Cambridge University Press.

Wisconsin. 1860. Report of the Bank Comptroller's Office, February 1.

would have without such a regulation. The evidence presented here does not support or reject that argument. An argument against it, however, is that, despite the state bond reserve requirement, free banks could have made their notes perfectly safe by purchasing perfectly safe assets with them; that is, the regulation may not have been a binding constraint on free bank behavior (King 1983, p. 147, fn. 31).

[7]Lawrence White's (1984) study of the Scottish free banking system (1727–1844) is also consistent with the view that regulations which provide information to noteholders can prevent the spread of bank failures. In the Scottish case the noteholder information was provided by the unlimited liability of most Scottish free bankers and good information on their wealth (White 1984, pp. 41–42):

> A Scottish creditor was legally entitled to the debtor's real and heritable estate as well [as the debtor's personal estate]. The amount of real and heritable estate an individual possessed could be easily determined by consulting public records. . . . It . . . enabled members of the public, if they wished, to ascertain the ultimate assets of a local banking partnership. The great security provided to creditors under Scots law helped immunize Scottish banks against any danger of a panic-induced run.

The views expressed herein are those of the authors and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.