Explaining the Demand for Free Bank Notes*

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During the so-called Free Banking Era (1837–63), an important feature of the state laws that established free banking was the protection of noteholders. In many free banking states, noteholders not only had state bonds securing their notes but also had first lien on the rest of a bank's assets. In some states, they could even hold bank owners accountable for losses up to the original value of their equity. It was clearly a system designed to create a reasonably safe private medium of exchange.

The system, however, did not always perform as intended. At times, banks failed without holding enough resources to pay off their noteholders. In Minnesota, for example, some free banks could only pay noteholders 16 cents on the dollar.[1] While noteholders in other states fared much better, free bank notes were clearly risky. Consequently, they appear to have been dominated in rate of return by specie (gold and silver coin) as a medium of exchange. Why, then, were bank notes demanded, circulating in most states at or close to par?

The conventional answer to this question is that the demand for these notes at par came from a naive or misinformed public who simply accepted all free bank notes as perfectly safe claims to specie. In this paper we propose a much different answer. We argue that the demand for free bank notes came from a reasonably well-informed public who treated these notes as small-denomination securities. As a result, the price of free bank notes was not necessarily equal to their par value but rather reflected the expected value of the assets backing them. Specifically, we argue that when free banks backed their notes with relatively safe bonds and other good assets so that the probability of default was very small, their notes initially sold and then exchanged at par. However, when free banks backed their notes only with risky bonds so that the probability of default was significant, their notes initially sold and then exchanged well below par.

Generally, we find that the empirical evidence is consistent with our explanation. In most instances because of their backing, free bank notes were roughly as safe as specie, and we find these notes exchanging at or close to par. In a few cases, however, the backing of free bank notes was insufficient to support par pricing. In these cases, empirical evidence is consistent with the contention that the public were well informed and treated these bank notes as small-denomination securities which were issued and exchanged well below par.

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[1] For a further discussion of the experience of the Free Banking Era, see Rockoff 1975 and Rolnick and Weber 1983, 1984.

The paper proceeds as follows. To begin, we illustrate the potential risk associated with free bank notes by briefly discussing the regulations under which a free bank operated. We then consider two types of experiences to test whether or not prices of free bank notes reflected this risk. First, we consider the experiences of New York, Wisconsin, and Indiana, where the backing of free bank notes was quite safe. We find that the notes of banks in these states circulated close to par. Second, we consider the experience of Minnesota, where many free bank notes were very poorly backed. Here the evidence suggests that these notes circulated well below par; thus priced, they presumably were demanded because they offered their holders an expected return to compensate for risk. Finally, we present a summary and some of the implications of our findings.

Free Banking Regulations and Potential Note Risk

Most U.S. free banking laws were patterned on the laws passed by the New York legislature. That state's original free banking act, passed on April 18, 1838, contained two major provisions intended to provide a high degree of bank note safety:

- *A 100 percent state bond reserve.* Notes were to be backed by "public debt now created or hereafter to be created by the United States or by this State, or such other States of the United States as shall be approved by the comptroller, . . . but such public debt shall in all cases be, or be made to be, equal to a stock [bond] of the state producing five per cent per annum; and it shall not be lawful for the comptroller to take any stock at a rate above its par value" (ch. 260, sec. 2).
- *Par redemption.* If a bank refused to redeem any of its notes, "the comptroller shall . . . give notice in the state paper that all the circulating notes issued by such person or association will be redeemed out of the trust funds in his hands for that purpose; and it shall be lawful for the comptroller to apply the said trust funds belonging to the maker or makers of such protested notes, to the payment and redemption of such notes, with costs of protest, and to adopt such measures for the payment of all such circulating notes put in circulation by the maker or makers of such protested notes, pursuant to the provisions of this act, as will, in his opinion, most effectually prevent loss to the holders thereof" (ch. 260, sec. 4).

Since the first provision would not provide 100 percent backing if bonds were selling below par, the New York law was amended on May 14, 1840, to prohibit the comptroller from accepting a state bond "at a rate above its par value, nor above its current marked value" (ch. 363, sec. 1). Further, the new constitution of the state, adopted in 1846, included two additional provisions to reduce bank note risk:

- *Extended stockholder liability.* "The stockholders in every corporation and joint stock association for banking purposes, issuing bank notes or any kind of paper credits to circulate as money, after the first day of January, one thousand eight hundred and fifty, shall be individually responsible to the amount of their respective share or shares of stock in any such corporation or association, for all its debts and liabilities of every kind, contracted after the said first day of January, one thousand eight hundred and fifty" (art. 8, sec. 7).
- *First lien.* "In case of the insolvency of any bank or banking association, the bill-holders thereof shall be entitled to preference in payment, over all other creditors of such bank association" (art. 8, sec. 8).

As an illustration of how a hypothetical 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, deposit the bonds with the state auditor, and receive in exchange $50,000 of bank notes that the new bank could issue. Presumably, these notes would get into circulation by being exchanged for other assets (for example, loans, specie, or more state bonds).

The safety of the free bank's notes would depend on how these notes got into circulation. Suppose, for example, that our hypothetical free banker exchanged the $50,000 of bank notes for $40,000 of loans and $10,000 of specie. The balance sheet of the free bank would then look like Table 1. Given the extended stockholder liability and first lien provisions, noteholders would experience no loss even if the value of loans and state bonds fell to zero.

Now suppose, however, that our free banker exchanged the initial $50,000 of notes not for loans or specie but rather for another $50,000 of state bonds for which the state auditor provided another $50,000 of notes. Finally, those notes were used to purchase $40,000 of loans and $10,000 of specie. The balance sheet of this free bank would look like Table 2. Here, even with the extended stockholder liability and first lien provisions in effect, noteholders would suffer a loss if the value of state bonds plus loans fell below $40,000.

Thus, the provisions of the free banking laws were not sufficient to guarantee that free bank notes would always be fully backed. In fact, available evidence suggests that free bank noteholders did suffer losses.

Tables 1 and 2

Balance Sheets of a Hypothetical Free Bank

Table 1 With Perfectly Safe Notes

Assets		Liabilities and Capital	
State Bonds	$ 50,000	Liabilities: Notes Outstanding	$ 50,000
Loans	40,000		
Specie	10,000	Capital	50,000
Total	$100,000	Total	$100,000

Table 2 With Risky Notes

Assets		Liabilities and Capital	
State Bonds	$100,000	Liabilities: Notes Outstanding	$100,000
Loans	40,000		
Specie	10,000	Capital	50,000
Total	$150,000	Total	$150,000

Noteholder Losses and Note Demand

We now explore how large these losses were and why individuals held free bank notes when such losses were possible.

In New York, Wisconsin, and Indiana

For three states where data were readily available—New York, Wisconsin, and Indiana—the intended objective of the free banking laws was achieved: free bank notes there were relatively safe and exchanged close to par.

Evidence to support the claim that free bank notes in New York, Wisconsin, and Indiana were relatively safe is presented in Table 3. The evidence shows that if free bank notes in these states were accepted at par, the losses were very small (that is, the rates of return on these notes were very close to zero). In New York, the loss was 0.03 percent per year or less in all but three of the eighteen years for which we can calculate rates of return. In those three years, the loss was about half a percent per year or less. In Wisconsin, the rate of return was zero in all years except 1860 and 1861, when all of Wisconsin's free bank failures occurred. Indiana experienced losses of about 7.5 and 5 percent per year in 1853 and 1854, but after that, losses were quite small.

Evidence to support the claim that bank notes circulated close to par comes from contemporary bank note reporters. These reporters indicate that free bank notes generally circulated at par in the geographical area near the bank of issue, while outside this area notes were discounted. (For example, notes of Indiana free banks were discounted in Philadelphia.) However, these discounts were small, reflecting the costs that would have to be incurred to redeem the notes in specie.[2]

In Minnesota: A Different Experience

The free banking experience of Minnesota seems to have been quite different from that of New York, Wisconsin, and Indiana. This difference is dramatically illustrated in Table 4, where rates of return on Minnesota free bank notes are calculated under the assumption that they circulated at par. These calculations show that noteholder losses would have been very large: approximately 50 percent per year during early and mid-1859, and between 12 and 18 percent per year during late 1859 and all of 1860.

Such large losses raise the following question: If the public were well informed and knew the risks involved in accepting Minnesota currency, why would they have accepted these notes at par? Specie and notes of banks from other states should have clearly dominated notes of Minnesota free banks. Consequently, Minnesota free

[2]The demand for free bank notes is even less surprising since U.S. coinage laws did not provide for the reminting of underweight coins. As a result, gold and silver coins of this period may also have had a negative rate of return. Jevons (1918, pp. 154–55) points out:

> Some attention must be given to the abrasion which coins suffer in use. In the case of gold coins the loss of metal thus occasioned is of importance, and leads . . . to a gradual depreciation of the currency. As coins pass frequently from hand to hand, the amount of metal abraded will be nearly the same as regards each coin of the same type, and each year of circulation. The loss will be proportional to length of wear.

Jevons (1918, pp. 155–56) then estimates the rate of depreciation on an English gold sovereign (roughly equivalent to a U.S. $5 gold coin) at about 0.035 percent per year and that of a half sovereign at about 0.112 percent per year. Seaman (1850, p. 165, note) estimates the loss on coins of all kinds due to "friction" to be "more than one-tenth of 1 percent annually." A comparison of these rates of loss on specie coins with those on New York, Wisconsin, and Indiana bank notes in Table 3 suggests that in most years these notes were as safe or safer than specie. The same argument was made by King (1983, p. 148) in his evaluation of the riskiness of notes issued by New York's free banks.

Tables 3 and 4

Annual Rates of Return on Free Bank Notes on Selected Dates*
(in percent)

Table 3 In New York, Wisconsin, and Indiana

New York	Nov. 1843	-0.19	Dec. 1853	0
	Nov. 1844	0	Sept. 1854	-0.03
	Nov. 1845	0	Sept. 1855	0
	Nov. 1846	0	Sept. 1856	-0.03
	Feb. 1847	0	Sept. 1857	-0.01
	Mar. 1848	-0.52	Dec. 1858	0
	Dec. 1849	0	Dec. 1859	0
	Dec. 1850	-0.16	Dec. 1860	-0.02
	June 1852	0	Dec. 1861	0
Wisconsin	July 1853	0	Jan. 1858	0
	Jan. 1854	0	Jan. 1859	0
	Jan. 1855	0	Jan. 1860	-0.11
	Jan. 1856	0	Jan. 1861	-11.75
	Jan. 1857	0		
Indiana	Dec. 1853	-7.47	Jan. 1859	0
	July 1854	-4.95	July 1859	0
	Jan. 1856	-0.28	Jan. 1860	-1.05
	July 1857	0	Jan. 1861	0
	Jan. 1858	0	Jan. 1862	0
	July 1858	0		

Table 4 In Minnesota

Jan. 1859	-54.38	Jan. 1860	-12.43
Apr. 1859	-50.88	Apr. 1860	-15.36
July 1859	-49.83	July 1860	-18.04
Oct. 1859	-17.39	Oct. 1860	-15.02

*Rates of return are calculated by multiplying the circulation of each bank by one if it existed one year later and by the redemption rate if it did not, adding these values for all banks, dividing the result by the total circulation, subtracting one, and multiplying by 100.

banks should have had a difficult time circulating their currency.

Yet it appears that Minnesota's free banks did not encounter difficulties circulating their notes. Our estimates of the circulation of Minnesota's free bank notes, based on the state auditor's records, are presented in Table 5. They show that the public may have held up to $360,000 of these notes. Given the losses on these notes, such a large circulation would seem difficult to explain.

The conventional explanation is that the public either were not well informed or were naive in their acceptance of Minnesota notes at face value. According to this view, most of the public believed that the notes were perfectly safe claims to specie either because the law protected their interests or because the bank notes looked like money.[3]

We present a different explanation here—one that does not depend on the public being misinformed or naive. Evidence from state historical records and newspaper reports suggests these notes did not circulate at par but instead at prices well below par—that is, prices reflecting their risky backing. At such prices, the demand for these notes arose because the public treated them as small-denomination securities rather than as money. Before presenting our explanation and evidence, though, we need to briefly discuss Minnesota's free banking law and its use of a certain type of bond, for both play a central role in our argument.

Minnesota's Free Banking Law and Railroad Bonds

In the summer of 1858, the legislators of the newly established state of Minnesota passed a banking law which they hoped would stimulate economic growth while providing a safe and popular medium of exchange. The law, passed on July 26, 1858, was modeled after New York's free banking law, which allowed free entry and unlimited note issue. The law also contained New York's provisions for a 100 percent state bond reserve, par redemption, extended stockholder liability, and first lien. In addition, the assets that Minnesota bankers chose to back their notes had to meet the following market test for valuation:

- *Market price valuation.* The bonds used to secure bank note issues were "to be valued at a rate to be estimated and governed by the average rate at which such stocks [bonds] have been sold in the city of New York" during the six months before they were placed with the auditor (ch. 32, sec. 5).

However, a loophole allowing banks to avoid the market test was created when the law was amended on August 14, 1858:

[3]While Patchin (1917, p. 160) does not state this view explicitly, in reporting the redemption rates on free bank failures in Minnesota he claims these rates reflected the "heavy losses which the bill-holders of these banks were compelled to undergo." Thus, Patchin assumes that the Minnesota public, for some unexplained reason, took these notes at par. Rockoff (1975, pp. 107–10) makes the same assumption in his interpretation of Minnesota's free banking experience.

Table 5
Minnesota's Free Banks (1858–63)

Bank	Estimated Date Bank Closed*	Date of First Issue	Total Issue**	Estimated Circulation†	Backing	Redemption Rate (¢/$)
Bank of Rochester	6/20/59	4/20/59	$ 49,400	$ 36,045	Minnesota 7s	16.25
Bank of Owatonna	7/13/59	3/17/59	35,000	24,680	Minnesota 7s	20.75
Fillmore County Bank	7/25/59	5/28/59	25,000	6,900	Minnesota 7s	20.00
Exchange Bank of Glencoe	7/26/59	11/12/58	80,500	58,725	Minnesota 7s	21.25
Chisago County Bank	9/7/59	3/9/59	33,361	32,286	Minnesota 7s	19.25
Nicollet County Bank	10/14/59	2/4/59	40,000	12,000	Minnesota 10s	35.00
Bank of the State of Minnesota	10/20/59	11/11/58	35,000	15,000	Minnesota 8s, 10s	70.00
Bank of St. Paul	6/22/61	1/15/59	25,000	24,415	Ohio 6s, Minnesota 7s	98.00
Central Bank	6/28/61	6/9/59	23,000	11,400	Minnesota 7s	30.00
Farmers' Bank	—	1/20/59	25,000	25,000	Minnesota 8s	—
La Crosse & La Crescent Bank	—	6/11/59	50,700	24,140	Minnesota 7s	—
Bank of Red Wing	—	6/29/59	25,000	1,533	Minnesota 7s	—
Bank of Chatfield	—	7/5/59	50,000	40,907	Minnesota 7s	—
Peoples' Bank	—	5/27/59	25,905	15,661	Minnesota 7s	—
State Bank of Minnesota	—	4/9/59	25,000	25,000	Ohio 6s	—
Winona County Bank	—	5/18/59	25,000	3,863	Minnesota 7s	—
Total			$572,866	$357,555		

*Date of first bond return after last published balance sheet.
**Calculated from the ledger of the state auditor.
†Total issue minus bonds returned by owners, when available; otherwise, largest circulation reported on a published balance sheet.

- *Current valuation.* The market price valuation provision of the original law was altered so that "public stocks [bonds] issued or to be issued by the United States or the State of Minnesota" were to be accepted as backing for notes at their "current value" although market price valuation was still required for the bonds of other states (ch. 33, sec. 1).

This loophole was used extensively by those banks who backed their notes with so-called *railroad bonds,* state bonds which had a market value well below par. To understand why these bonds were valued below par, we need to examine their history.

On March 3, 1857, the U.S. Congress had passed what appeared to be a very generous land grant bill for Minnesota railroad companies. For each 20 miles of completed railroad line along specified routes, the companies would receive title to 120 adjacent sections of land. Shortly after, Minnesota passed a bill awarding four of Minnesota's railroad companies the contracts on these routes; it then made all of the land awarded to these companies tax-exempt as long as the land remained in their possession.

Railroad proponents were optimistic that after these contracts were awarded, the railroads would be built. Their optimism, however, was short lived. An economic crisis in the summer of 1857 made raising capital very difficult for the railroad companies. The land grants seemed to be worth much less than the railroad proponents had hoped.[4] And since the railroad companies had virtually no other assets except the promise of future revenues from an unbuilt, untried railroad line, investors were hard to find.

The difficulty the railroads had in raising capital to even start building prompted the state to pass in April 1858 what was to be known as the "Five Million Loan." This bill authorized the state to lend up to $5 million to

[4]Folwell (1961, p. 43) cites one company that could not even sell its prospective lands at one dollar an acre.

designated railroad companies. This, however, was no ordinary loan. Since the legislature was prohibited by the state constitution from contracting a debt with any individual association or corporation and since the total indebtedness of the state could not exceed $250,000, some indirect way had to be found to allow state support. The legislature decided it could provide special Minnesota state bonds to the railroad companies—bonds having the "full faith and credit" of the state. This phrase meant very little, however, for the bonds were backed solely by the railroad companies' ability to pay principal and interest. According to Folwell (1961, p. 45), "the state was merely to furnish 'accommodation paper' to wealthy corporations in a pinch for ready cash, taking ample security."

The proponents of this loan went out of their way to assure Minnesotans that they would never be obligated to pay off the bonds provided to the railroad companies. As Folwell (1961, pp. 47–48) reports:

> Sixty-seven members of the two houses united in a published statement pledging themselves "individually and collectively, to vote against any proposition to levy a tax either for the interest or principal of the proposed loan of State credit. We claim to have removed all probable chance of taxation . . . and we shall resist, as one man, any proposition of the kind."

This bill became part of an amendment to Minnesota's constitution and therefore needed to be ratified by the general public. The official vote was 25,023 for and 6,733 against; only in a few rural counties did those against outnumber those for the loan. So were born the "Five Million Loan" and what were known as the Minnesota *railroad bonds* or, since the bonds carried a coupon interest rate of 7 percent, the *Minnesota 7s.* Clearly, the public were well aware of the nature of this bond issue and should have been under no illusions about its ultimate redemption.

That the bond issue was popular in Minnesota did not necessarily mean the bonds sold well in New York or other money centers. Investors outside Minnesota were very skeptical, as they should have been, of the state's role in providing its full-faith-and-credit label to these bonds. More important, they obviously questioned the ability of the railroad companies to successfully build the lines and pay off bondholders. As a result, when the bonds were first issued, they had trouble selling in New York, and according to numerous newspaper accounts, they continued to sell poorly even after Minnesota's governor made a special trip to New York on their behalf in December 1858.[5]

Under the market price valuation provision of the state's original law, Minnesota 7s could not have been used to back free bank notes because the bonds had not been sold in New York. No value for them had been established. Under the current valuation loophole, however, the bonds could be used as backing for notes once a current value was established.

According to the Minnesota governor, the current value of Minnesota 7s was established in spring 1859, when a sale of Minnesota 7s was reported in St. Paul. On March 10, 1859, the private banking company[6] of Pease and Chalfant advertised in the *Pioneer and Democrat* that it had Minnesota railroad bonds for sale—bonds it had purchased for 95 cents on the dollar—that could be used at that price to open a bank. The governor authorized the state auditor to accept state railroad bonds as backing for notes at 95 cents on the dollar, basing his authorization on the Pease and Chalfant purchase price and on the belief that the state must support its own bonds. Only two weeks after the Pease and Chalfant advertisement appeared, the *Pioneer and Democrat* reported that Minnesota 7s had sold (or were hypothecated) in Chicago at discounts of 50 percent and more.

Minnesota Railroad Banks as Mutual Funds: An Interpretation

That railroad bonds could back free bank notes is central to understanding Minnesota's experience during the Free Banking Era. The low rates of return on free bank notes calculated in Table 4 arise primarily from the low redemption rates on notes backed solely by railroad bonds. As shown in Table 5, the first five banks listed, which failed in the summer of 1859 (when the railroad companies failed), backed their notes with Minnesota 7s; the redemption rates on the notes of these banks were no higher than 21.25 cents on the dollar. So what needs to be explained for Minnesota is why people were willing to hold notes that were backed by such risky assets.

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[5]Consider this passage from the *New York Tribune* of December 17, 1858, that was reprinted December 30 in one of the two major St. Paul, Minnesota, newspapers, the weekly *Pioneer and Democrat:*

> The Governor of Minnesota is in town for the purpose of consulting with the managers of the four great Minnesota roads, and assisting them in negotiating the State bonds issued in aid of their undertakings. . . . It will be found, probably, difficult to negotiate in this market, these railroad State bonds, as no provision has been made by law for the payment, and it is unlikely that a new State of only 250,000 inhabitants could pay a sufficient tax, even if the law existed for collecting it.

[6]Private banks, sometimes referred to as *brokers,* differed from free banks in that they were not subject to any banking law and could not issue notes.

The conventional view is that the public were either naive or misinformed. They simply accepted all free bank notes as perfectly safe claims to specie. Our interpretation is that the notes of these five railroad banks, as they were called, were demanded because they were initially issued below par and then exchanged below par, presumably at prices which reflected those of the Minnesota 7s against which they were claims.[7] In effect, we are arguing that the railroad banks were acting as mutual funds by intermediating the large-denomination ($1,000) railroad bonds; the bank notes served as shares in the fund.

The demand for such intermediation is not hard to explain. Considering that in 1859 annual wages of agricultural workers in the United States ranged from $108 to $200 (Bigelow 1862, p. 213), a $1,000 bond even discounted 50 percent would have been an unlikely investment for most individuals. Purchasing the bank notes of railroad banks was the only way the general public could share in the capital gains possible if the railroads were successful and the railroad bonds appreciated in value.

The supply of such intermediation is not as easy to explain. The incentive to supply any intermediation, of course, is the profit to be earned from performing it. The incentive to establish the intermediary in the form of a free bank came from the services which the state freely provided, such as holding the fund's collateral, monitoring its activities, and printing its shares. Nonetheless, establishing a mutual fund under Minnesota's free banking law could have been very costly. The extended stockholder liability, first lien, and par redemption provisions of the law posed potential problems for a bank trying to issue notes below par since they could have created a strong incentive for the holders of such notes to attempt to redeem them for specie at par.

This incentive is illustrated by the balance sheet of a hypothetical railroad bank shown in Table 6. It is constructed under the assumptions that a banker deposited $50,000 par value of railroad bonds, received $47,500 of notes from the auditor in return, and lent the notes to the public. Under Minnesota's free banking law, holders of notes of this bank would have a claim on assets worth $197,500 in nominal value—$97,500 because the first lien provision would give them a first lien on all of the assets of the bank and an additional $100,000 because the extended liability provision would give them a claim to owners' wealth equal to twice the value of capital. Now suppose that this bank initially issued its notes at, say, a 50 percent discount. Then, unless the $197,500 in assets discussed above had a market value of $23,750 or less, there would be an incentive for holders of notes to present them for redemption to receive a certain gain.

In the face of such obvious arbitrage opportunities, how could a free bank operating as a mutual fund survive? We argue that Minnesota's railroad banks were deliberately set up to avoid these problems. First, even though these banks were established by St. Paul brokers who would have a natural advantage in circulating the railroad bank notes, they were established as independent affiliates with out-of-state owners. In this way the assets of the real owners (the brokers) would be protected from the extended liability provisions. Second, the loans made by the railroad banks were made only to the brokers. If these loans were only promises to pay back in notes of the bank and were not secured by any other collateral, the first lien provision would be circumvented and the only assets of the railroad bank would be the state bonds.

We need, however, a third part to our explanation. For even though a free bank that was run as a mutual fund had no assets other than the railroad bonds, what prevented individuals from presenting the notes for par redemption in the hope that the railroad banker might want to avoid a protest and stay in business? We argue that since it was, obviously, not in the banker's interest to redeem notes at their face value when he could only sell them at a deep discount, his best policy was to ignore the par redemption requirement and to make this policy clear to the public. Moreover, if this policy was well known, he would not be risking protest and foreclosure since noteholders would have no incentive to force the issue. If they did, the best they could hope for was partial redemption based on the current market value of the railroad bonds held by the bank for the reasons given above. (Our explanation implies this liquidation value corresponded closely to the market price of the notes.) Thus, noteholders would gain

[7] Under the conventional view, when bonds used to secure free bank notes are selling well below par and the public naively accept all free bank notes at par, bankers can make a financial killing by getting their notes in circulation and then closing their doors and absconding with the bank's assets. Historians have colorfully labeled such banking practices *wildcat banking*. While our previous study (Rolnick and Weber 1984) found little actual evidence of wildcat banking in most states, we did find some evidence consistent with wildcatting in Minnesota. In particular, we found that five of the Minnesota free banks failed and paid noteholders as little as 16 cents on the dollar, secured their notes with bonds selling well below par, and were in business a very short time. In this paper, we take a closer look at the Minnesota experience in general and at these five banks in particular. In our view, which is elaborated below, this closer look indicates that these five banks could not have been wildcats; a necessary condition for wildcat banking—namely, that notes sold at par even though they were backed by bonds which sold well below par—was missing.

Table 6
Balance Sheet of a Hypothetical Railroad Bank
(par values)

Assets		Liabilities and Capital	
State Bonds	$50,000	Liabilities: Notes Outstanding	$47,500
Loans (to Brokers)	47,500	Capital	50,000
Total	$97,500	Total	$97,500

nothing by protesting the notes; they could more easily sell their notes to private brokers for roughly what they could receive from the liquidation sale. In addition, by protesting the notes and forcing the sale of the railroad bonds, they would be foregoing the possible capital gains if the railroads were successful and the bonds appreciated in value.

Empirical Support for the Mutual Fund Interpretation
We now examine the extent to which the available empirical evidence supports this mutual fund interpretation of Minnesota's free banking experience. First, we demonstrate that the balance sheets of the five railroad banks correspond closely to that of the hypothetical bank in Table 6. We also list their out-of-state owners and establish their connections with St. Paul brokers. Then we show that the public were well informed both about the value of the railroad bonds and about which banks used these bonds to back their notes. Finally, we present evidence supporting our conjecture that the notes of these banks were issued below par and priced to reflect their backing.

□ Bank Balance Sheets
To varying degrees, the Bank of Owatonna, the Chisago County Bank, the Bank of Rochester, and the Fillmore County Bank all fit our description of a bank only in business to intermediate railroad bonds. The Exchange Bank of Glencoe differs slightly from these others, but it still fits our mutual fund interpretation.

The Bank of Owatonna. The Bank of Owatonna looks the most like our hypothetical railroad bank. It appears to have been in business solely to intermediate railroad bonds for a well-known St. Paul broker.

The balance sheets in Table 7 clearly reveal the limited nature of this bank's business. The bank opened in March 1859 with $28,000 of state bonds deposited with the auditor. The April balance sheet shows that $24,000 of the notes it received were sent to banks and brokers. No loans or discounts were made. The July balance sheet shows that even though capital and bonds deposited with the auditor increased, the additional notes received were also sent to banks and brokers, not used to discount paper or make loans. The Bank of Owatonna, therefore, was very much like our hypothetical railroad bank.

The Bank of Owatonna also had out-of-state owners while appearing to have been an independent affiliate of a prominent St. Paul private banker. According to a state auditor's ledger, the bank's stockholders at the time of opening were William E. Burlock and John L. Hathaway of Milwaukee, Wisconsin. However, this bank seems to have had very close ties with R. M. S. Pease of Pease and Chalfant, the St. Paul private banking company already mentioned as advertising railroad bonds. On June 23, 1859, shortly before the bank closed, an article in the *Pioneer and Democrat* stated that "the Bank of Owatonna and the Chisago County Bank are the bantlings of Messrs. North and Pease." Furthermore, in July, when Minnesota's auditor first began to exchange state bonds for Owatonna notes, Pease and his cashier, A. S. Babcock, were the first to exchange a large amount of Owatonna notes, which suggests they were the brokers for this bank and perhaps the actual owners.

The Chisago County Bank. The Chisago County Bank was another of the "bantlings" of North and Pease. It, too, looks very much like our hypothetical railroad bank operated as a mutual fund.

The balance sheets in Table 8 reveal the limited nature of Chisago's activities. The bank opened in March 1859 with $34,000 of state bonds. By April, it had been issued $24,800 of notes of which $19,200 were sent to banks and brokers. The rest of the notes were either swapped with other banks or listed as other assets. Only $400 of loans were made. The July balance sheet is even more revealing. It shows no loans, discounts, or specie. The only assets were notes sent to banks and brokers and $2,100 of other assets, presumably the bank's own notes. Capital in July was listed as equal to the stock deposited with the auditor. Chisago was obviously only in the business of intermediating state bonds.

We found a close connection between Pease and this bank. Even though Charles F. Willard of Chicago was listed as the stockholder at the time of opening, the *Pioneer and Democrat* on March 10, 1859, reported that

Tables 7–10

Balance Sheets of Minnesota Railroad Banks

Table 7 Bank of Owatonna

Item	April 1859	July 1859
Assets		
State Bonds	$28,000	$41,000
Due From Banks and Brokers	24,100	33,700
Loans and Discounts	0	0
Bills of Solvent Banks	1,900	0
Specie	500	0
Other	900	1,300
Total Assets	$55,400	$76,000
Liabilities		
Notes Outstanding	$24,000	$35,000
Other	3,400	6,000
Total Liabilities	$27,400	$41,000
Capital	$28,000	$35,000
Total Liabilities and Capital	$55,400	$76,000

Table 8 Chisago County Bank

Item	April 1859	July 1859
Assets		
State Bonds	$34,000	$36,000
Due From Banks and Brokers	19,200	30,200
Loans and Discounts	400	0
Bills of Solvent Banks	2,300	0
Specie	1,900	0
Other	1,100	2,100
Total Assets	$58,900	$68,300
Liabilities		
Notes Outstanding	$24,800	$32,300
Other	9,100	0
Total Liabilities	$33,900	$32,300
Capital	$25,000	$36,000
Total Liabilities and Capital	$58,900	$68,300

Table 9 Fillmore County Bank

Item	July 1859
Assets	
State Bonds	$50,000
Due From Banks and Brokers	4,850
Loans and Discounts	250
Bills of Solvent Banks	17,500
Specie	1,600
Other	800
Total Assets	$75,000
Liabilities	
Notes Outstanding	$25,000
Other	0
Total Liabilities	$25,000
Capital	$50,000
Total Liabilities and Capital	$75,000

Table 10 Exchange Bank of Glencoe

Item	Jan. 1859	April 1859*	July 1859	July 1859 (adjusted)**
Assets				
State Bonds	$25,000	$53,000	$70,000	$69,000
Due From Banks and Brokers	13,200	6,300	12,100	12,100
Loans and Discounts	0	1,100	8,400	250
Bills of Solvent Banks	0	4,000	6,900	6,900
Specie	9,500	7,000	2,100	2,100
Other	2,300	500	400	400
Total Assets	$50,000	$71,900	$99,900	$90,750
Liabilities				
Notes Outstanding	$25,000	$47,000	$49,100	$65,750
Other	0	0	800	0
Total Liabilities	$25,000	$47,000	$49,900	$65,750
Capital	$25,000	$25,000	$50,000	$25,000
Total Liabilities and Capital	$50,000	$72,000†	$99,900	$90,750

*Omits $25,000 of state bonds not deposited with auditor and $50,000 due from directors, capital reduced by that amount.

**Adjusted to be consistent with state bonds deposited and notes issued, as given by state auditor's ledger.

†Total Assets not equal to Total Liabilities and Capital due to rounding

Pease had recently established the Chisago County Bank. Further, Pease is listed by the state auditor as one of the two "bondsmen" for this bank. And, just as with the Bank of Owatonna, shortly after Chisago closed, Pease and his cashier Babcock exchanged a large amount of the bank's notes for state bonds.

The Bank of Rochester. The Bank of Rochester was yet another Pease-sponsored bank. While we found no balance sheet statements on Rochester, the pattern of its note issue in the state auditor's ledger strongly suggests that it operated very much like Owatonna and Chisago.

Rochester was first issued notes on April 20, 1859. At that time, the president and owner of the bank was listed as William Harwood of Joliet, Illinois. According to the April 28, 1859, *Rochester Free Press,* however, Harwood bought $27,000 of Minnesota 7s from Pease in order to establish a bank. The paper went on to say it considered the bank "only a nominal affair." And once again, when the Bank of Rochester failed, Pease and his cashier were the first to redeem a large number of the failed bank's notes for state bonds.

The Fillmore County Bank. The Fillmore County Bank also appears to have functioned as a railroad bond mutual fund with close ties to a St. Paul broker—but not Pease.

Fillmore was opened in late May 1859 by William R. Marshall, an owner of Marshall and Company, which was a St. Paul private banking firm. Fillmore lasted barely two months, but as the one available balance sheet in Table 9 indicates, it was in business solely to intermediate railroad bonds. The balance sheet was reported in July 1859 and listed $50,000 of bonds but only $25,000 of notes issued against these bonds. According to this record, most of the notes had been traded for notes of other banks. However, since most of the Fillmore notes were eventually returned to the auditor by Marshall, we suspect this entry represents notes which did not get into circulation. Only $4,850 was sent to the main office in St. Paul. Fillmore had $1,600 of specie, but a mere $250 of loans and discounts.

Therefore, this bank—like Owatonna, Chisago, and Rochester—was in the banking business in only a very limited way. It was essentially only intermediating railroad bonds, and it presumably was using its main office to help sell at least part of its notes.

The Exchange Bank of Glencoe. The Exchange Bank of Glencoe operated somewhat differently than the other four railroad banks described. While Exchange also appears to have been in business to intermediate railroad bonds, its connection was not with St. Paul brokers but rather with the railroad company whose bonds it was intermediating.

The Exchange Bank was one of the first free banks to operate in Minnesota. It was opened in November 1858 by two brothers, Daniel and Lawrence Graham, who initially deposited $25,000 face value of the Cedar Valley Railroad Company bonds with the state auditor. That Exchange owned Cedar Valley bonds is not surprising. Earlier in the year, [Lawrence] Graham, MacDonald, and Company was hired as an independent contractor for that railroad and was paid with railroad bonds (Memorial of Graham, MacDonald and Company 1860). And so we find that between January and July 1859, the Exchange Bank deposited $45,000 more of the Cedar Valley bonds (using its notes to buy some of these bonds) and by July had issued somewhere between $49,000 and $66,000 of notes.

As Exchange's balance sheets in Table 10 indicate, the bank did make some loans, but lending seems to have been a relatively small part of the business. Selling bank notes for railroad bonds appears to have been Exchange's main activity, and like the other railroad banks, it used brokers to help market its product.[8]

□ *Public Information on Railroad Bonds and Banks*

But what about the risk to the public? Did the public know that railroad banks were only mutual funds? Did they know that such notes were not promises to specie on demand but rather small-denomination securities whose value depended on the success or failure of the railroad companies? The evidence from the auditor records, legislative testimony, and newspaper accounts about these banks supports the contention that the public were more likely than not to have been very well informed about these banks. There was enough bad publicity about the railroad bonds and the banks that used these bonds to secure their notes that even the less well informed should have questioned accepting these bank notes at par.

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[8]That some of the railroad banks held specie reserves and that the amount of these reserves changed over time appears inconsistent with our hypothetical railroad bank of Table 6. Positive and changing specie reserves, however, do not necessarily imply either the intent of a railroad bank to redeem or the actual redemption of notes for specie at par. We suspect that the changes which did occur were in fact due to transactions with St. Paul brokers, not with noteholders. Further, a comparison of the balance sheets of the railroad banks with those of other Minnesota banks of that time (some of which also had their notes backed with Minnesota 7s) shows that the other banks on average had higher specie/note ratios and made virtually no loans to brokers. Thus, the railroad banks appear to be quantitatively different from the other banks of that time, and different in a way consistent with our argument that they behaved as mutual funds.

Minnesota's newspapers closely followed the fate of the railroad bonds, beginning with the governor's trip to New York in December 1858. Articles discussing sales of bonds in New York appeared in the *Minnesotian*, the other major St. Paul newspaper, on January 4 and February 8, 1859. The *Pioneer and Democrat* reported on February 10, 1859, that "at this writing nothing definite has been received relative to the sale of our State Railroad Bonds in New York."

As it turned out, the newspapers never could report any New York sales. In addition, the *Minnesotian* ran an article on March 12, 1859, by J. Jay Knox, a St. Paul banker, who quoted from the *Chicago Press and Tribune* of February 17, 1859, that "some varieties of [railroad bonds]... are tho't to be worth not more than fifty cents on the dollar." The *Pioneer and Democrat* on March 24, 1859, also reported how slightly Chicago investors valued Minnesota 7s: "The bonds have been frequently pledged in Chicago at fifty cents on the dollar." On March 30, 1859, the *Minnesotian* again questioned the value of the bonds by again quoting the Chicago press: "Our readers remember that the same bonds are now being hawked around the Eastern cities without finding purchasers at 50 percent discount."

Therefore, from the beginning the public appear to have been well informed about the nature of the railroad bonds: The $5 million loan was ratified in a well-publicized election. The state's obligations were debated and clarified in numerous newspaper accounts. The railroad companies' difficulty in marketing their bonds was publicly recorded and commented on. And the value of these bonds was questioned soon after they were issued and well before most of the railroad banks opened.

The public also knew which banks were using railroad bonds to secure their notes and which were using safer bonds. Both the local and the St. Paul press regularly reported openings of free banks. These reports included the type of bond the bank had used to secure its notes, the nominal value of its capital, and sometimes the names of its officers and owners. More important, newspapers warned the public repeatedly that notes secured by railroad bonds were not safe and should only sell at a discount.

For example, the Exchange Bank of Glencoe's activities were covered by both the St. Paul press and the local community paper. When the Exchange Bank began to issue notes in November 1858, the financial section of the *Pioneer and Democrat* reported how its notes had different backing than those of the other recently opened free bank, the Bank of the State of Minnesota (which had deposited Minnesota 8s—bonds fully backed by state taxes, unlike Minnesota 7s—with the auditor). Further, on January 29, 1859, the *Glencoe Register* published the Exchange Bank's quarterly report that had been submitted to the state auditor. The report included the $25,000 in state railroad bonds backing the bank's $25,000 of notes and listed a high percentage of its assets as due from banks and brokers. In mid-March, both papers reported that the owners of Exchange had increased the bank's capital and note issue $25,000 by depositing this amount of railroad bonds with the state auditor.

The press also identified the four railroad banks that opened in the first half of 1859. The *Pioneer and Democrat* reported on March 10 and again on March 17, 1859, that the Chisago County Bank had been opened by Pease with Minnesota 7s securing the note issue. On April 16, 1859, the *Minnesotian* published an article related to the Bank of Owatonna which included the amount of Minnesota 7s deposited with the auditor. On April 28, 1859, the *Rochester Free Press* reported that Pease had sold $27,000 of Minnesota 7s to William Harwood to establish the Bank of Rochester. And the *Pioneer and Democrat* reported on May 5, 1859, that the Rochester bank had $30,000 of Minnesota 7s securing an issue of $23,000 notes. The same article listed the capital and notes in circulation of the existing Minnesota banks, including Owatonna, Chisago, Rochester, and Exchange. The opening of the last railroad bank, the Fillmore County Bank, was noted on June 2, 1859, in the *Pioneer and Democrat*, which reported it to have capital of $25,000 of notes secured by Minnesota 7s.

Some of the newspaper accounts, especially those in the *Pioneer and Democrat*, supported these banks and viewed the Minnesota 7s as ample security for note issue. They tended to blame the Eastern press and a group of St. Paul brokers for trying to discredit what they believed was a sound currency system.

Nevertheless, the free banks that secured their notes with railroad bonds got enough negative attention from the press to make the public at least suspect that such banks were not as safe as other free banks in Minnesota. *Willard & Morris' Bank Note Reporter* of Chicago, for example, warned its readers about Minnesota's banks in an article that the *Pioneer and Democrat* passed on to its readers on December 9, 1858, well before most of the railroad banks even opened.

> It was feared that the [Bank of the State of Minnesota] would be started based on the Railroad Bonds, but we doubt if any one would be foolish enough to expect currency to circulate based on such security as that. We

warn the people of Minnesota against it, if they do not wish to suffer the evils of a depreciated and dangerous currency. If the Auditor of Minnesota will exercise a little discretion which as an officer he must have the power to do, and will deny admittance to any but first rate securities, there is no reason why Minnesota currency should not be as good as Illinois and Wisconsin.

At the same time, the *Pioneer and Democrat* reported that *Thompson's Note Detector* of New York had also warned its readers against any Minnesota currency based on railroad bonds. Further, on March 17, 1859, shortly after the Chisago County Bank had opened, the *Pioneer and Democrat* again reported that Chicago brokers were critical of notes secured by Minnesota 7s, and in the *Minnesotian* on March 12, J. Jay Knox argued that the railroad bonds should not be valued by the auditor at more than 75 cents on the dollar if the state was to have a safe currency.

A case can be made, therefore, that through a plethora of newspaper coverage the Minnesota public were warned well in advance that bank notes secured by railroad bonds were worth far less than their face value. They were warned by brokers and financial interests in New York and Chicago, as well as those in their own cities. The warnings were very much like what the *Rochester Free Press* said about its local bank: it was but a "nominal affair."

□ *Railroad Bank Note Prices*

Since railroad banks were only nominal affairs and since the public appeared to be well informed, notes backed by railroad bonds should have been discounted. Although we have not been able to find explicit currency prices, we have found substantial circumstantial evidence that railroad bank notes were generally exchanged below par, presumably because of their risky backing.

Banks securing their notes with railroad bonds seem to have gotten their notes into circulation by exchanging them for more railroad bonds or for loans from St. Paul brokers. In either case, it can be argued that in the first round these notes were circulated below par. When the notes were used to buy more railroad bonds, they presumably exchanged for the nominal price rather than the market price, since it was only the nominal value of the bonds which backed the notes. Thus, in this case the notes were discounted by the ratio of the market price to the nominal price of the bonds. When the notes were loaned to brokers, the loans were presumably only secured by promises to pay back the bank notes. Notes circulated in this way were obviously discounted by the same amount as those used to buy more bonds.

Thus, at least in the first round when notes entered circulation, they do not seem to have been valued at par. They appear to have been sold by bankers for assets of equal real value. But, what about later rounds? Did the initial noteholders find unsuspecting buyers? The evidence suggests that they did not; in the second and additional rounds, railroad bank notes appear to have been discounted heavily.[9]

According to a report to the Minnesota Senate by a special committee on railroads and railroad grants, dated February 3, 1860, railroad contractors had been paid with state railroad bonds at prices well above the actual cost of their services. Engineers reporting to this committee estimated that the cost of grading roads was no more than $2,500 per mile. Yet, based on the number of bonds paid to these companies, the committee concluded that the companies were paid about $4.50 of bonds for every $1.00 of road graded; that is, bonds had been used as payment at about 22 percent of their nominal value.

As previously discussed, contractors for the Cedar Valley Railroad Company were paid in Minnesota 7s, which they in turn sold for Exchange Bank of Glencoe notes. According to the special committee's report, Exchange notes were then used to pay the railroad workers. The question then becomes, did the workers willingly accept notes instead of specie at going wages, or did the wage rate get adjusted to reflect the means of payment? While we have been unable to find an explicit wage series to answer this question, we have found evidence suggesting that the wages of workers were adjusted accordingly.

Some evidence on wages is found in the special committee's report, which contains this statement on railroad salaries (Minnesota Senate 1860, p. 344): "The companies since the passage of the loan amendment... have paid extravagant salaries to incompetent or inefficient officers." So at least some salaries were quite high, but very likely they were only high in nominal terms. That is, officers were being paid in railroad currency, and the salaries were adjusted as we suspect. If officers' salaries were adjusted, other wages and

[9]The memorial of Ferdinand Becker and others (Minnesota House of Representatives 1860, pp. 407–8), whose authors were "holders of a large amount of the circulating notes of the Exchange Bank of Glencoe," reports that the owners of this bank "palmed off" a great amount of their notes "upon an unsuspecting people." However, no supporting evidence is offered, and the authors of this memorial were clearly a group of individuals with much to gain if their claim was accepted.

salaries also may have been. The inflated construction costs are consistent with this interpretation.

Other evidence on wage rates is the lack in the Minnesota newspapers of any criticism of the use of railroad currency to pay railroad workers. Even if the workers thought this money was good as gold, the press knew differently. The *Minnesotian,* in particular, had been one of the strongest critics of the $5 million railroad loan and the railroad banks. If workers had been so naive as to accept these notes at par—an acceptance resulting in a windfall for the railroad contractors—surely the *Minnesotian* would have exposed the scam. And surely workers, eventually realizing they had been grossly underpaid, would have complained. But instead, neither this newspaper nor the *Pioneer and Democrat* mentioned a scam or complaints by railroad workers, who continued to grade roads well into the summer of 1859. This silence is consistent with a wage to railroad workers that was adjusted to the means of payment.

Further evidence suggests that railroad workers were not alone in heavily discounting free bank notes secured by railroad bonds; they were joined by the public at large. We know that most of the notes went from the issuing bank to a broker in St. Paul. And, again, while we do not have explicit prices, the evidence we do have strongly refutes the idea that brokers sold these notes for anything close to par.

As early as April 1859, a series of articles in the *Minnesotian* revealed the status of railroad notes. These notes were reported to be difficult to redeem at "reasonable rates" from brokers. For example, M. E. Ames, a St. Paul attorney, reported his experience on April 11 and 16, 1859. He said he had received $200 of Owatonna notes from a "respectable Banker of this City." (Ames did not say, however, what he paid for these notes, so that it cannot be assumed that he purchased them at par.) Trying, then, to purchase $125 of exchange on New York (New York bank notes), he said he could not find a bank that would make such a trade "at any price." Since New York exchange was roughly selling at par, the implication is that Owatonna money was selling for less than 63 cents on the dollar.[10]

Now if St. Paul brokers were heavily discounting these notes, then merchants, workers, and the rest of the public probably were too. More important, St. Paul brokers were discounting railroad notes in mid-April 1859, before more than half of the railroad notes had even been issued. Thus, brokers selling these notes after March were unlikely to have passed off very many of them as a safe currency.

By the time all the notes had been issued, the public should have been aware that these railroad bank notes were not safe. Consider the following report dated May 31, 1859, which appeared in the *Pioneer and Democrat* two days later:

> The notes of Minnesota country banks are freely offered by purchasers of goods, but as such notes are issued at inaccessible points, and, with one or two exceptions, are not convertible into coin or exchange in St. Paul, except at ruinous rates of discount, Merchants are very loth to part with their goods for funds which cannot be used, and thus trade is temporarily seriously affected.

Two Other Supporting Arguments

For those readers who remain unconvinced by the above evidence supporting our interpretation of Minnesota's free banking experience, we offer two additional supporting arguments. The first is related to the timing of the railroad bank closings. The railroad banks that had opened by the spring of 1859 all closed shortly after the railroad companies failed in the early summer of 1859; other free banks stayed open well past the summer of 1859. The timing of the railroad bank closings is consistent with our mutual fund interpretation. Once the railroad bond outcome was realized, the fund no longer had a reason to exist, and so it was liquidated.

The second argument is related to the ultimate payoff to noteholders. On June 1, 1860, Minnesota's state auditor published in the *Pioneer and Democrat* the prices at which he would redeem railroad notes. It was a very short announcement simply stating that the auditor of the state of Minnesota would redeem the bank notes of the Bank of Rochester, the Exchange Bank of Glencoe, the Bank of Owatonna, and the Fillmore County Bank at the very low rates of roughly 20 cents on the dollar. Surprisingly, in that issue and subsequent ones of the *Pioneer and Democrat,* we could not find even one feature story, editorial, letter to the editor, or other reference to the auditor's action. No one criticized the auditor or the governor of Minnesota. No one asked for the bank owners to make good on their legal liabilities. And no one sued. In other words, there was no outcry from the public, the ones who had supposedly been fooled into accepting railroad notes as a safe currency. If railroad notes were actually taken at

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[10] Ames eventually took his notes to Pease who, as Ames knew, was the Owatonna broker. With some difficulty, Ames persuaded Pease to buy the notes for St. Paul city scrip, but could get neither New York exchange or gold out of Pease.

par by an unsuspecting public, this silence is very hard to explain.

A Caveat

The evidence we have presented is consistent with our mutual fund interpretation of the Minnesota free banking experience. Nonetheless, we recognize that we have not proven our case. Since we have been unable to uncover definitive bank or broker records showing whether or not the notes of railroad banks were initially issued at par and whether or not the railroad banks redeemed outstanding notes for specie at par until they closed, our interpretation must remain somewhat speculative. And it would have to be rejected if future research were to uncover evidence that the railroad bank notes were initially issued at par, that railroad banks redeemed their notes for specie at par, or that Minnesota railroad workers in 1859 were paid wages in railroad bank notes which were equivalent to wages paid in specie or good bank notes elsewhere.

Summary and Implications

We have examined the question of why free bank notes were demanded even when they appear to have been dominated by gold and silver coins. The conventional answer is that the public were either naive or misinformed. They accepted free bank notes at par even when the notes were risky.

We proposed an alternative answer that assumed the public were well informed and found that the empirical evidence from four free banking states was generally more consistent with it. Specifically, we argued that the demand for free bank notes depended on the expected value of their backing. We found that in New York, Wisconsin, and Indiana the expected value of the backing was sufficient for free bank notes to circulate at par, which they did. In Minnesota we found that the backing for the notes of the so-called railroad banks was very poor and that contrary to the conventional view, these bank notes exchanged well below par, being treated as small-denomination securities.

We suspect that the free banking experience of New York, Indiana, and Wisconsin was the rule and that the experience of Minnesota was very much the exception.[11] That is, most free banks were intended to be banks, not mutual funds. They started with notes fully covered by assets, issued their notes at par, and redeemed their notes at par in specie on demand. They failed when they stopped redeeming notes due to a fall in the value of their assets and it was in the noteholders' interest to protest the notes and close the bank.

Nonetheless, our finding of an exceptional experience in Minnesota is important, for regardless of how pervasive the mutual fund organization was during the Free Banking Era, the implications go beyond this period. Clearly an incentive exists for the public to obtain information on the backing of any liability a bank should issue. They should not naively accept a bank liability at par. We find this was true in the Free Banking Era and suspect it has always been true. To assume otherwise—that is, to assume the public ignore the backing of bank liabilities—will likely lead to serious misinterpretation of any banking arrangement.

[11] Michigan may provide another case of free banks acting as mutual funds rather than banks. In Michigan (a state whose historical bank records we were unable to examine closely because most had been destroyed by fire) an amendment to the free banking law of 1837 was passed less than three months after the law was enacted. The amendment suspended the requirement of par redemption in specie and thus legally turned all of Michigan's free banks into mutual funds before they even went into operation. The extent to which Michigan's free bank notes were initially discounted, though, is unknown.

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