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Are Small, Rural Banks Credit-Constrained? A Look at the Seasonal Borrowing Program in the Eighth Federal Reserve District

Michelle A. Clark

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**ARE SMALL, RURAL BANKS CREDIT-CONSTRAINED?
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EIGHTH FEDERAL RESERVE DISTRICT**

Michelle A. Clark¹

Introduction

A traditional belief about rural credit markets and agricultural credit in particular is that small rural banks do not have access to sources of funding or opportunities for lending outside their immediate communities. If this story has merit, and rural banks' dependence on farm loans produces sharp seasonal swings in loan demand, the inability to tap national credit markets could be associated with relatively larger holdings of liquid securities by rural banks and relatively fewer loans provided to rural borrowers. The Seasonal Borrowing Program (SBP), one of three Federal Reserve System discount window programs, was designed to address this potential credit allocation problem by permitting banks with strong seasonal patterns in their loans or deposits to obtain funds from Federal Reserve Banks.

Although highly popular with program participants, critics have questioned both a key feature of the SBP and the justification of the program itself. On the one hand, some have criticized the below-market rate of interest (the discount rate) charged on seasonal borrowings, which provides a subsidy to banks using the program. Even if the availability of credit is a problem, they argue, there is no justification for providing it at a subsidized price as well. Other critics, citing the tremendous innovations in financial markets since the program began in 1973, doubt that local businesses still are credit-constrained because rural banks continue to face funding constraints. The volume of criticism has risen in recent years as the number of banks borrowing from the discount window and the total amount of credit extended have increased markedly.

This article first defines the seasonal borrowing program, and then examines recent program usage by Eighth Federal Reserve District banks. This sample is an interesting group to study because the District has a large number of agricultural banks and, in some years, Eighth District banks have accounted for as much as one-third of all borrowings under the SBP. The third section presents a brief discussion of the subsidy issue and is followed by an analysis of program necessity. Selected balance sheet ratios of Eighth District program users are compared with those of comparable-sized non-users to discern any meaningful operational differences between these groups. In addition, the operational characteristics of banks before

¹Preliminary--please do not quote without the author's permission. Michelle A. Clark is an economist at the Federal Reserve Bank of St. Louis. Thomas A. Pollmann provided research assistance. The views expressed here do not necessarily reflect those of the Federal Reserve Bank of St. Louis or the Federal Reserve Board.

and after using the SBP are examined for expected changes from program usage. These results are then compared with county averages in the before and after periods to mitigate the effect of location on group comparisons.

Defining the Program

The Seasonal Borrowings Program was established in April 1973 to help Federal Reserve member banks meet seasonal funding requirements. Prior to the program's inception, banks with strong seasonal fluctuations in loans relative to deposits found it necessary to hold a large proportion of liquid assets, such as U.S. Treasury securities, in their portfolios to meet these seasonal swings. Because of their small size and location, rural banks were believed to be unable to tap sufficiently national money markets, such as the federal funds market; that reliance on local sources alone (i.e., retail deposits) constrained their ability to finance loans.²

Although the program has undergone a number of changes since 1973, the basic structure remains the same.³ To qualify, banks must be small (less than \$500 million in total deposits) and able to demonstrate sizable and recurring seasonal swings in net funds availability, defined as total deposits less total loans. After satisfying a portion of the seasonal need from their own resources, eligible banks may borrow funds from their local Federal Reserve Bank to bridge the remaining gap for up to nine months each year, paying the basic discount rate. All seasonal borrowings are collateralized and most have weekly or 30-day maturities. Program users are permitted to sell federal funds while they are borrowing seasonal credit, as long as net fed funds sales (fed funds sold less fed funds purchased) do not exceed the bank's normal operating pattern.⁴

²See Stevens (1990) for details on the historical rationale for the program.

³In 1980, for instance, the program was open to nonmember institutions as a result of the Monetary Control Act. The amount of seasonal loan funding that banks are required to meet from their own resources (the deductible) and the maximum size of an eligible institution also have changed a number of times over the years. See Appendix A of "Review of the Seasonal Credit Program," Discount Polity Group of the Board of Governors of the Federal Reserve System, October 26, 1990, for more detail.

⁴A related indicator of a rural Bank's dependence on local investments is its volume of sales in the federal funds market. That is, with limited local lending opportunities, small rural banks may find the federal funds market to be their best alternative use of deposits. While this behavior would be counter to the logic of the SBP, the program permits banks, simultaneously, to sell fed funds and borrow from the discount window. According to Melichar (1980), the Federal Reserve Board decided in 1976 to allow the sale of fed funds while borrowing seasonal credit because most small banks had become year-round sellers of fed funds. A greater proportion of these banks were keeping secondary reserves in fed funds

Seasonal borrowings generally follow the agricultural credit cycle. The amount of seasonal borrowings outstanding typically rises during the summer when crops are planted and reaches a peak in September when crops are harvested; borrowings outstanding generally fall substantially during the fall and winter as farmers receive payments for their crops and begin to repay loans to their banks.

Program changes since the mid-1970s have greatly expanded the number of banks that qualify for seasonal credit as well as the time frame for borrowing and the size of seasonal lines that qualifying banks can obtain. For example, the number of banks participating in the program rose from 205 in 1973 to 616 in 1988 while the amount of average weekly credit outstanding rose from \$89 million to \$235 million. These liberalizations in program restrictions, on net, however, seem to have increased aggregate seasonal borrowing by increasing the number of borrowers rather than by increasing the amount of credit extended to each borrower; average borrowing per institution has remained almost constant over time.⁵

Still, actual program usage remains low relative to the number of banks potentially qualified to use it. Stevens (1990), for example, estimates that in 1988, when the level of seasonal borrowing reached its peak, less than 20 percent of eligible banks sought and obtained seasonal credit. This estimate is supported by data from Eighth District banks, which are described and analyzed in the next section.

Seasonal Borrowings in the Eighth District

Because the SBP is designed for relatively small banks in areas dominated by a seasonal industry, such as agriculture or tourism, the midwestern Federal Reserve Districts--Chicago, Kansas City, Minneapolis and St. Louis--host the vast majority of program users. In the 1980s, Eighth District (the St. Louis District) banks were among the SBP's largest users of seasonal credit. The amount of credit extended to District banks has risen substantially in recent years as the number of banks eligible for the program and the marketing of the program by discount window officers have increased. Since 1984, the St. Louis Credit Office has maintained a data base on all District institutions applying for discount window credit, including seasonal credit. Weekly data from both the assets and liabilities sides of the balance sheet are available, as are data on the amount of federal funds purchased and sold. From these data, weekly aggregates can be compiled to assess the trends in usage and the typical borrower profile for District seasonal borrowers during the period 1984 through 1990.

rather than Treasury bills at the same time their overall liquidity was declining.

⁵Though the level of borrowing peaked in 1988, peak usage occurred in 1989, when 721 banks received seasonal borrowings. The amount of credit outstanding reached an all-time high of \$513 million during the week ending July 26, 1989. Program usage subsequently declined in 1990 and 1991.

In 1984, the first year for which complete weekly data on seasonal borrowers are available, 42 District banks participated in the program, borrowing a total of \$628 million over the course of the year (see table 1). The number of banks using the program steadily increased through the rest of the decade. By 1988, the number of participants had more than tripled to 137, and the amount of credit extended rose to almost \$3 billion. The number of borrowers peaked at 151 in 1989, although the total amount of seasonal credit advanced was almost a billion dollars lower than in the previous year. The average amount of borrowings outstanding per week rose from \$18.8 million in 1984 to \$94.9 million in 1988.

Some descriptive statistics for these banks are shown in table 1. The average loan-to-deposit ratio for seasonal borrowers showed a great deal of intra-year variability during the seven-year period being studied. With a range of as many as 19 percentage points between its minimum and maximum value, the loan-to-deposit ratio typically climbs several percentage points during the peak period of borrowing (defined in table 1 as a 5-week period around the week where borrowings outstanding peaks), as banks funnel a great proportion of these borrowings into loans. The intra-year relationship between seasonal borrowings and the loan-to-deposit ratio for 1989 is illustrated in figure 1. This pronounced seasonal pattern and the close correlation between the loan-to-deposit ratio and seasonal borrowings both are consistent with one justification for the program: a class of small rural banks with strong seasonal loan and deposit flows does exist.

A number of other characteristics of seasonal borrowers are consistent with the rationale and current application of the program. The ratio of agricultural production loans to total loans, for example, is not only higher for seasonal borrowers than non-borrowers, but also shows considerably more intra-year variability. In 1989, the agricultural loan ratio for program users showed a range of almost 5 percentage points compared with the 1.3 percentage point range for nonusers. Evidence of a seasonal shortfall of funds can also be gleaned from data on fed funds purchases and sales data. Fed funds purchased tend to be higher and fed funds sales tend to be lower during the peak period of seasonal borrowing than their average values over the course of the year, an indicator that banks face a liquidity shortfall in the summer months.

The existence of seasonality, however, is not by itself a justification for the SBP; lack of sufficient access to national credit markets for funding is a necessary consideration as well and this can be checked, in part, by investigating what banks do with their funds. In particular, as noted earlier, the activities of these banks in the federal funds market may offer some clues in this regard.

District program users substantially increased the amount of fed funds purchased and sold over the seven-year period, with the gap between the two series narrowing to almost zero in 1989. Program users, in aggregate, moved from a position of net purchasers of fed funds from 1984-1989 to net sellers of fed funds in 1990. The change in position from a net purchaser to a net seller is at least suggestive of a declining credit constraint for seasonal borrowers over time, especially when it occurs during the peak period of borrowing and

coincides with a substantial decline in seasonal credit extended in 1990.⁶

The Subsidy

One of the more controversial aspects of the SBP has been the explicit interest rate subsidy available to program users. By charging the discount rate on seasonal loans, the Federal Reserve System provides program users with a cheaper source of funds than the price users would pay in the market (the fed funds rate). System officials have estimated that the amount of seasonal credit outstanding increases by \$50 to \$100 million for each percentage point increase in the spread between the two rates.⁷ Although the subsidy itself is relatively small (less than \$9,000 per borrower in 1989), program administrators are nonetheless concerned about the signal the subsidy sends to the market. The SBP, after all, was set up to help ensure the flow of funds to the agricultural community, not to subsidize a particular class of borrowers.

There also is concern that some institutions may exploit the subsidy by borrowing seasonal credit at the discount rate and then lending those funds at the (usually) higher fed funds rate. Banks using the SBP are given a net fed funds sale limit which they must adhere to while they are borrowing from the window, and the vast majority of program users do not violate their limits. Yet, during a six-month period in 1989, almost 60 percent of Eighth District program users exceeded their net fed funds sales limit at least one week, and about a third had consecutive-week violations. The proportion of program users who violated their limits each week in that period is illustrated in figure 2.

Violations can occur for a number of reasons and not all incidents should be interpreted as program abuses. For example, a bank can be identified as having exceeded its limit on a weekly basis, when a day-by-day comparison would show net sales of fed funds occurred prior to the extension of seasonal credit. Violations also can occur when fed funds sales and discount window borrowings are handled by different employees, who may not be aware of what the other is doing. Still, because there is concern that some violations occur because of the potential for abuse built into the program, discount window officers have set up systems to monitor compliance with the net fed funds sales and net investment (securities held plus net fed funds sales) limits.

⁶The decline in borrowing is also consistent with a change in the program which removes the subsidy (the spread between the discount rate and the federal funds rate) to borrowers, which is discussed in the next section.

⁷See Board of Governors (1990), pp. 17-18. See also Melichar (1980) and Stevens (1990) for other estimates of the positive relationship between the spread and the level of seasonal borrowings.

In light of these concerns, the Board decided in 1990 to eliminate the interest rate subsidy to users of seasonal credit. Beginning in January 1992, program participants will be charged an interest rate related to the moving average of the federal funds rate and the 90-day CD rate. Absent changes in loan demand, the removal of the interest rate subsidy should have no significant effect on the level of seasonal borrowing, if qualifying banks are truly credit-constrained. An examination of the continuing necessity of the program follows.

Is the SBP Still Needed?

Financial markets have changed drastically since the SBP was started in 1973. Most of these changes have given banks, including rural banks with seasonal funding needs, greater access to a wider selection of funds. For example, the removal of interest rate ceilings and the introduction of new deposit instruments, such as NOW accounts and MMDAs, have allowed banks to be more competitive with other financial institutions in bidding for funds. The interbank funding market--the fed funds market--has expanded to include a number of smaller banks on both the purchase and sales sides, including the great majority of banks that now qualify for seasonal credit. Changes in market structure, especially the absorption of independent banks into one or multi-bank holding companies, together with growth in the correspondent bank network, have provided additional sources of liquidity to small banks, both urban and rural. All of these changes have served to make rural banks less dependent on local sources of funds in meeting loan demand.

In addition to these changes affecting rural banks, the expanded availability of agricultural credit from non-bank sources such as credit unions, savings and loans, agricultural cooperatives, the Farm Credit System and farm equipment companies, has diminished the significance of local banks in meeting the funding needs of rural enterprises. Thus, whether looking at the rural lender or borrower, financial innovations during the past 18 years suggest at least some relaxation in any constraints that might exist and lead to questions about the basic rationale for the SBP.

Support for the continuation of the program is based on the belief that small, rural banks, while having more access to funds, still are unable to obtain the amount of funding needed to satisfy peak loan demand.⁸ Seasonal borrowers, therefore, use the program because they face credit constraints in the market for funds. Testing this credit constraint hypothesis directly is not possible. To do so would require information on a bank's success in obtaining the volume of funds needed from its funding opportunity set, data which are unobservable. Nevertheless, it is possible draw inferences about the nature of a credit constraint by observing whether a borrowing bank's operating characteristics are consistent with behavior the SBP is designed to address.

⁸See Board of Governors (1990), Appendix B, p. 8.

A Simple Model of Credit-Constrained Banks and the SBP

Banks ration credit by setting an interest rate and making loans until they exhaust local loan demand or reach their limit, based on core deposits (a given amount), access to purchased funds and degree of risk aversion. The SBP presumes some banks are credit-constrained by a lack of core deposits or by insufficient access to purchased funds. The objective of the SBP is to provide additional funds to banks that would increase their local lending in certain periods of the year if they had access to additional funds, i.e., if they were not credit-constrained. Providing access to seasonal borrowings implies participating banks would be able to hold lower levels of liquid assets and higher levels of loans throughout the year. Target banks would have relatively high and variable loan-to-deposit ratios at certain times of the year. The credit constraint hypothesis simply implies that, if all banks had the same access to purchased funds, those constrained by a lack of core deposits would have higher ratios of purchased funds to total liabilities and lower ratios of fed funds sold to assets.

Given this simple model and data from borrowing and non-borrowing banks' balance sheets, one can test whether seasonal borrowers are different from non-borrowers and whether seasonal borrowers behave as expected after using the program. Selected 1989 annual average balance sheet ratios for Eighth District seasonal borrowers are compared with those of non-borrowers in table 2.⁹ In general, the composition of program users' assets and liabilities differs from that of their non-borrowing peers, defined as District banks with total deposits of less than \$500 million. Seasonal borrowers have significantly higher ratios of loans to deposits (65.7 percent vs. 58.1 percent) and have a higher portion of their loan portfolio invested in agricultural production loans (11 percent vs. 7.8 percent) than do non-borrowers. As a result, seasonal borrowers are less liquid than their peers, as measured by the ratios comparing fed funds and securities to assets and deposits. In addition, the higher purchased liabilities ratios for seasonal borrowers are consistent with the notion that they have a funding need that cannot be met by local core deposits.

As illustrated in table 3, the differences between the two groups of banks widen when ratios are examined during the peak period of seasonal borrowing, which roughly corresponds with the third quarter of the year. The spreads between various loan ratios for the two groups widen during the third quarter, as seasonal borrowers invest more of their assets in loans relative to non-borrowers. For example, the spread between the loan-to-deposit ratios rises from 7.6 percentage points on an annual basis to 8.9 percentage points during the peak period. Similarly, the spread between the agricultural loan ratio for the two groups widens from 3.2 percentage points to 4.8 percentage points. Non-borrowers also experience boosts in the loan-to-deposit and agricultural loan ratio in the third quarter, and corresponding declines in measures of liquidity, evidence that they too face seasonal loan demand. On an annual as well as third quarter basis, seasonal borrowers had higher proportions of business

⁹The data are taken from the quarterly Reports of Condition filed by all U.S. commercial banks with their primary regulator.

(C & I) loans and lower proportions of agricultural loans secured by real estate than non-borrowers.

Another way to test the credit constraint hypothesis indirectly is to examine whether banks' operating characteristics change in the expected way after borrowing. "Before" and "after" balance sheet ratios of 42 District banks that borrowed in both 1988 and 1989, but not in 1986 or 1987, are presented in tables 4 (annual data) and 5 (third quarter data). Banks that borrowed seasonal credit do record higher loan-to-deposit ratios after using the program, on both an annual and peak period basis, as they became less liquid. On an annual basis, the loan-to-deposit ratio rose from 59.1 percent to 64 percent after banks began using the program. The change is even larger during the third quarter, when the loan-to-deposit ratio rose from 61 percent to 67.4 percent.

Surprisingly, the ratio of agricultural loans to total loans is not significantly different before and after borrowing. For example, on an annual basis, the agricultural loans to total loans ratio fell from 9.9 percent before borrowing to 9.7 percent after using the SBP, though the difference between the two means is not significantly different from zero. Although the agricultural loan ratio is higher in the third quarter for these banks than its annual average, the difference between its pre-borrowing and post-borrowing average also is not significantly different from zero. Rather, the "other loans" to total loans ratio rises from 61.8 percent to 62.9 percent (on an annual basis), a ratio which includes non-agricultural real estate and consumer loans. This change, while reflecting an increase in total lending, nonetheless would appear to be inconsistent with the program's desired effect of increasing the flow of funds to rural enterprises.

A decline in agricultural lending in general over the period 1986-1989 may partially explain why the agricultural loan ratio did not increase after banks became seasonal borrowers. To investigate that possibility, the before and after agricultural loan ratios of seasonal borrowers were compared with their county means in the two periods. In approximately one-half of the cases, the agricultural loan ratio declined at the borrowing bank and at the county level. Six of the 42 banks had declines in their agricultural loan ratio while the average ratios for the banks in their respective counties increased. Eleven banks experienced increases in their agricultural loan ratio when the county ratio declined, and another five banks' ratios increased when the county ratio increased. One could argue that about one-half of seasonal borrowers merely followed the trend in their local economic areas by reducing agricultural lending when other banks did; yet, in 14 of those 20 cases (or one-third of the total sample), the decline in the the agricultural loan ratio at the borrowing bank exceeded the decline at the county level. At 28 borrowing banks, the post-borrowing agricultural loan ratio was less than the county average agricultural loan ratio.

Another explanation for no change in the agricultural loan ratio before and after borrowing is the composition of the borrowers themselves. Seven of the 42 borrowing banks with agricultural loan ratios of less than 2 percent are located in counties (all in Missouri) with agricultural loan ratios of less than 2 percent. In addition, a number of these 42 banks are

located in the St. Louis metropolitan area, where access to credit markets is presumably less of an obstacle. Clearly, these borrowers are not using seasonal credit to fund agricultural loans; rather, they are using the funds to support loans to other seasonal industries, such as construction. It is less clear that the program is serving a legitimate funding need in such circumstances.

Conclusion

The Seasonal Borrowing Program was enacted in 1973 to help small, rural banks fund seasonal loan demand, thereby ensuring that local credit needs were being met, especially in agricultural industries. Program use increased dramatically in the 1980s, as the number of eligible institutions and the marketing of the program by discount window officers increased. Within the Eighth District, the number of banks using the program almost quadrupled between 1984 and 1989, before declining in 1990 and 1991. Despite financial innovations during the last 20 years that have provided both borrowers and lenders with more funding opportunities, the program continues to operate because of a belief that small rural banks are still unable to tap the amount of credit required to fund peak loan demand.

Indirect tests of this credit constraint hypothesis revealed that there are significant differences in terms of balance sheet composition between banks that use the program and those that do not, evidence which is generally supportive of the program. Seasonal borrowers had higher loan-to-deposit ratios, higher ratios of fed funds purchased to liabilities and lower ratios of fed funds sold to assets than non-borrowing banks. An analysis of balance sheet ratios for a group of banks that used the program in both 1988 and 1989, but not in 1986 or 1987, showed that, in general, banks behaved in the expected way after borrowing. The one exception was the agricultural loan ratio, which was not significantly different from its pre-borrowing level. Several factors, including the trend in agricultural lending in the relevant counties during that period and the location of a number borrowing banks in District metropolitan areas, provided insight into that result. These explanations, however, cast doubt on whether program administration is in line with program motivation--ensuring that small rural banks can meet local loan demand.

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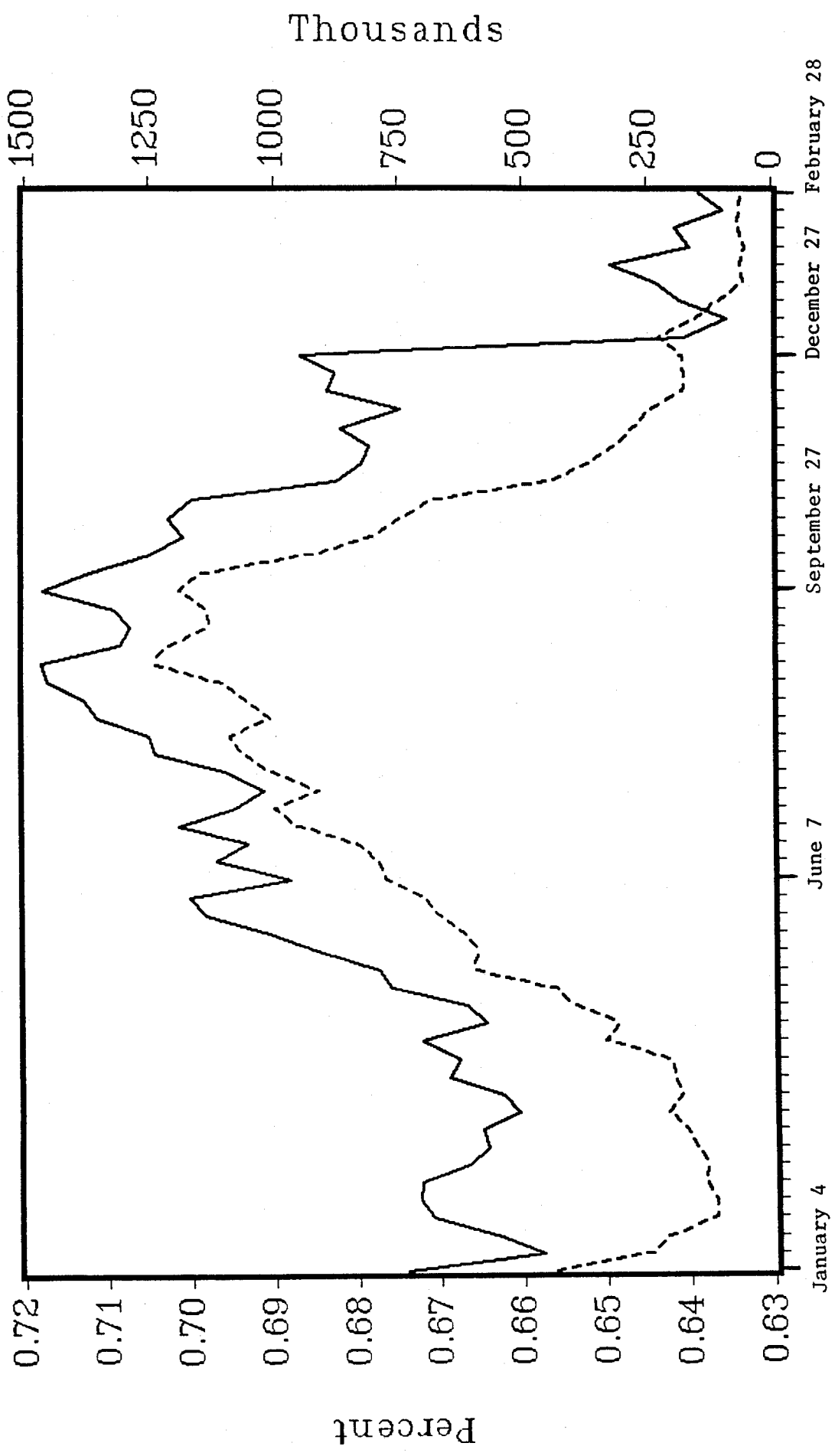
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Figure 1

Average Weekly Seasonal Borrowings and the Loan-to-Deposit Ratio
1989-1990



— Loan-to-Deposit Ratio ----- Avg Weekly Seasonal Borrowings

Figure 2
Percent of Seasonal Borrowers Who Violate Net
Fed Funds Sales Limit, June - December 1989

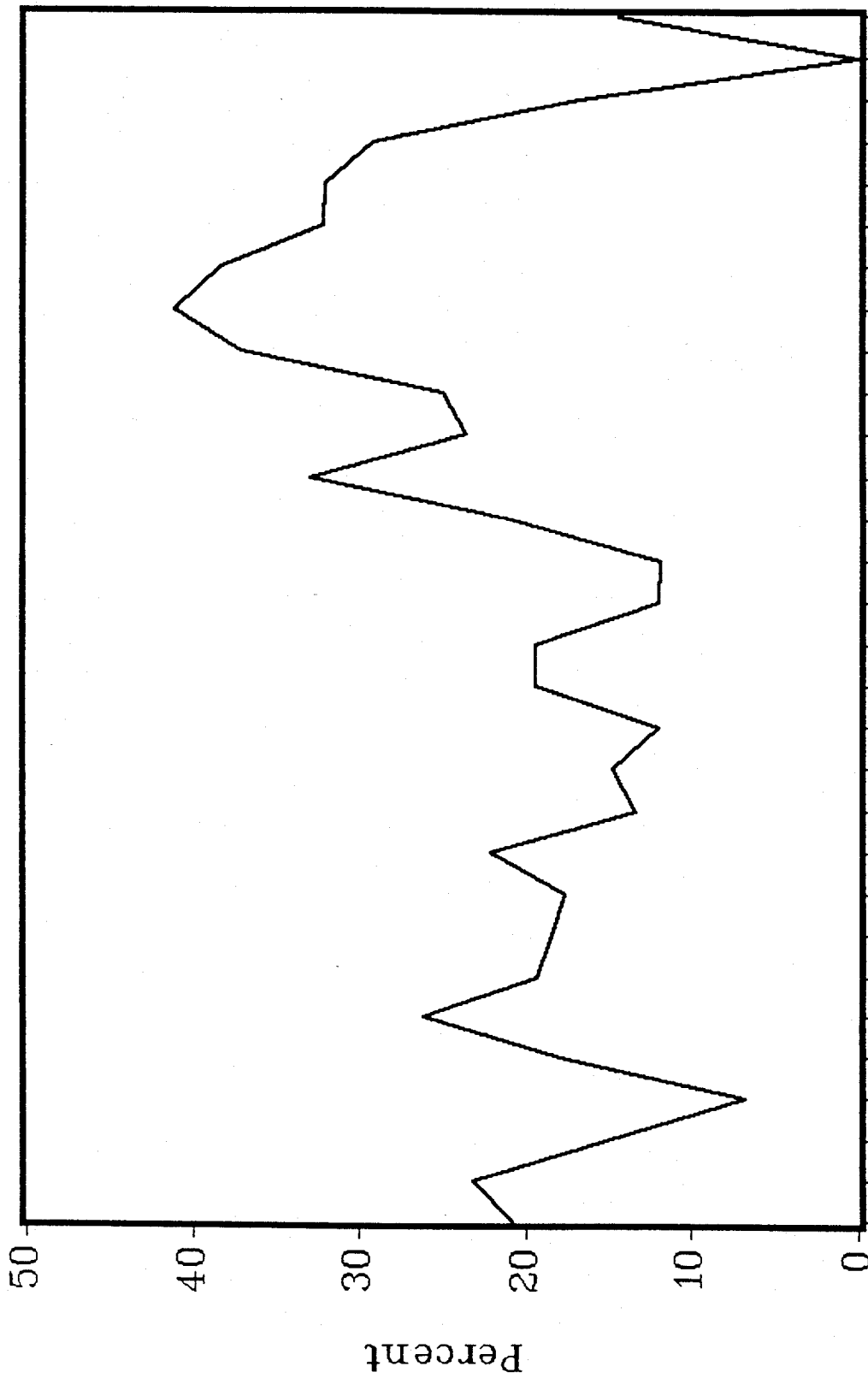


Table 1. Descriptive Statistics, Seasonal Borrowing Program, 1984-1990

(dollars in millions)

	1984	1985	1986*	1987	1988	1989	1990
Number of Participants	42	47	51	88	137	151	124
Average Deposits (annual)	\$61.3	\$63.7	\$71.8	\$75.6	\$74.6	\$62.3	\$57.5
Average Loans (annual)	\$42.1	\$44.8	\$47.0	\$51.3	\$51.3	\$42.8	\$37.9
Loan/Deposit Ratio	.68	.70	.65	.68	.68	.68	.66
Minimum (week)	.63	.65	.63	.62	.66	.65	.64
Maximum (week)	.73	.84	.68	.71	.71	.72	.69
Seasonal Borrowings (SEASB)	\$628	\$637	\$706	\$2,615	\$2,990	\$2,093	\$1,221
Mean Per Borrower	\$15.0	\$13.6	\$13.8	\$29.7	\$21.8	\$13.9	\$9.8
Minimum Outstanding (week)	3.0	3.5	.1	.3	1.7	15.2	6.1
Maximum Outstanding (week)	49.2	47.9	47.3	89.5	209.8	188.1	167.4
Mean Outstanding (week)	18.8	19.8	14.1	44.4	94.9	88.5	76.6
Seasonal Borrowings/ Total District Loans (Peak)	0.9	0.08	0.07	0.13	0.28	0.23	0.21
Peak Five-Week Period	8/22/84- 9/19/84	8/21/85- 9/18/85	8/20/86- 9/17/86	8/19/87- 9/16/87	9/14/88- 10/12/88	8/16/89- 9/13/89	9/12/90- 10/10/90
Loan/Deposit Ratio	.72	.74	.67	.70	.71	.71	.69
Fed Funds Purchased (FFP)	\$6,039.0	\$6,877.7	\$10,213.9	\$12,376.8	\$16,049.8	\$15,163.4	\$6,842.8
Minimum Week	85.0	109.4	150.9	210.5	224.8	246.6	109.7
Maximum Week	148.3	171.3	238.5	295.9	371.8	330.0	170.3
Mean Week	119.0	134.8	192.7	238.0	308.7	291.6	131.6
SEASB/FFP	.10	.09	.07	.21	.19	.14	.18
Fed Funds Sold (FFS)	\$4,433.8	\$5,476.0	\$7,437.3	\$8,927.9	\$15,073.6	\$15,153.4	\$13,180.8
Minimum Week	26.1	47.9	65.0	75.8	170.5	163.4	144.6
Maximum Week	147.7	193.0	269.6	329.3	442.1	540.7	450.4
Mean Week	87.6	106.6	140.3	171.7	289.9	291.4	253.5
SEASB/FFS	.14	.12	.09	.29	.20	.14	.09

*53 observations (53 Wednesdays)

Table 2. Average Values of Eighth District Bank Balance Sheet Ratios, 1989

	Seasonal Borrowers		Non-users of ^{1/} SBP Credit
Loans/Deposits	65.67%		58.09%
		(-6.78)**	
Ag Loans/Loans	11.00		7.80
		(-3.57)**	
Fed Funds Sold/Assets	2.68		5.42
		(9.42)**	
Fed Funds Purchased/Liabilities	1.78		0.93
		(-3.36)**	
Purchased Liabilities/Liabilities	1.82		0.94
		(-3.41)**	
Real Estate Ag Loans/Loans	6.70		7.75
		(1.72)	
Securities and Fed Funds Sold/Assets	33.31		38.59
		(5.61)**	
C & I Loans/Loans	17.72		15.65
		(-2.37)*	
Total Securities/Deposits	35.25		37.70
		(2.11)*	
	n=150		n=1,107

t-statistics in parentheses

^{1/} With total deposits less than \$500 million

* Significant at 5 percent level

** Significant at 1 percent level

Table 3. Average Values of Eighth District Bank Balance Sheet Ratios, Third Quarter 1989

	Seasonal Borrowers		Non-users of ^{1/} SBP Credit
Loans/Deposits	68.04%	(-7.97)**	59.10%
Ag Loans/Loans	13.32	(-4.25)**	8.55
Fed Funds Sold/Assets	2.04	(10.11)**	4.95
Fed Funds Purchased/Liabilities	1.75	(-3.12)**	0.96
Purchased Liabilities/Liabilities	1.78	(-3.16)**	0.98
Real Estate Ag Loans/Loans	6.55	(1.93)	7.73
Securities and Fed Funds Sold/Assets	31.97	(6.17)**	37.71
C & I Loans/Loans	17.21	(-2.02)*	15.41
Total Securities/Deposits	34.97	(2.00)*	37.35
	n=149		n=1,089

t-statistics in parentheses

^{1/} With total deposits less than \$500 million

* Significant at 5 percent level

** Significant at 1 percent level

Table 4. Two-Year Average Balance Sheet Ratios of Banks Before and After Using the SBP

	Pre-Borrowing (1986-1987)		Post-Borrowing (1988-1989)
Loans/Deposits	59.08%		64.00%
		(4.60)**	
Ag Loans/Loans	9.92		9.68
		(-0.78)	
Fed Funds Sold/Assets	5.04		3.06
		(-5.45)**	
Fed Funds Purchased/Liabilities	1.67		1.85
		(0.89)	
Purchased Liabilities/Liabilities	1.69		1.85
		(0.80)	
Real Estate Ag Loans/Loans	6.35		6.28
		(-0.30)	
Securities and Fed Funds Sold/Assets	35.78		34.14
		(-2.12)*	
C & I Loans/Loans	21.95		19.58
		(-2.84)**	
Other Loans/Loans	61.78		64.46
		(3.06)**	
	n=42		n=42

t-statistics in parentheses

* Significant at 5 percent level

** Significant at 1 percent level

Table 5. Two-Year Average Balance Sheet Ratios of Banks Before and After Using the SBP

	Peak Period (Third Quarter)	
	Pre-Borrowing (1986-1987)	Post-Borrowing (1988-1989)
Loans/Deposits	61.00%	67.40%
		(4.89)**
Ag Loans/Loans	11.55	12.17
		(0.75)
Fed Funds Sold/Assets	3.80	2.31
		(-3.10)**
Fed Funds Purchased/Liabilities	1.86	2.10
		(1.13)
Purchased Liabilities/Liabilities	1.90	2.11
		(0.99)
Real Estate Ag Loans/Loans	6.30	6.12
		(-0.43)
Securities and Fed Funds Sold/Assets	34.74	32.92
		(-2.25)*
C & I Loans/Loans	21.24	18.80
		(-2.66)**
Other Loans/Loans	60.91	62.90
		(2.20)*
	n=42	n=42

t-statistics in parentheses

* Significant at 5 percent level

** Significant at 1 percent level