

## New Survey of Terms of Bank Lending to Farmers

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In February 1977, the Federal Reserve System started a new quarterly survey of business, construction, and nonreal-estate farm loans made by commercial banks. A panel comprised of 350 banks was chosen to provide data on loans of \$1,000 or more made during the first full business week of February, May, August, and November (except that member banks report their business loans each month, and some very large banks were asked to report for only 2 or 3 days of the survey week to reduce reporting and processing burdens). For the purpose of analysis, these sample data are blown up to secure estimates of the amount, terms, and characteristics of loans at all insured commercial banks. For farm loans, the blowup factor for each stratum is the ratio of the outstanding amount of nonreal-estate loans to farmers at the sampled banks to the amount at all banks, as reported on the latest available quarterly report of condition.

A description of the new survey, including information on the objectives, sampling procedures, and February 1977 results, was published in an article, "Survey of Terms of Bank Lending," in the May 1977 issue of the *Federal Reserve Bulletin*. Selected data from each survey are issued as the Federal Reserve Board's statistical release, G.14, "Survey of Terms of Bank Lending." Every third issue of this monthly release presents the farm loan survey data. To obtain a reprint of the article or to get on the mailing list for the release, write to Publications Services, Federal Reserve Board, Washington, D.C. 20551. In addition, principal results from the latest available quarterly survey are published in table 1.35 in each issue of the *Federal Reserve Bulletin*.

The new survey of farm loans yields the following data: Number and dollar amount of loans made (and thus also the average size), average maturity, and average effective interest rate. These data can be tabulated or analyzed by known bank characteristics, such as region or deposit size; by surveyed loan characteristics, such as purpose or participation status; and by classifications based on the survey data, such as loan size or maturity class.

Previously, such data and analyses covering farm

loans nationally were available only from special surveys of loans that were outstanding on June 30. These surveys were conducted in 1947, 1956, and 1966 (see "Bank Financing of Agriculture," *Federal Reserve Bulletin*, June 1967). The new survey thus updates certain information about farm loans by more than a decade, and will henceforth keep such data far more current than in the past.

Detailed descriptions and analyses of the new data will, therefore, be of considerable interest. In such work based on a quarterly survey of loans, however, an important consideration is that seasonality in the volume of farm lending varies among regions and among different types of loans. Before initiating extensive analyses, it seems best to await the availability of data from four quarterly surveys, which can then be combined and regarded as representative of a full year of lending nationally. The relationships between variables, such as interest rates or maturity and the available bank and loan characteristics, will then be examined through tabulations and multivariate statistical techniques. Data on more than 10,000 sample loans will be available for these analyses. A preview of the data that will be forthcoming and the relationships that will be explored are provided in table 1.

### Preliminary Results

For the Nation, the average loan size was \$12,000 (loans less than \$1,000 are excluded), the average interest rate was 8.8 percent, and the average period of maturity was 9 months. The rate and maturity averages apply to the dollar amount loaned; that is, in calculating these, the data for each loan were weighted by the dollar amount of that loan.

Classification of the loans by the deposit size of the bank lending indicates that most farm loans were made by relatively small banks. The dollar amount loaned by large banks was more significant than loan numbers. On the average, loans at the large banks were much larger, carried lower interest rates, and were much more likely to have short maturity periods and a floating interest rate, and to have been made under a commitment (a line of credit known to the borrower).

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Table 1—Terms of bank nonreal-estate loans to farmers, first half of 1977  
(Based on sample survey of loans made during February 7-12 and May 2-7)

Classification of loan	Percent of total loans made		Average loan (thousands of dollars)	Average effective interest rate (per cent)	Average maturity (months)	Percentage of dollar amount of loans—				
	Number	Amount				With maturity of 12 months or more	With floating interest rate	Made under a commitment	That consists of participations originated by—	
									Reporting bank	Others
All loans .....	100	100	12	8.8	9	19	14	34	6	6
Total deposits of bank (millions of dollars):										
Under 5 .....	6	3	7	8.6	8	30	9	3	16	*
5 to 9 .....	29	18	8	8.9	11	29	2	18	6	10
10 to 24 .....	35	27	9	8.8	9	21	*	16	3	2
25 to 49 .....	14	12	10	8.9	9	23	*	55	2	1
50 to 99 .....	7	6	11	9.4	21	34	*	20	*	3
100 to 249 .....	4	10	28	9.2	10	17	4	31	2	10
250 to 499 .....	1	5	36	8.4	7	4	23	50	9	19
500 to 999 .....	1	7	68	7.9	5	1	52	85	39	19
1,000 and over .....	3	11	49	8.1	6	4	77	63	*	2
Amount of loan (dollars):										
1,000 to 2,499 .....	31	4	2	9.0	7	15	2	21	*	*
2,500 to 4,999 .....	23	6	3	9.1	9	26	3	18	*	2
5,000 to 9,999 .....	20	11	6	9.0	9	25	3	27	1	1
10,000 to 14,999 .....	8	8	12	9.0	9	28	8	21	1	2
15,000 to 24,999 .....	8	13	19	9.0	8	13	3	23	3	7
25,000 to 49,999 .....	6	16	33	8.8	12	26	5	27	5	4
50,000 to 99,999 .....	3	15	66	8.7	12	26	8	37	7	13
100,000 to 249,999 .....	1	12	138	8.7	7	10	17	43	8	12
250,000 to 499,999 .....	*	4	323	8.3	18	17	42	60	18	12
500,000 to 999,999 .....	*	3	667	8.3	6	18	45	88	32	14
1,000,000 and over .....	*	8	2,380	8.1	5	*	66	58	14	2
Maturity (months):										
Payable on demand .....	2	6	36	8.3	---	---	22	37	6	3
Under 4 .....	21	22	12	8.9	2	---	22	42	10	11
4 to 6 .....	39	32	10	8.8	6	---	8	19	7	7
7 to 9 .....	11	12	13	8.5	8	---	27	45	10	7
10 to 12 .....	21	22	13	8.7	11	60	10	42	*	2
13 to 36 .....	5	3	7	9.2	24	100	5	36	*	1
37 and over .....	2	3	27	9.6	77	100	2	42	*	2
Effective interest rate (per cent):										
Under 7.0 .....	*	4	149	6.5	7	3	76	65	12	4
7.0 to 7.9 .....	2	7	37	7.6	8	16	50	66	30	4
8.0 to 8.9 .....	45	45	12	8.5	8	17	13	31	6	10
9.0 to 9.9 .....	44	40	11	9.3	11	23	4	28	2	4
10.0 to 10.9 .....	6	3	6	10.3	10	24	6	41	*	2
11.0 and over .....	2	1	6	13.1	27	68	*	9	*	*
Method of interest charge:										
On original amount .....	3	1	6	11.2	33	66	---	9	2	*
On remaining balance .....	97	99	12	8.7	9	19	15	35	6	6
Interest rate over life of loan:										
Floating .....	4	14	46	8.0	6	3	100	74	11	3
Predetermined .....	96	86	11	8.9	10	22	---	28	5	7
Commitment status:										
Made under commitment .....	23	34	18	8.6	11	17	31	100	11	5
No commitment .....	77	66	10	8.9	9	20	6	---	4	7
Participation status:										
Participation originated by—										
Reporting bank .....	1	6	63	8.2	4	*	26	61	100	---
Others .....	2	6	37	8.6	5	2	6	29	---	100
Not a participation .....	97	88	11	8.8	10	22	14	33	---	---
Purpose of loan:										
Feeder livestock .....	10	15	18	8.4	6	14	22	40	15	13
Other livestock .....	12	14	14	8.5	12	17	18	31	8	6
Other current operating expenses .....	49	39	10	8.8	7	12	10	36	2	4
Farm machinery and equipment .....	16	12	9	9.2	17	49	5	24	1	*
Other or not known .....	13	20	18	8.8	12	22	20	36	8	9

\*Less than 0.5 percent.

Tabulation of the loans by size shows that most farm loans were relatively small, with over half being less than \$5,000. However, three-fourths of the money loaned was in notes ranging from \$5,000 to \$250,000. Over this wide range, average interest rates and many other characteristics did not vary greatly. But loans of \$250,000 or more—which accounted for 15 percent of total dollar volume—had significantly lower average interest rates, and the rates were much more likely to be floating. Still, the average rate on the very large farm loans was considerably above the prime rate of 6.25 percent that prevailed at the Nation's large banks during the survey periods.

Only 7 percent of the loans made had a maturity of more than 1 year. Because such loans remain in a bank's portfolio for a longer time, a survey of outstanding loans would show that a much larger proportion of farm loans were in this maturity bracket. The longer term loans had a higher average interest rate and were most likely to be farm machinery loans.

Relatively few farm loans, however, had effective interest rates in the upper ranges associated with some consumer and business lending. (Loans purchased by banks, such as loans purchased from farm machinery dealers, were excluded from the surveys. However, personal and consumer loans to farmers were included.) On 3 percent of all loans, banks used the discount or add-on method of calculating interest charges.

The surveys will provide the first reliable basis for estimating the gross flow of bank loans to farmers. Farm finance analysts at the macrolevel have long lamented the lack of that statistic, which is available monthly for lending by production credit associations (PCA's). From the February and May data, one might tentatively estimate that during the first half of 1977 banks made about 1.9 million nonreal-estate loans to farmers, totaling about \$23 billion. Loans made by PCA's during this period totaled \$11.1 billion.

### Analytical Considerations

As previously mentioned, a key factor to be considered (whenever interpreting quarterly survey results) is the possible effect of diverse seasonal influences on survey averages.

For example, suppose that interest rates are stable, but are lower in the South than in the North. Suppose also that the February survey contains a higher proportion of southern loans than does the May survey. The national average rate will then be higher in May than in February even if rates had not changed in either region. Multivariate analyses of data for a full year may help to quantify the nature and extent of such problems and may indicate how the quarterly data should be tabulated and presented to minimize such distortions.

Earlier it was noted that average interest rates at large banks were lower than those at small banks in the first half of 1977. Previous survey work has shown, however,

that the "most common" rate charged on farm loans at large banks tends to fluctuate considerably with changes in monetary conditions and the national prime rate, whereas the rate charged at small banks tends to move comparatively less and also more slowly. During periods of monetary restraint, therefore, average rates on loans at large banks may rise above those at small banks (as was apparently the case in the spring of 1974).

Similarly, since large loans tend to be made by large banks, the new survey will undoubtedly document differences in the cyclical behavior of rates among various size classes of loans. Thus, users of the survey data may miss significant cyclical developments if they follow only the global averages for all loans or for all banks combined. The statistical release also presents data by six loan-size classes and by two bank-size classes. The latter classes currently contrast 48 large money-center banks with all other banks. (The 48 large banks are simply those in the survey's certainty stratum—the banks with the largest outstanding business loan volume in June 1974.) This demarcation may or may not prove optimal for the purpose outlined above, and will be revised if necessary after analysis of survey results over a monetary cycle.

Users should also be aware that under some circumstances a single large loan that falls into the sample can heavily influence some of the reported survey results. The sampling plan tends to minimize this effect, in that large banks which are more likely to make large loans are in general sampled more heavily than small banks. Thus, loans made by large banks are generally assigned lower blowup factors.

Still, in the limited experience to date there have already been two cases of large loans, each of which, represented about 4 percent of the total estimated dollar amount of loans made during the survey week. In a detailed tabulation, the characteristics of such a loan may dominate the data in the cell in which it happens to fall. To the extent that the terms of the loan are unusual, such data will exhibit a large quarterly change. In the statistical release, in which all data are shown by loan-size classes, these effects are concentrated in the last size class—\$250,000 and over. Thus, users of the release should not be surprised or unduly impressed by large quarterly changes in the survey data for that class. Users interested in current developments in the amount and terms of "large" farm loans should focus mainly on the next largest size class—\$100,000 to \$249,999.

A more serious problem can arise if one of the reporting banks in the most lightly sampled stratum should happen to make a very large farm loan during a survey week. The blowup factor for farm loans in this stratum is currently about 185, and so a \$1-million loan at one of these banks would account for about a fifth of the estimated total dollar amount of farm loans made nationally. Most of the banks in the stratum are small institutions that are neither likely nor, in many cases, legally able to make such a loan. However, since mem-

bership in the stratum was based on a low outstanding total amount of both business and farm loans rather than on the overall size of the bank, several reporting banks in this group could conceivably make a very large farm loan. If a significant case of this kind occurs in a future quarterly survey, it would result in an extraordinarily high total dollar amount of loans in the last size class—\$250,000 and over. This would be a signal for users to exercise greater caution in using the overall national totals and averages reported for that quarter.

Finally, users of the statistical release will find that

the reported average maturities exhibit large variations both by loan classes in a given survey (as is evident in table 1) and for the same class from one survey to the next. The explanation is that a few nonreal-estate farm loans have surprisingly long maturities (so far, three sample loans have had maturities of 20 years) and that these loans in turn can have a large impact on maturity averages, particularly if they carry a large blowup factor. Users interested in this characteristic should plan to observe data over several quarters before drawing conclusions about maturity levels and trends.