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Appendix A

The National Bureau Survey of Farm Equipment Retailers

Facsimile of Questionnaire Schedule

1. What was your 1947 sales volume of:

   a. New farm equipment................. $______
   b. Used farm equipment................. $______
   (Sales of farm equipment should include sales of field machines and equipment such as tractors, combines, plows, etc., and farmstead machines such as milking machines and electric motors but exclude sales of automobiles, trucks, household equipment, hand tools, repair parts, and payments received for service labor.)

	New Equipment	*Used Equipment*
2. What percent of your 1947 equipment sales were financed by credit extended by your organization?.............................	____%	____%
3. What percent of your 1947 equipment sales, which were made on a cash basis as far as your organization is concerned, actually involved an extension of credit by some outside agency to which you referred the customer or through which you had arranged the financing?	____%	____%

4. Check on the following list the agencies through which you arranged financing for your customers in 1947:
   (Check one or more.)

Equipment manufacturers......( )	Other agencies (please specify.)
Banks ....( )	____________________
Production Credit Associations.( )	____________________
Finance companies...........( )	

5. Did you finance any of your own credit sales in 1947 by pledging or selling receivables to banks or finance companies?............ Yes ( ) No ( )

6. What percent of the 1947 credit sales financed through your own organization were financed in the following ways:

	New Equipment	*Used Equipment*
Open account.........................	____%	____%
Straight note (single maturity)...........	____%	____%
Instalment note	____%	____%
Total	100%	100%

7. If you have an agreement with a bank or finance company to finance your credit sales, what recourse does the lender have on you in the event of default on individual credits? (Check one.)

Full recourse ( )	Reserve or hold-back arrangement ( )
No recourse ( )	Other arrangement (Please specify.)
	____________________
	____________________

8. What was the average value (wholesale) of your inventory of farm machinery in 1947 (excluding trucks, automobiles, and parts)? $______

9. What percent of your inventory of farm machinery was financed in 1947 in one or more of the following ways:

Manufacturer's account or note.........	____%
Bank loan secured by inventory.........	____%
Finance company loan secured by inventory	____%
Other (Please specify.)..................	____%

____

Coverage of the Survey

In the survey of farm equipment dealers made in April 1948 by means of the foregoing questionnaire, the National Bureau of Economic Research had the cooperation of the National Retail Farm Equipment Association. Questionnaires were sent to 2,521 firms, approximately one-seventh of the association's membership, and replies were received from 333 of them.

The regional distribution of the small group of reporting dealers appears fairly representative by comparison with census data for the following year, which list 17,615 stores in the United States whose main line of merchandise was farm equipment:

Census Region	*Reporting Dealers, NBER Survey, 1947* [a]	*Farm Equipment Stores, 1948* [b]
New England	2.4%	1.7%
Middle Atlantic	6.9	7.0
East North Central	30.3	25.2
West North Central	31.2	33.2
South Atlantic	5.1	6.2
East South Central	2.4	4.9
West South Central	8.4	11.3
Mountain	9.3	5.6
Pacific	3.9	4.8
United States	100.0%	100.0%

[a] Based on Table A-1.
[b] Computed from data in the *U.S. Census of Business, 1948, Retail Trade,* Vol. 3, Table 1F, p. 0.22.

As to business size the sample is less satisfactory; judged by sales volume, the reporting group is probably overweighted with large firms. The 1948 census of business indicated that approximately 75 percent of all new-equipment sales were made by the 17,615 retail stores whose main line was farm equipment.[1] If the same number of stores and a similar share of total new-equipment sales are assumed for 1947, that share would have been about $1,050 million (that is, 75 percent of sales estimated in Chapter 3 at about $1,400 million), and the average sales per store would

[1] The sales figures are given in Chapter 3, footnote 3.

have been about $60,000. The average new-equipment sales volume of dealers in the NBER sample, shown in Table A-1, was considerably higher: $74,100. The two chief disparities underlying the compared averages are that small attachments were probably reported in the census but were excluded from the NBER survey, and that dealers owning more than one store may have reported to the National Bureau on a consolidated basis, whereas the census reports were for each store. Since these differences would have opposite effects, they cast no particular doubt on the indication that the NBER sample is overweighted with large firms.[2]

Because of that bias, and probably also through errors of estimation by the respondents, the survey figures on the proportion of retail sales in 1947 for which dealers supplied credit directly are apparently too high. Table 9, from the survey, indicates a 7 percent ratio of credit to sales in the case of new equipment. But the estimate for dealer-supplied credit given on page 41, about $50 million, which is based on farmers' reports and relates to sales of new farm equipment by retail stores of all types (about $1,400 million), suggests a lower ratio—less than 4 percent. The difference is far more than could be explained on the ground that some of the stores carrying farm equipment only as a sideline—hardware stores, for instance—would typically handle the smaller types of equipment, for which less credit is used.

Most of the overrepresentation of large firms in the National Bureau survey seems confined to the west coast states. The 1948 census of business indicated that average sales of new equipment per store in the Pacific region were almost double the national average.[3] The survey results, covering the preceding year, show a much wider deviation: in Table A-1 the average for west coast dealers exceeds the national average by nearly 150 percent. The possibility that regional differences might shift considerably within a year's time cannot be ruled out. But it would be difficult to adduce reasons why, with countrywide sales of new equipment in

[2] The survey made in 1947 by the National Retail Farm Equipment Association was also biased toward large firms. (See "Cost-of-Doing-Business Study," *Farm Equipment Retailing*, June 1948, pp. 25 f.) The average new-equipment sales volume for that group was $104,000. Size categories in the NBER and NRFEA surveys and in the 1948 census of retail trade do not coincide, so that detailed comparisons are not possible.

[3] *U.S. Census of Business, 1948, Retail Trade,* Vol. 2, Table 22B, p. 22.06.

1948 about 30 percent higher than in 1947, west coast dealers should have sold, on the average, only about three-fourths as much in 1948 as in the year preceding. It is much more likely that the probable large-firm bias in the survey is detectable here, and that Table A-1 greatly exaggerates the contrast between the Pacific region and others. Further discrepancies between relationships indicated by the 1948 census and the 1947 survey are as follows. The average new-equipment sales volume for stores in the West South Central states according to census reports was somewhat above the national average, but not so much above as Table A-1 puts it. The two regions where sales volume per dealer for new equipment appeared conspicuously below the national average in the NBER survey—South Atlantic and East South Central—were reported as quite close to average by the 1948 census. The Mountain states, about average according to Table A-1, show up well above average in the census reports.

Yet the above discrepancies were partly counteracted by differences between the census report and the NBER survey in the regional distribution of the firms reporting, and the regional pattern of new-equipment sales reported in the survey does not differ extremely from that shown by the census:

CENSUS REGION	SALES OF NEW EQUIPMENT	
	NBER Sample, 1947 [a]	*Census 1948* [b]
New England	2.1%	1.8%
Middle Atlantic	6.9	6.5
East North Central	27.2	22.6
West North Central	29.0	30.4
South Atlantic	3.9	6.6
East South Central	1.7	4.8
West South Central	10.5	12.0
Mountain	9.0	6.6
Pacific	9.7	8.7
United States	100.0%	100.0%

[a] Based on the sales data underlying Table A-1.
[b] Computed from data in the *U.S. Census of Business, 1948, Retail Trade,* Vol. 2, Table 22B, p. 22.06.

To sum up: None of the foregoing comparisons casts doubt on the chief impression from Table 8, that purchasers' use of credit through arrangements between farm equipment dealers and lending agencies is low in the East and West North Central regions when compared to the amount spent for equipment. In Table 9, with respect to new equipment, the countrywide estimate of the proportion of sales for which dealers supplied credit directly is probably too high, but the regional variations indicated appear trustworthy except that they may overstate the relatively high credit ratio for the Pacific region and understate the higher than average ratios for the South Atlantic and East South Central regions.

Similar checking for used equipment is not feasible, since differences between 1947 and 1948 data might very probably represent actual changes from an abnormal to a more normal situation.

TABLE A-1

AVERAGE SALES VOLUME OF REPORTING FARM EQUIPMENT DEALERS, 1947

CENSUS REGION [a]	DEALERS REPORTING	AVERAGE SALES		
		New Equipment	*Used Equipment*	*Total*
New England	8	$ 64,200	$ 5,500	$ 69,700
Middle Atlantic	23	74,300	3,000	77,300
East North Central	101	66,500	7,500	74,000
West North Central	104	68,700	8,800	77,500
South Atlantic	17	57,300	3,400	60,700
East South Central	8	52,500	21,800	74,300
West South Central	28	92,900	5,500	98,400
Mountain	31	71,200	5,200	76,400
Pacific	13	184,500	10,700	195,200
United States	333	$ 74,100	$ 7,400	$ 81,500

Based on the National Bureau of Economic Research survey.

[a] For a listing of states included in each census region, see Table 1, footnote a.

Appendix B

The National Bureau Survey of Farm Equipment Loans by Production Credit Associations

FACSIMILE OF QUESTIONNAIRE SCHEDULE

________________PCA________________
Name of Association State

1. What was the total amount of loans made by your association in 1947?.................... $______

2. What was the total amount loaned by your association in 1947 for the purpose of financing purchases of farm equipment (excluding trucks and autos, household equipment, and hand tools)? (If you cannot give the dollar volume, please estimate what percent of the total amount loaned was for farm equipment.)...... $______ or ____% of total loans

	New Equipment	*Used Equipment*
3. a. How were your 1947 farm equipment loans divided between new and used equipment?	____%	____%
b. What percent of your 1947 farm equipment loans were made with the expectation that they would be repaid within twelve months?	____%	____%
c. What percent of the amount of your 1947 farm equipment loans do you expect will require longer than twelve months to be fully repaid?............................	____%	____%

4. What percent of the amount of your 1947 farm equipment loans provided for repayment in:
   a. One payment............... ____%
   b. Regular instalments......... ____%
   c. Irregular instalments........ ____%

5. What percent of the amount of your 1947 farm equipment loans was secured by:

   a. Signature (with or without endorsement) .... ____%
   b. Lien on the equipment purchased (no other security).... ____%
   c. Lien on the equipment purchased plus a lien on other assets ...... ____%
   d. Other security.... ____%

(Note: If figures on any of the above questions are not readily available, please give your best estimate.)

Coverage, Method of Computation, and Comment on the Results

The preceding questionnaire was sent in April 1948 to the secretary-treasurer of each of the 503 PCAs in the country. Replies were received from 255, comprising 51 percent of the associations and accounting for 55 percent of the total volume of loans made by PCAs in 1947. Each secretary-treasurer was requested to estimate the amount of credit extended to farmers by his association in 1947 for the purchase of all types of farm equipment except trucks and automobiles, household equipment, and hand tools. Additional information requested on the schedule included: the division of loans between those for purchase of new and of used equipment; the expected maturity of the loans; the method of repayment; and the type of security taken.

Over-all estimates of equipment financing for all PCAs were made by geographic region and for the United States, based on the sample that completed the questionnaire. The sample was blown up by regions on the basis of the ratio of the volume of total loans made by all associations in each region to the volume of total loans made by reporting associations (Table B-1). The estimates for all PCAs in the United States were derived by adding the individual estimates for the regions. On that basis, estimated equipment loans of PCAs totaled $86.5 million.

When the survey figure of $86.5 million for the total of PCA equipment financing was compared to dollar estimates based on the findings of the BAE survey (page 41), it appeared that there might be a considerable upward bias in the estimates yielded by the NBER survey.

TABLE B-1

NUMBER AND LOAN VOLUME OF REPORTING PRODUCTION CREDIT ASSOCIATIONS AND OF ALL PCAs, 1947

CENSUS REGION [a]	NUMBER		1947 LOAN VOLUME (THOUSANDS)		RATIO OF REPORTING TO ALL PCAS		MULTIPLYING FACTOR [d]
	All PCAs [b]	*Reporting* [c]	*All PCAs* [b]	*Reporting* [c]	*Number*	*Loan Volume*	
New England	17	6	$ 17,998	$ 4,204	35%	23.4%	4.2812
Middle Atlantic	28	13	42,780	18,662	46	43.6	2.2924
East North Central	68	31	110,866	65,074	46	58.7	1.7037
West North Central	92	48	116,797	65,864	52	56.4	1.7733
South Atlantic	114	46	77,449	35,188	40	45.4	2.2010
East South Central	38	26	54,950	35,351	68	64.3	1.5544
West South Central	72	37	150,340	79,858	51	53.1	1.8826
Mountain	35	20	97,554	53,400	57	54.7	1.8269
Pacific	39	28	79,233	54,025	72	68.2	1.4666
United States	503	255	$747,967	$411,627	51%	55.0%	[e]

[a] For a listing of states included in each census region, see Table 1, footnote a.

[b] From *Agricultural Statistics, 1948* (U.S. Department of Agriculture), Table 726, p. 651.

[c] Based on the National Bureau of Economic Research survey.

[d] Based on the ratio of the volume of total loans made to total loans reported.

[e] Not used: Total for United States is sum of regional estimates.

The only published research pertaining to 1947 PCA loans by purpose is a study of four Indiana associations.[1] The data described in it, which refer to loans made in 1944–48, indicated that 15 percent of the loan volume of Indiana PCAs during those years comprised credit actually intended for purchases of equipment. A check of the replies from six of Indiana's ten associations to the NBER questionnaire puts their estimate for the year 1947 at 23 percent.

An analysis of the purpose data for 1947 compared with the NBER survey shows the following variations:

	Dollar Volume	*Percent of Total Loans*
1. One association participating in both studies: Peru PCA, Peru, Indiana		
Estimated equipment loans, 1947 (NBER survey) [a]	$838,400	20%
Actual equipment loans, 1947 (from random sample of 50 borrowers) [b]	586,880	14
2. State of Indiana		
Estimated equipment loans, 1947, for 6 of 10 associations reporting (NBER survey) [a]		23
Actual equipment loans, 1947 (from random sample of 50 borrowers in each of four associations) [b]		16

[a] The NBER survey excluded automobiles, trucks, and hand tools.
[b] Excludes automobiles, but includes trucks and hand tools.

Since trucks were included in the Indiana samples of actual loans but not in the estimates, the upward bias of the estimates may be appreciably greater than the 30 percent indicated by the above comparison. Individual PCA loans typically cover a variety of production needs; therefore the task of the respondents—to estimate the importance of one type of proposed expenditure in a total of multipurpose loans—was difficult, and since the element being estimated turned out small, high accuracy could not be expected. The PCA survey has been drawn upon in the text, therefore, not for its

[1] H. G. Diesslin and G. E. Heitz, *Budgeted Farm Production Loans of Production Credit Associations* (Purdue University Agricultural Experiment Station, Bulletin 557, November 1950), pp. 20 f.

estimates of volume per se, but for the regional differences indicated and for its information on loan characteristics.

The respondents also furnished estimates of the distribution of PCA equipment credits as between new- and used-equipment financing, from which percentages of 59 percent and 41 percent respectively emerged for the United States as a whole (Table B-2).

TABLE B-2

ESTIMATED VOLUME OF CREDIT EXTENDED BY PRODUCTION CREDIT ASSOCIATIONS FOR PURCHASE OF FARM EQUIPMENT, 1947

CENSUS REGION [a]	AMOUNT (THOUSANDS)		PERCENT	
	New Equipment	*Used Equipment*	*New*	*Used*
New England	$ 930	$ 148	86%	14%
Middle Atlantic	7,635	5,734	57	43
East North Central	12,185	11,303	52	48
West North Central	7,289	6,844	52	48
South Atlantic	4,581	1,894	71	29
East South Central	2,879	2,496	54	46
West South Central	6,080	4,475	58	42
Mountain	4,986	1,860	73	27
Pacific	4,216	918	82	18
United States	$50,781	$35,672	59%	41%

Based on the National Bureau of Economic Research survey. Estimates are not corrected for upward bias existing.

[a] For a listing of states included in each census region, see Table 1, footnote a.

The problem of estimating this proportion is as difficult as that of isolating the equipment portion of general production loans, and was made more difficult in 1947 by an abnormal relationship between prices of used and of new equipment. The estimates on page 41, based on the BAE survey of farmers' equipment purchases, give a much higher proportion of new- as against used-equipment credit in the total supplied by PCAs, and it seems probable that the estimates of the PCA respondents given in Table B-2 considerably overstate the importance of used-equipment financing in PCA lending.

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