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# TRADE • *A Factor in the* CREDIT • *Rationing of Capital*

LIMITED SUPPLIES OF CAPITAL and credit over the past two years in an environment of mounting requirements have aroused much interest as to the identity of the potential borrowers whose demands have not been fully met. Analyses of the many and varied effects that have resulted from this condition have been focused largely on the rise of interest rates, the rationing actions of lenders (including banks and other financial intermediaries) in choosing to accommodate one demand rather than another, and the comparative accessibility of the capital markets to various types of borrowers. Large business units have been said to be exempted from direct credit rationing because of their financial strength, bargaining ability, and unrestricted access to the open market. Smaller units, lacking these advantages, have been described as being limited in their opportunities for growth and even as having suffered a reduction of the credit formerly available to them. This characterization of the credit rationing process probably involves oversimplification for, in reality, a great many other conditions must be considered to reach a balanced appraisal of the influence of restricted credit on various kinds of business.

The emphasis that has been given in the analysis to market access, the rationing actions of lenders in preferring one customer rather than another, and the restraining influence of higher interest costs is altogether appropriate. Another type of relationship, however, deserves consideration in the broad treatment of capital rationing. This relationship consists of the practice among business

units and individuals of buying and selling on open book or charge account. For example, a business unit, finding it impossible to obtain additional credit through its usual sources, may supplement its capital by paying its bills less readily and by collecting from its customers more promptly than before. Obviously, such a practice could not yield additional credit for all units, since one can gain only at the expense of others. Yet the prevailing system of business relationships and trade practices makes it possible for some firms and some industries to gain capital in this way.

The foundation of trade credit is the structure of industry in which goods gain in value as they move from the raw material stage through the successive refinements of fabrication to the retail trade outlet and thence to the final consumer. Goods purchased by a business gain in value by the application of labor and capital. Thus, the individual business is likely to receive less credit through accounts payable owed to its suppliers than it extends through sales to its customers. But trade practices and the credit policies of specific firms and industries may alter this logical relationship. A business unit may receive more favorable credit terms from its suppliers than it grants to customers, and its accounts payable, therefore, may be higher than accounts receivable.

Interjection of trade credit into the discussion of the process of credit rationing raises a number of questions. First, is the volume of credit extended through this medium sufficiently large to be important in the allocation of available credit? Second,

what are the broad groups which extend and receive credit in this form and what is their relative importance? Third, is trade credit sufficiently flexible to be a significant factor adding to the credit of some businesses during a period of credit restrictiveness? Fourth, do small firms gain or lose capital through trade credit? The ensuing discussion sets forth the available statistical information that applies to these questions.

#### The Magnitude of Trade Credit

The most comprehensive information on the amount of trade credit outstanding is supplied by the U. S. Treasury Department in the publication *Statistics of Income*. The data shown in the accompanying table exclude the reports of banks and other financial institutions, for their operations are not germane in this analysis. Since the figures are estimates for all corporations that submitted balance sheets with their tax returns, they exclude unincorporated business units, individuals, government units, and a few smaller corporations. Because the corporate form of organization is more typical of certain industries than of others, inferences cannot be drawn from these figures about the amounts of credit extended and received by specific industries. For example, unincorporated businesses are much more common in agriculture and retail trade than in manufacturing; therefore, a much larger share of their operations is omitted from the data shown.

Several aspects of these figures are of interest for the questions posed. These business units at the end of 1952 held notes and accounts receivable of \$53.4 billion and owed accounts payable of \$32.6 billion. This volume of accounts receivable was almost double the amount of loans to businesses held by all commercial banks on that date and was equal to 14 per cent of the assets of the corporations. Since total notes and accounts receivable exceeded accounts payable by

#### RECEIVABLES AND PAYABLES, NONFINANCIAL CORPORATIONS

(In millions of dollars)

Industry group	Notes and Accounts Receivable		Accounts Payable	
	1951	1952	1951	1952
Agriculture, forestry, and fishing	371	260	335	197
Mining and quarrying	1,430	1,438	963	968
Construction	3,171	3,389	1,352	1,382
Manufacturing	24,493	27,414	14,685	16,210
Total trade	15,125	15,830	9,360	9,817
Wholesale	8,518	8,517	5,516	5,631
Retail	5,749	6,368	3,293	3,609
Miscellaneous	859	945	551	577
Service	1,176	1,284	859	890
Public utilities	3,591	3,741	2,876	3,098
Miscellaneous	79	71	40	34
Total	49,436	53,427	30,470	32,596

SOURCE: *Statistics of Income for 1952, Part 2*, U. S. Treasury Department.

\$20.8 billion, it is clear that a tremendous amount of credit was extended to others in the form of trade credit. The recipients of this credit can be assumed to be those economic units which are not included in the table, since credit extended and received in this form among corporations would be included in the receivables of one firm and the payables of another. It is noteworthy that in each industrial group shown the volume of trade credit extended exceeded the volume received.

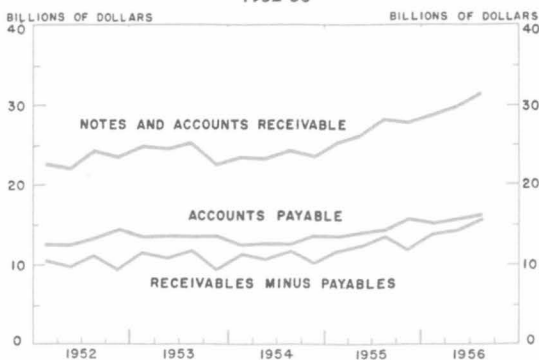
These magnitudes clearly denote that trade credit is a factor of substantial importance in reallocating capital obtained from other sources by corporate business units. It is not possible to identify the recipients of these credits, but, as the figures pertain to almost all corporations, the sum was received by individuals, unincorporated businesses, and government units. The last of these is unlikely to account for an important share because of the financing methods used by government units. Estimates of the indebtedness of individuals on charge and service accounts also suggest that they did not receive an important part. Unincorporated businesses, which typi-

cally are small, appear to have received the major part of this credit.

### Flexibility of Trade Credit

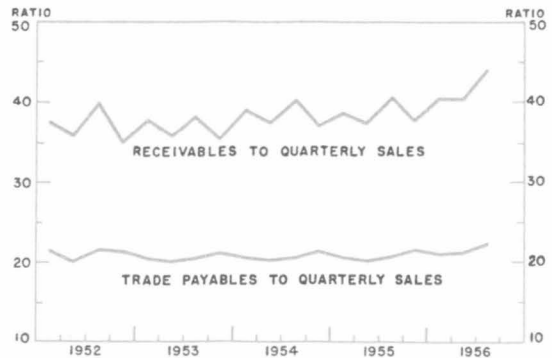
Although trade credit represents a tremendous sum, and therefore is potentially an important mechanism through which restrictions on credit may be reallocated, it does not necessarily follow that this credit is sufficiently flexible under restrictive conditions to afford assistance to hard-pressed businesses. In order to examine the responses of trade credit under recent money market conditions, it is necessary to turn to the evidence for manufacturing corporations alone. This choice is necessary because the estimates for all corporations by the Securities and Exchange Commission for recent years do not segregate other corporations from banks and finance companies and because no estimate is provided for trade payables alone. Estimates for manufacturing firms are prepared by the Federal Trade Commission and the Securities and Exchange Commission and published in the *Quarterly Financial Report of Manufacturing Corporations*. Revision of the sample in the second quarter of 1956 made it necessary to adjust the third quarter estimate to preserve comparability with preceding years.

### NOTES AND ACCOUNTS RECEIVABLE AND ACCOUNTS PAYABLE, U. S. MANUFACTURING CORPORATIONS 1952-56



SOURCE: *Quarterly Financial Report of Manufacturing Corporations*, Federal Trade Commission and Securities and Exchange Commission.

### RATIOS OF RECEIVABLES AND ACCOUNTS PAYABLE TO SALES, U. S. MANUFACTURING CORPORATIONS 1952-56



SOURCE: *Quarterly Financial Report of Manufacturing Corporations*, Federal Trade Commission and Securities and Exchange Commission.

The growth of notes and accounts receivable and accounts payable from the first quarter of 1952 to the third quarter of 1956 is shown in the accompanying chart. Since the expansion of total sales normally would lead to proportionate increases in trade credit, a second chart is shown in which receivables and payables outstanding at the end of each quarter are expressed as percentages of the volume of sales in the preceding quarter. Most of the irregularities in the second chart result from seasonal fluctuations of sales, although there also is a clearly defined seasonal movement in receivables that results from seasonal changes in sales.

From an examination of the first chart, it is evident that the growth of trade credit in the business expansion extending from the third quarter of 1954 to the third quarter of 1956 exceeded the rise in 1952-53—also a period of strong business expansion. Payables showed no perceptible increase in the earlier period but rose materially in the 1954-56 period. Yet, the rise in receivables exceeded the growth of payables so that the difference—net credit extended to others—increased from \$11,799 million to \$15,639 million. The difference of \$3,840 million, representing the in-

crease in net credit extended, was distinctly greater than the increase of \$2,776 million which occurred in the bank debts of manufacturing corporations. Thus, while there is no reason to doubt that most of these firms had access to bank credit, it is equally evident that other firms benefited through improvement in the ability of manufacturers to carry larger volumes of receivables.

A part of the recent increase in notes and accounts receivable of manufacturing corporations clearly is attributable to the expansion of sales, as can be seen on the second chart where the receivables-sales ratio is plotted. Throughout the period shown, there is a slow upward drift in this ratio, but the rise from the third quarter of 1954 onward was more rapid than in preceding quarters. The actual increase in receivables in the two years was \$7,442 million. If the ratio of receivables to sales had remained unchanged through the period, the increase would have been only \$4,549 million. The difference — \$2,893 million — was the result of the increase in the ratio from 40 per cent in the third quarter of 1954 to 44 per cent at the same point in 1956. This marked rise in the ratio coincided with the period of credit restrictiveness, tempting one to assume that the two developments were closely related. Other plausible explanations deserve consideration, however.

One possibility is that the shift of demand among industries from 1954 to 1956 led to more than proportionate increases in sales in the lines in which accounts receivable are usually high in relation to sales. Such shifts would have raised the ratio but would have furnished no basis for assuming that restrictive credit was an influence. The data for each type of manufacturing afford a basis for testing this hypothesis. The test consists of determining the ratio of receivables to sales that would have occurred in 1954 if the distribution of sales among the several lines had been

the same as in 1956. That shifts of demand were of negligible significance is denoted by the fact that the ratio in 1954 is raised only from 40.0 per cent to 40.6 per cent. Conversion to dollar terms shows the shift in demand to have accounted for only \$348 million of the total growth of receivables.

Another possible explanation of the rise in the ratio of receivables to sales is that manufacturing companies have found it profitable, both because of the rate of interest received and as a stimulant to sales, to set up financial arrangements under which equipment could be sold on the instalment payment plan. Widespread establishment of such plans would materially affect the availability of credit for certain purposes, but it could not be taken uncritically as evidence of a response to a lack of credit availability from other sources. An alternative interpretation might be that some firms which could not have obtained credit from other sources, even under conditions of credit ease, are enabled by these arrangements to buy equipment.

The extent to which purchases of equipment under instalment payment plans have spread among industries is not known. Information on specific companies confirms that the number of instalment plans and the volume of sales financed by this method have increased over the past two years. Such plans as are known have been set up only in the durable goods industries. Over the two years ending with the third quarter of 1956, the ratio of receivables to sales in the durable goods lines increased from 44.0 per cent to 47.6 per cent. In the nondurable goods industries, the increase was from 36.3 per cent to 40.5 per cent — a somewhat larger rise than that in the industries in which the change in financing might have been important.

Neither the shift of demand nor the growth of instalment finance seems to have been of major importance in producing the rise in the ratio of receivables to sales in the 2-year

period. It therefore appears that restrictions on the availability of credit supplies from other sources led some firms to increase their use of trade credit.

The failure of the ratio to rise materially in 1952-53, under strong business conditions, may be explained by a number of differences between the two periods. On the basis of several measures, the earlier period can be judged to have involved less restrictive credit conditions and the period of tightness was much less prolonged. Business liquidity therefore was not reduced materially, as has been the case recently, nor did business capital investment either in plant and equipment or inventory in 1953 exhibit the marked growth that prevailed in 1954-56.

#### Trade Credit and Corporate Size

The distinct indication that trade credit responds to restrictive general credit conditions that are sufficiently prolonged and intense makes it particularly interesting to examine the evidence as to the size of business which extends and which obtains credit through trade relationships. Data from the *Statistics of Income* provide a classification by industry and asset size, but payables are not segregated into notes and accounts. Notes payable are primarily debts owed to banks

and other lenders and thus trade payables cannot be isolated so as to determine the net volume of credit extended or received.

In interpreting the figures in the accompanying table, this deficiency may be overcome partly by recognizing that, in the smaller corporations, trade payables represent a larger, and bank debts a smaller, proportion of total payables than in the larger business units. This observation is founded on the evidence from manufacturing corporations, for which appropriate data are available, and on the large net extensions of trade credit that are made by larger firms to other businesses, most of which probably are small unincorporated concerns.

As the size of the unit increases, most of the industries shown in the table display a rise in receivables as a percentage of payables. (Percentages of less than 100 indicate that total payables exceed total receivables.) The progression as size increases is clearest in mining and manufacturing establishments. Construction firms are a special case, for their receivables appear to consist largely of uncompensated outlays on incomplete construction projects and therefore resemble the goods-in-process of manufacturing companies. Public utilities employ bank credit in financing construction until the completion of projects, and

#### RECEIVABLES AS PERCENTAGES OF PAYABLES, NONFINANCIAL CORPORATIONS, 1952

Asset Size (In thousands of dollars)	Agriculture, Forestry, and Fishing	Mining and Quarrying	Construc- tion	Manufactur- ing	Public Utilities	Trade	Services
Under 50	52	47	93	73	68	63	67
50 and less than 100	45	48	121	96	91	91	89
100 and less than 250	64	85	129	95	103	108	92
250 and less than 500	71	85	141	97	80	111	97
500 and less than 1,000	60	95	164	106	93	119	80
1,000 and less than 5,000	52	99	189	114	86	117	87
5,000 and less than 10,000	94	91	296	122	67	108	79
10,000 and less than 50,000	67	114	255	133	87	121	129
50,000 and less than 100,000	0	103	205	121	84	100	63
100,000 and over	224	143	0	121	95	109	99

NOTE: Percentages of less than 100 indicate that total payables exceed total receivables.

SOURCE: *Statistics of Income for 1952, Part 2*, U. S. Treasury Department.

their excess of payables is a reflection of their construction activity rather than a measure of their gain through trade credit relationships.

The information for manufacturing during the 2-year period ending with the third quarter of 1956 allows a segregation of payables into trade and bank sources on the basis of size of corporation. When trade receivables are compared with trade payables alone, only firms having less than \$250,000 of assets are found to have payables in excess of receivables. During the 2-year interval, these corporations showed comparatively little increase in receivables or bank debt but a substantial gain in trade payables. Firms having less than \$5 million of assets reported a gain in payables that was equal to 88 per cent of the rise in notes and accounts receivable. Moderate increases in bank debt were a source of additional funds. Corporations having more than \$5 million and less than \$50 million of assets experienced a gain of trade payables that was equal to only about 23 per cent of the rise in trade receivables and, while bank debt increased, the gain was well below that required to cover the difference. By far the largest share of the growth of receivables was in companies having more than \$50 million of assets. Their gain in accounts payable was equal to about 40 per cent of the growth of receivables, and, although bank indebtedness increased, the gain was not large enough to cover the disparity.

In summary, the available evidence on trade credit in relation to size of corporation supports the view that smaller businesses gain an important amount of capital through trade relationships. If it is true that large manufacturing firms have comparatively little difficulty in obtaining bank credit, it is also evident that the amount they obtained in 1954-56 was insufficient to cover the expansion in trade credit.

### Concluding Comment

The preceding discussion shows that trade credit extended among firms in financing sales is large enough to justify the assumption that it is important in the reallocation of credit obtained through bank loans and sales of securities. The available evidence suggests that much of this credit is extended to unincorporated businesses which, by their nature, are probably small. The information on corporations confirms that smaller companies are the principal recipients. Such credit also was found to possess flexibility that could not be explained by the increase in the volume of sales, shifts in demand, or the growth of corporate instalment credit, lending support to the conclusion that credit restriction played a part in the expansion of trade credit during the period from 1954 to 1956.

This conclusion does not necessarily lead to the further inference that small firms encounter little difficulty in financing under conditions of credit restriction. Little is known as to the terms on which larger credit supplies are made available through trade channels. Costs may be high, disadvantageous shifts in the product handled may be required, or other sacrifices may be necessary in order to gain credit through these channels. Moreover, there is no basis for judging how far trade credit can be expanded before the larger businesses become highly resistant to further increases. On the other hand, the existence of a network of business credit relationships of such magnitude and scope raises doubt about the effort to judge credit availability solely on the basis either of bank actions or access to capital markets. Moreover, it demonstrates the difficulties that might accompany any effort to improve the availability of capital for small businesses through direct restrictions upon larger firms, which have wide opportunities to alter their provision of capital through trade channels.



# VARIABILITY

in

# AGRICULTURE

**I**N ANY INDUSTRY, FUTURE events must be considered in the decision-making process. However, the uncertainty surrounding such events may prevent these decisions from yielding the anticipated results. This uncertainty varies with type of industry, region, time, economic conditions, weather, and a host of other factors.

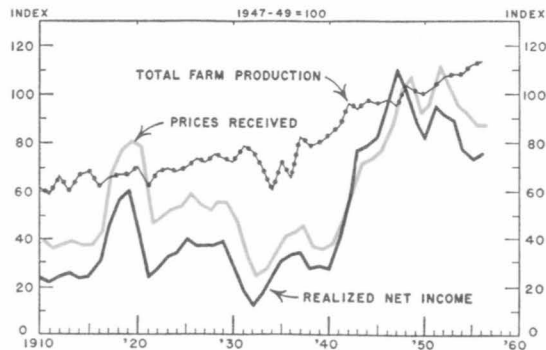
Lenders are interested in the degree of variability as well as in the amount of income that can be expected from the enterprises they finance. They are concerned with the differences between industries and with the different types of variability within each industry. In this article, certain types of variability within the agricultural industry will be discussed.

A study of variability in agriculture can be approached from several viewpoints—for the industry as a whole, on a regional basis, on an individual farm basis, on a seasonal basis, from the viewpoint of differences between enterprises, and perhaps from many other angles. Obviously, not all of these approaches can be discussed in this article. Thus, an effort will be made to analyze briefly variability for the industry as a whole and to make some regional comparisons that are of interest within the Tenth Federal Reserve District.

Much of the variability existing within the farm industry, among regions, and on individual farms is due to variations in production, prices, and costs. The accompanying chart indicates fluctuations in agricultural production, prices received by farmers, and net income from agriculture in the United States from 1910 to 1956. The chart indicates that agricultural production was quite stable when compared with prices or income, which tend to be volatile and closely related.

The chart also shows that instability in agricultural income for the Nation as a whole

VARIABILITY IN REALIZED NET INCOME, PRICES RECEIVED, AND AGRICULTURAL PRODUCTION  
United States



SOURCE: U. S. Department of Agriculture.

must be attributed largely to price fluctuations rather than to fluctuations in production. Agricultural production nationally is stable because the resources used in agriculture do not fluctuate sharply and there is enough regional variation throughout the Nation so that poor conditions in one area are likely to be offset by good conditions in another area. On the other hand, prices received are influenced largely by forces that are national in scope. Thus, regional variations in prices received are minor and do not tend to offset each other.

At the opposite extreme, production variations cause significant variability in income on the individual farm. Drought, floods, insect infestation, disease, or any number of other factors may cause production on the individual farm to vary sharply from one year to the next. However, the amount of production variability on the individual farm is influenced by the degree of specialization, the commodities produced, and the resources used. A farm producing two or three commodities usually will have a more stable production than a completely specialized farm. Production will tend to be more stable on a dairy farm than on a wheat farm. The degree of stability will be influenced by management, land, and the amount and kinds of capital used. Furthermore, price fluctuations are an important factor in causing variability on the individual farm.

Financial institutions, however, usually do not lend throughout the United States or only on an individual farm. Instead, they lend funds to a number of farmers in a given region. They expect some variability on the individual farm, but they frequently attempt to avoid regions or areas that have a high degree of variability. Consequently, farmers in certain areas at times find it more difficult to obtain credit than do farmers in other areas. This may explain why farmers in the southern Great Plains region sometimes have found it

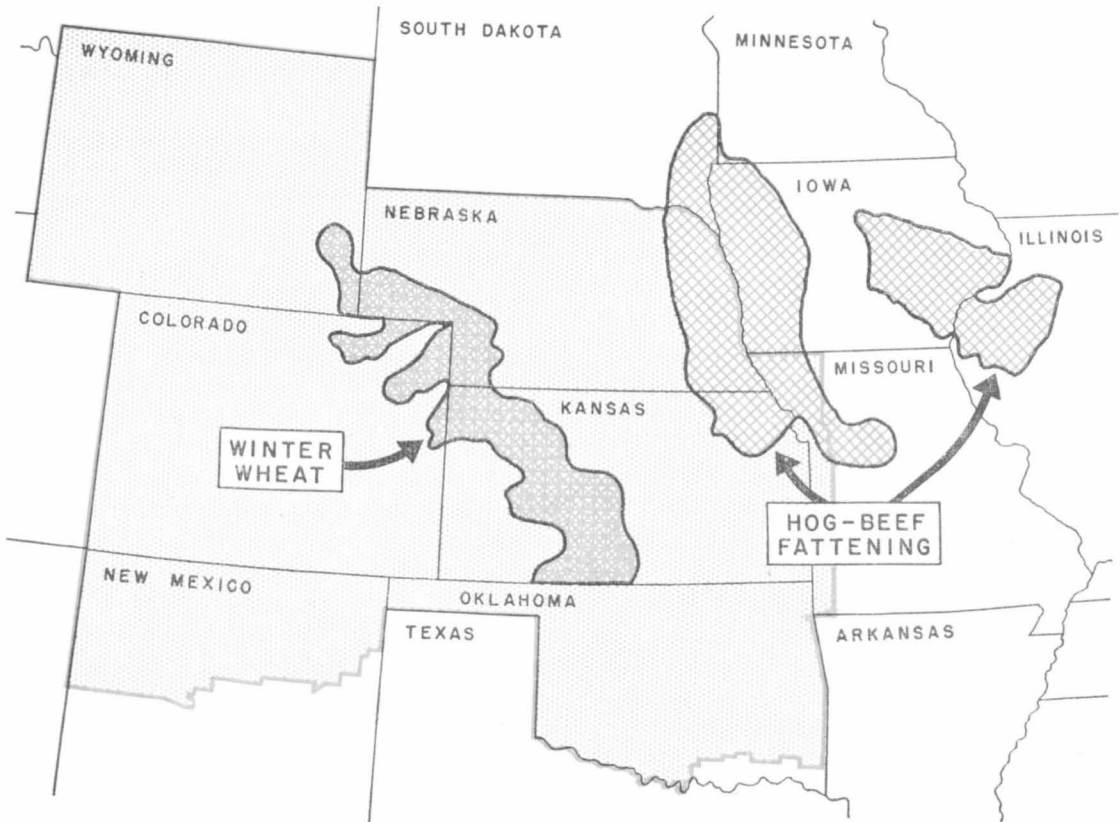
relatively difficult to obtain credit, since the belief prevails that income variability in this area has been much greater than in many other areas.

The U. S. Department of Agriculture has collected and summarized data on yields, prices, cash receipts, cash expenditures, and net farm income for representative family-operated farms in a number of major farming regions for the years 1930 through 1951. In subsequent sections of this article, these data will be compared for the Corn Belt Hog-Beef and Southern Plains Winter Wheat regions. These regions were chosen for comparative purposes, since the Corn Belt Hog-Beef region usually is associated with farming areas that have relatively low variability, while the Southern Plains Winter Wheat region is associated with the high-risk areas. Analysis of data indicates that there is less difference in variability among these areas than commonly supposed. Furthermore, prices, cash receipts, and net farm income all fluctuate more violently from year to year in each of the regions than does the index of all crop yields. This indicates that price fluctuations are more important in causing variability of income in the Southern Great Plains region than are fluctuations in crop yields. This may not be true, however, on some individual farms that are highly specialized in the production of one commodity and on which high-risk resources are used.

#### Prices Received

Data on the index of prices received by farmers for the commodities they sell in the two regions are shown in Table 1. The average index for the period 1930 to 1951 is useful as a guide for comparative purposes. The index is shown for the years in which it was lowest and highest to indicate how violently prices have fluctuated during the 22-year period being analyzed. However, if a meaningful analysis of variability is to be

LOCATION OF MAJOR FARMING REGIONS ANALYZED



SOURCE: U. S. Department of Agriculture. NOTE: Heavy colored line indicates Tenth Federal Reserve District.

made, it is necessary to know more about variation than the average, the low, and the high.

A useful device for measuring variability is the coefficient of variation. This coefficient permits measurement of both the amount and

the frequency of variation. If no variation had occurred during the period studied, the coefficient of variation would have been zero. If the variation had been large and had occurred frequently, the coefficient of variation would have been large. Wide variation that occurred infrequently would not influence the coefficient of variation as much as a somewhat smaller variation that occurred much more often. It should be noted that the coefficient of variation for prices received by farmers did not differ significantly for the two regions.

Table 1. INDEX OF PRICES RECEIVED BY FARMERS  
(1947-49=100)

Farming Region	Average 1930-51	Low	High	Coefficient of Variation
Southern Plains Winter Wheat	56	18	109	53.2
Hog-Beef Fattening	54	17	106	54.8

SOURCE: U. S. Department of Agriculture.

Table 2. INDEX OF YIELD FOR ALL CROPS  
(1947-49=100)

Farming Region	Average 1930-51	Low	High	Coefficient of Variation
Southern Plains Winter Wheat	73	24	129	47.4
Hog-Beef Fattening	93	42	123	21.8

SOURCE: U. S. Department of Agriculture.

### Crop Yields

Crop production usually fluctuates more widely than livestock production. Consequently, an index of crop yields should be a sensitive indicator for measuring stability in agricultural production. Table 2 includes data that are useful in comparing variability in the index of yield for all crops for the two regions studied.

There is considerable difference between the high and low points reached by the index in both regions. However, it is interesting to note that variation in crop production was not as large as variation in the index of prices received by farmers. This indicates that crop yields from 1930 to 1951 were more stable, even in the so-called high-risk region, than were the prices farmers received.

This higher degree of stability in yields than in price, even when relatively small regions are studied, also is shown by the coefficients of variation. The coefficients for the indexes of yields of all crops are smaller than those for the indexes of prices received by farmers. It also is interesting to note that the coefficient of variation for the index of yield in the Hog-Beef Fattening region is substantially lower than that for the Winter Wheat region, although the coefficient for the latter is relatively low. These low coefficients for crop yields indicate that crop production in these areas was more stable than were prices received, cash receipts, or net income.

### Cash Receipts

Cash receipts vary with production and price changes. Data in Table 3 indicate that

from 1930 through 1951, the effects of production and price variations tended to be additive, since the coefficient of variation for cash receipts in each of the regions was larger than for either prices received or crop yields. Although productivity also should include production of livestock and livestock products, comparable data were not available for these commodities. However, it probably can be safely assumed that production of livestock and livestock products in these regions is more stable than crop production.

Empirical evidence also seems to verify that production and price variations during this period tended to be additive. In general, both production and prices were low during the 1930's, while both tended to be high during the 1940's and early 1950's. This probably can be attributed almost exclusively to coincidence, since the strong demands and inflationary pressures during the latter part of this period coincided with good yields.

Differences in cash receipts per farm between the low and high years, along with the coefficients of variation for each of the regions, indicate that the Southern Plains Winter Wheat region has a higher degree of variability than the Hog-Beef Fattening region. The difference in the coefficient of variation, however, is surprisingly small. It also should be noted that the representative farm in the Hog-Beef Fattening region had substantially larger average cash receipts than the representative farm in the Winter Wheat region. This is explained by the fact that on the representative farm in the Hog-Beef Fattening region, relatively large numbers of feeder livestock were purchased and sales of

Table 3. CASH RECEIPTS PER FARM

Farming Region	Average 1930-51	Low	High	Coefficient of Variation
Southern Plains Winter Wheat	\$6,228	\$1,180	\$16,868	77.9
Hog-Beef Fattening	9,316	2,245	22,410	74.6

SOURCE: U. S. Department of Agriculture.

these animals were reflected in the cash receipts. On the representative farm in the Winter Wheat region, a larger proportion of the products was raised on the farm and the sale of these products was reflected in cash receipts. Thus, cash expenditures on the representative farm in the Winter Wheat region also were substantially lower.

#### Cash Expenditures

In areas where cash receipts fluctuate widely, variation in cash expenditures also may be desirable if the variation between the two is direct. In years when farmers' cash receipts are large, they are able to make larger cash expenditures.

The data in Table 4 indicate that cash expenditures in both regions tended to be more stable from year to year than did cash receipts during the period studied. The difference in the Hog-Beef Fattening region was small, however, while the relatively low variation in expenditures in the Winter Wheat region caused a substantial difference in variability between cash receipts and cash expenditures in that area. Statistical analysis verifies that cash expenditures fluctuated directly with cash receipts in both regions.

In analyzing variability in agriculture, it is important to give consideration to the relationship between cash expenditures and cash receipts. If cash expenditures are low in relation to cash receipts, a higher degree of variability can be tolerated from year to year than if cash expenditures absorb a high proportion of cash receipts. In the Southern Plains Winter Wheat region where the coefficient of variation was highest for cash receipts,

Table 4. CASH EXPENDITURES PER FARM

Farming Region	Average 1930-51	Low	High	Coefficient of Variation
Southern Plains Winter Wheat	\$2,812	\$1,320	\$ 5,691	46.6
Hog-Beef Fattening	5,134	1,506	13,438	69.88

SOURCE: U. S. Department of Agriculture.

Table 5. NET FARM INCOME PER FARM

Farming Region	Average 1930-51	Low	High	Coefficient of Variation
Southern Plains Winter Wheat	\$3,931	\$ -516	\$15,498	103.2
Hog-Beef Fattening	4,884	-364	13,300	84.1

SOURCE: U. S. Department of Agriculture.

average expenditures were 45 per cent of average receipts during the 1930-51 period. In the Hog-Beef Fattening region, which had the lowest variability in cash receipts, average cash expenditures were 55 per cent of average cash receipts. These data tend to verify that cash expenditures in the Plains region were a lower per cent of cash receipts from 1930-51 than they were in the Hog-Beef Fattening region of the Corn Belt. This low ratio of cash expenditures to cash receipts in the Winter Wheat region would cause variability to result in less risk than would exist in a region where cash expenditures are a large proportion of cash receipts.

#### Net Farm Income

Agencies extending credit to farmers probably are more interested in the size and stability of net farm income than in any other economic factor. The major requirements for making safe loans are satisfied if a farmer's net income is large enough to assure his ability to retire the loan and stable enough to be certain that he can make dependable repayments.

Data in Table 5 indicate that the average net incomes on family-operated farms in the two regions were large enough to provide for debt repayment capacity if the debt was not too large and the maturities were satisfactory. The average net farm income was lower in the Southern Plains Winter Wheat region than in the Hog-Beef Fattening region. This region also had the highest variability in net farm income. It is desirable from a credit viewpoint to have a high average income with low variability. Consequently, it appears that

the Winter Wheat region is in a less favorable position, since it has a slightly lower average net farm income and a higher degree of variability.

Two factors should be considered in an analysis of this type. First, the coefficient of variation is quite high in both regions and, as was pointed out previously, the representative farm in the Hog-Beef Fattening region was substantially larger than the representative farm in the Winter Wheat region. Thus, the analysis may be less representative of the average farm in the Hog-Beef Fattening region than is the case in the Winter Wheat region where large farms tend to predominate. Secondly, the net loss in the year of lowest income was not significantly different between the two regions. However, income in the year when it was highest was substantially higher in the Winter Wheat region than it was in the Hog-Beef Fattening region. This would lead to the conclusion that the higher coefficient of variation in the Winter Wheat region is accounted for largely by the fact that net incomes in this region show more fluctuation at the higher levels than do net incomes in the Hog-Beef Fattening region. Observation of net income data for the individual years for these two regions tends to confirm this. On the other hand, the coefficient of variation does not indicate whether the good and bad years tend to be grouped or to alternate. In general, observation of the data indicates the years tended to be grouped somewhat more in the Winter Wheat region. The difference between the two regions in this respect, however, was not substantial.

### Summary

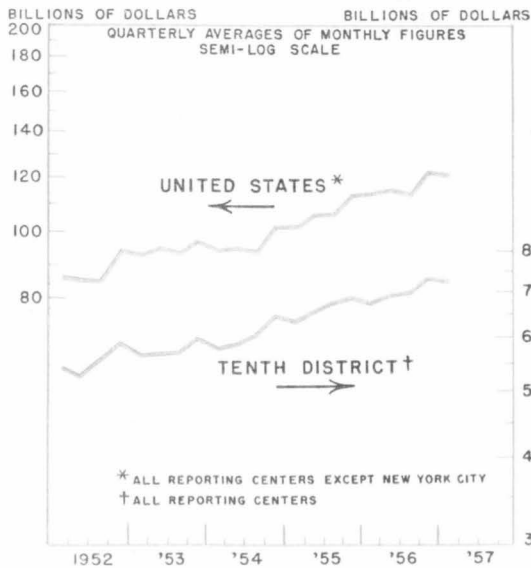
The idea prevails that farming in certain regions, particularly in the Great Plains area, has a high degree of variability, while in other regions such as the Corn Belt, variability is much less. This idea has become so thoroughly entrenched that at times it has been more difficult for farmers in these regions of high variability to obtain credit than it has been for farmers in other regions.

In general, an analysis of the data indicates that less difference in variability exists among the regions studied than is commonly believed. Furthermore, several factors tend to offset the advantage of a higher degree of stability in one region as compared with another. For example, cash expenditures in the Winter Wheat region tended to be substantially smaller in relation to cash receipts than they were in the Hog-Beef Fattening region. Thus, more variability can be tolerated in the Winter Wheat region than in the Hog-Beef Fattening region. Also, net farm incomes in the lowest years were almost as low in the Hog-Beef Fattening region as they were in the Winter Wheat region. However, in the years when they were highest, net incomes in the Winter Wheat region tended to be significantly higher than in the Hog-Beef Fattening region. This indicates that much of the additional variability in the Winter Wheat region can be accounted for by wider fluctuations in the years of high income. From a lender's viewpoint, it appears that the effects of variability in the Winter Wheat region during the 1930-51 period were but slightly more severe than in the Hog-Beef Fattening region.

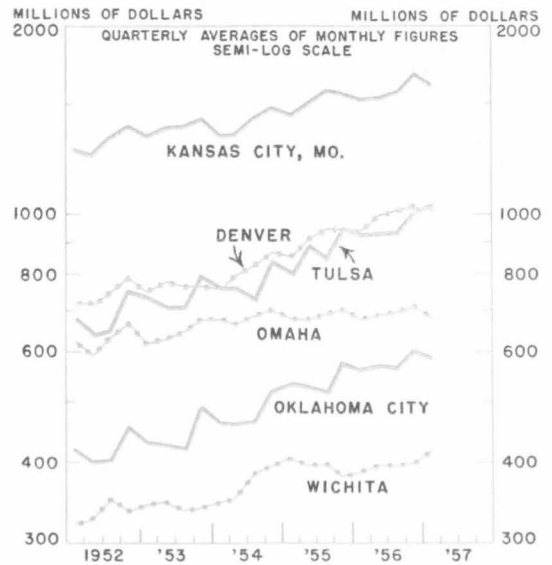


## BANK DEBITS DEBITS TO PRIVATELY HELD DEMAND ACCOUNTS

### TENTH DISTRICT AND UNITED STATES



### MAJOR DISTRICT CENTERS



NOTE: On a semi-logarithmic graph, equal slopes indicate equal rates of change.

### BANKING IN THE TENTH DISTRICT

District and States	Loans				Deposits			
	Reserve City Member Banks		Country Member Banks		Reserve City Member Banks		Country Member Banks	
	Mar. 1957	Apr. 1956	Mar. 1957	Apr. 1956	Mar. 1957	Apr. 1956	Mar. 1957	Apr. 1956
	April 1957 Percentage Change From							
Tenth F.R. Dist.	-2	-1	-2	+4	+2	+1	+2	+3
Colorado	†	+6	†	-2	†	+1	+3	+3
Kansas	-2	-5	-11	+4	+3	-3	+1	+2
Missouri*	-5	-4	-1	+7	+4	-1	+2	+4
Nebraska	-2	-5	-1	-1	+1	+1	+2	†
New Mexico*	**	**	+1	+8	**	**	†	+8
Oklahoma*	-1	-1	-1	+5	+4	+5	+2	+4
Wyoming	**	**	+4	+12	**	**	+4	+4

\*Tenth District portion only.

\*\*No reserve cities in this state.

†Less than 1 per cent.

### PRICE INDEXES, UNITED STATES

Index	Apr. 1957	Mar. 1957	Apr. 1956
Consumer Price Index (1947-49=100)	119.3	118.9	114.9
Wholesale Price Index (1947-49=100)	117.2	116.9	113.6
Prices Rec'd by Farmers (1910-14=100)	241	237	235
Prices Paid by Farmers (1910-14=100)	296	295	284

### TENTH DISTRICT BUSINESS INDICATORS

District and Principal Metropolitan Areas	Value of Check Payments		Value of Department Store Sales		*Value of Residential Building Permits	
	Percentage change—1957 from 1956					
	Apr.	Year to date	Apr.**	Year to date	Apr.	Year to date
Tenth F.R. Dist.	+9	+8	+6	-1	+13	-10
Denver	+11	+9	+7	-1	+164	+8
Wichita	+8	+8	+6	+1	+44	-11
Kansas City	+7	+6	+10†	-3†	-18‡	+1‡
Omaha	+3	+1	+8	-2	-34	-32
Okla. City	+3	+4	+3	-4	-12	-22
Tulsa	+16	+13	+7	+5	-42	-50

\*City only.

†Kansas City, Mo., only.

‡Kansas City, Mo., and Kans.

\*\*April increase partially reflects later Easter date this year.

