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6. Credit Experience and the Business Cycle

From the preceding analysis, it appears that both loan terms and certain borrower characteristics are capable of distinguishing broad groups of high-risk loans from low-risk loans at a given time. This suggests that a shift over time to easier terms or to less qualified borrowers would increase risk and produce less favorable repayment experience. Does this actually happen? It is one thing to infer that it must occur in view of the preceding evidence and quite another to show that it really does occur on a significant scale. For this, we need to examine changes in experience with respect to credit repayment and determine to what extent they are associated with prior changes in loan terms or borrower characteristics.

Here, however, we run up against the fact that changes in credit experience are related also to changes in business conditions, apart from any prior changes in the terms or types of borrowers financed. Hard times naturally bring more repayment difficulty. We need then to know something about the direct influence of the business cycle on credit experience, and that is taken up in this chapter. The next will attempt to trace the impact on credit experience of changes in the terms or in the characteristics of the borrowers, changes that may or may not also be associated with the business cycle. Both chapters are concerned with changes over the short run (periods of a year or two or three), not with the long-run changes of the kind considered briefly in Chapter 1.

THE SEQUENCE OF CHANGE IN DELINQUENCY, REPOSSESSION, AND LOSS

Differences in measurement methods can be the source of much confusion concerning the behavior of repayment difficulties during the

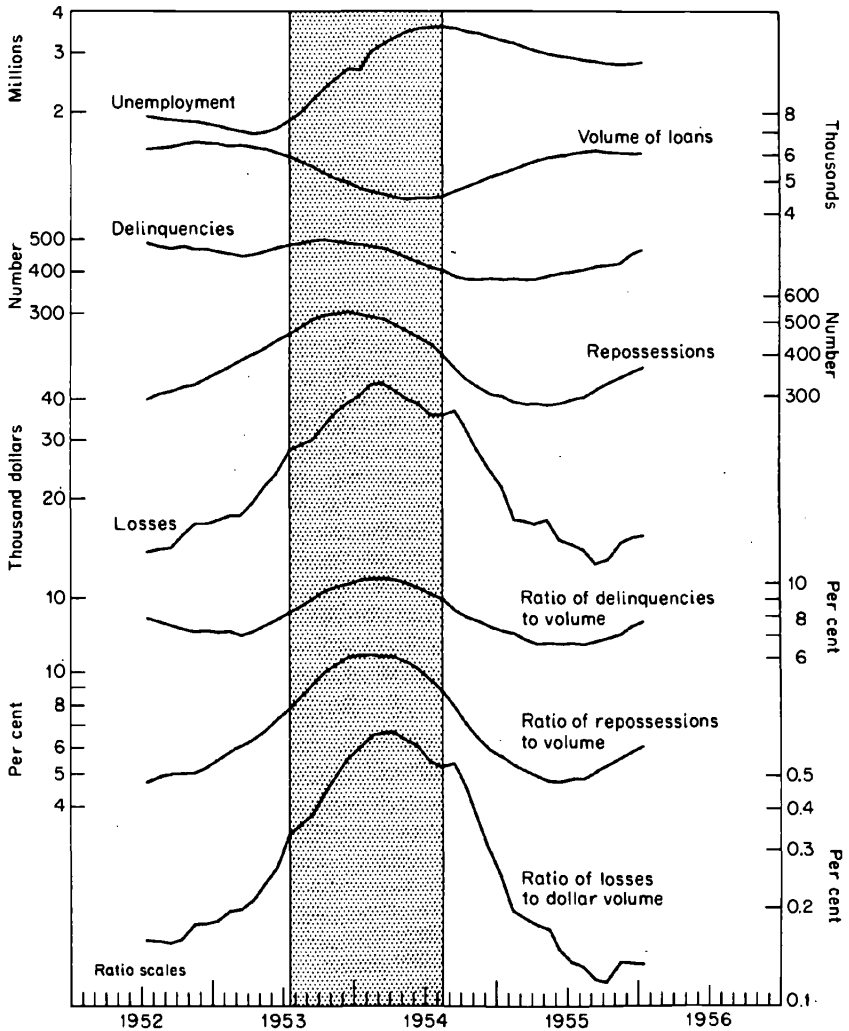
business cycle. The absolute volume of delinquencies, for example, might begin to rise as a business recovery gets under way simply because the recovery brings with it an increase in the volume of consumer lending. Accordingly, one is likely to shift attention from absolute measures such as the number of delinquent loans, the number of repossessions, or the dollar amount of losses to relative measures of such difficulties—i.e., the percentage of loans delinquent, the percentage of articles financed that were repossessed, or the loss rate. Such measures of the relative incidence of unfavorable loan experience may also be deceptive, however. A sharp decline in the volume of new lending may cause the relative measures to rise for a time even though there has been little change or even a decline in the level of unfavorable experience.

Further complications arise as a result of the use of different bases to measure relative collection experience. For example, the behavior of repossessions taken as a percentage of loans made during the period may be different from the measure relating repossessions to outstandings or repossessions to collections or liquidations. Since the repossessions made during a given month, for the most part, come from a different (older) loan population than the loans made during the month, the propriety of using the latter as the base may be questioned. The question is less serious when the time unit is a year rather than a month, because a large proportion of repossessions occur within the first few months after a loan is made. Furthermore, since the cyclical behavior of loan volume differs from that of outstandings, the cyclical behavior of the repossession rate will depend on which is used as the base. The measure used, therefore, must be carefully specified if confusion is to be avoided, and the use of several measures instead of a single one is a valuable safeguard. (Cf. Appendix C for more detailed consideration of measures of collection difficulty.)

It is obvious, of course, that collection difficulties are likely to show a decided relationship to changes in the level of business activity, increasing when overtime pay is eliminated, hours of work reduced, wages cut, and some employees lose their jobs, and diminishing when prosperity reverses these developments. The sequence of collection difficulties is well demonstrated in Charts 14 and 15, which show moving averages of volume of automotive loans, delinquent accounts, repossessions, and losses monthly (1952-56) for two samples, one of

CHART 14

Delinquencies, Repossessions, and Losses on Automobile Loans, in Relation to Unemployment and Volume of Loans, Three Banks, 1952-56

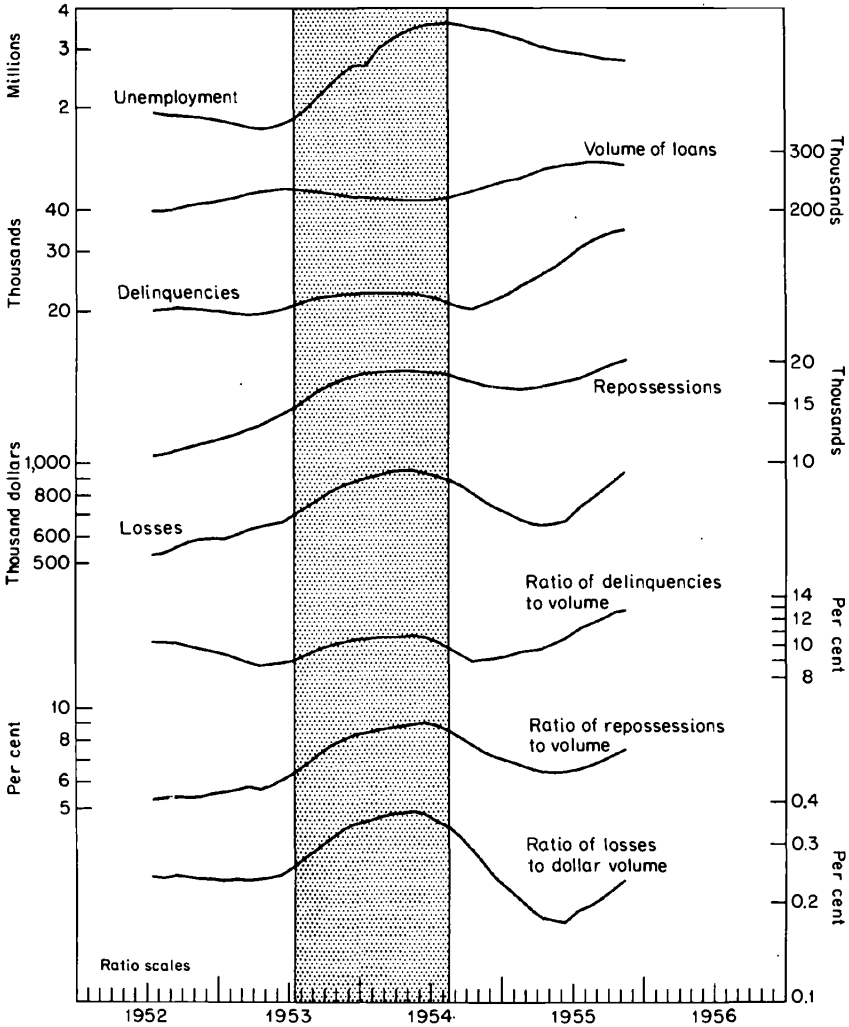


SOURCE: Unpublished data supplied to the NBER.

NOTE: Shaded area represents business cycle contraction.

CHART 15

Delinquencies, Repossessions, and Losses on Automobile Loans, in Relation to Unemployment and Volume of Loans, Three Sales Finance Companies, 1952-55



SOURCE: Unpublished data supplied to the NBER.

NOTE: Shaded area represents business cycle contraction.

three banks, the other of three finance companies. In quite regular fashion peaks were reached during the mild business contraction of 1953-54, first in the number of delinquent accounts, next in the number of repossessions, and last in the dollar amount of losses. The timing sequence at the troughs in 1954-55 is the same. The logic of this sequence is clear: it follows from the process by which collection difficulties first manifest themselves when monthly payments become overdue, which may then lead to voluntary or involuntary repossession of the article securing the loan, its eventual sale in a market characterized perhaps by falling prices of used durable goods, and the ultimate write-off of losses on the books of the lending institution.¹

The timing of the troughs and peaks of each of the measures of collection difficulty at the business cycle peak of July 1953 and trough of August 1954 is given in Table 38. All of the entries for this small sample are leads. More persuasive evidence that delinquency rates tend to turn up some months prior to the onset of a business recession and to turn down before a recovery starts is provided by the monthly series compiled by the American Bankers Association subsequent to 1948. Seasonally adjusted data for delinquencies of various durations on direct and indirect (purchased) automobile loans are shown in Chart 16. The rates are based on the number of delinquent accounts relative to the total number outstanding. The timing of cyclical peaks and troughs in these rates relative to business cycle

¹ The movements of and relations among the measures of collection difficulty are subject to shifts in administrative procedure. For example, part of the sharp rise in the spring of 1955 in both the absolute and relative measures of delinquencies for sales finance companies (Chart 15) is attributable to a change in the administrative practices of one company included in the sample. According to this company, "In March 1955, a policy change was made in . . . collection procedure under which less intensive collection effort was given to those accounts which had accumulated a sufficiently large customer equity to indicate the probability of assured payment."

A more subtle difficulty encountered in analyzing collection difficulties arises as a result of recourse arrangements between the ultimate lender and the retailer whereby the latter agrees to absorb all or part of the loss encountered on loans he originates. The result is that while delinquency and repossession figures of banks and sales finance companies as shown in Charts 14 and 15 usually include collection difficulties arising in the case of both recourse and nonrecourse contracts (see, however, footnote 3), measures of losses shown in the charts include only losses on nonrecourse paper. It is possible that the timing of losses charged to dealers under recourse agreements would not differ significantly from those arising from nonrecourse contracts, although the level and trend of the reported (nonrecourse) losses would be affected by shifts in the proportion of business done on a nonrecourse basis.

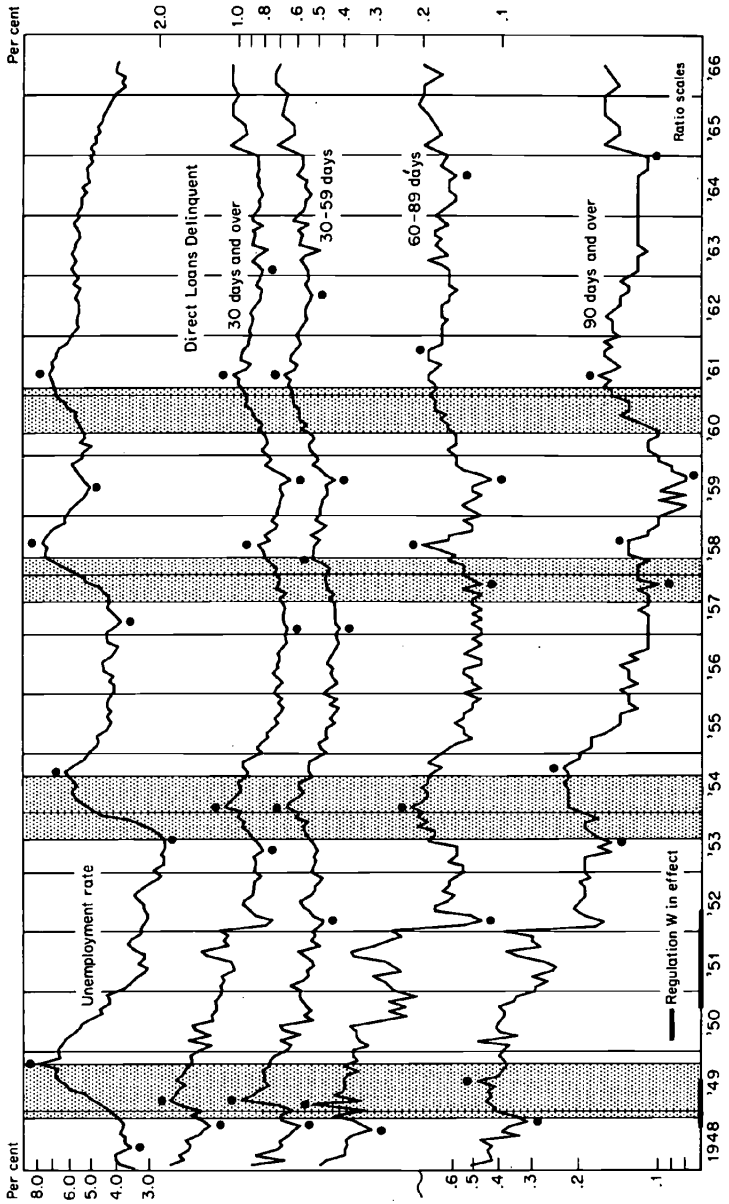
TABLE 38

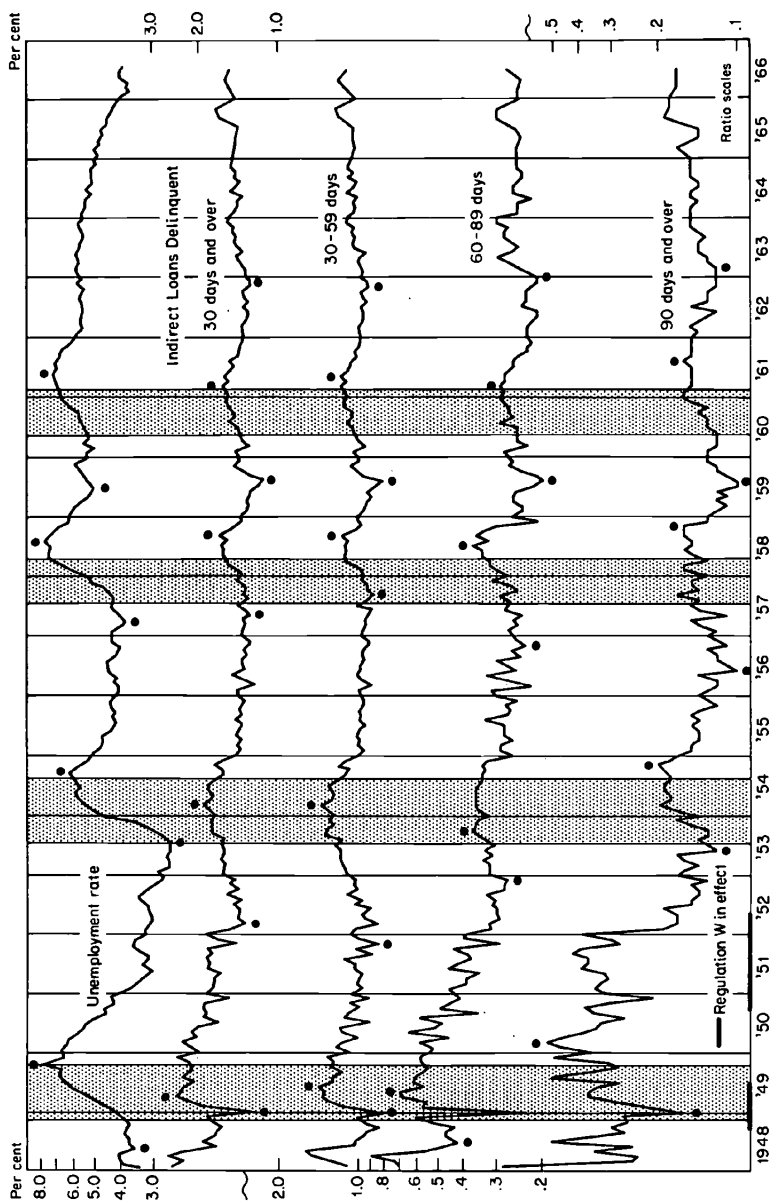
Cyclical Highs and Lows in Delinquencies, Repossessions, and Losses, Automobile Contracts, 1953-55

Item	Low Corresponding to July 1953 Business Cycle Peak		High Corresponding to August 1954 Business Cycle Trough		Subsequent Low, to End of 1955
	Date	Lead (months)	Date	Lead (months)	
Delinquencies	March 1953	4	October 1953	10	October 1954
Repossessions	Before July 1952	--	December 1953	8	May 1955
Losses	Before July 1952	--	March 1954	5	September 1955
<i>3 Banks</i>					
Delinquencies	March 1953	4	February 1954	6	October 1954
Repossessions	Before July 1952	--	May 1954	3	February 1955
Losses	Before July 1952	--	May 1954	3	April 1955
<i>3 Sales Finance Companies</i>					

Source: Based on National Bureau data for three banks and three sales finance companies, each of which reported monthly volume, delinquency, repossession, and losses on automotive loans. Data were smoothed by a twelve-month moving average centered on the seventh month.

CHART 16
Unemployment Rate and Delinquency Rates on Automobile Loans by Banks,
1948-66





Source: Unemployment rate, Bureau of Labor Statistics; delinquency rates, adjusted to level of currently published data and issued bimonthly after October 1964 by American Bankers Association.

Note: All series adjusted for seasonal variations by NBER. Shaded areas represent business cycle contractions. Dots identify specific cycle peaks and troughs.

troughs and peaks is entered in Table 39, together with similar data for the unemployment rate. The table suggests that the leads in the delinquency rates may be somewhat longer at business cycle peaks than at troughs; that is, the rise in delinquencies usually begins well before business activity turns down, whereas the decline in delinquencies usually begins only a short time before business begins to improve. In this respect, delinquencies resemble the unemployment rate at business cycle peaks since they both tend to lead, but at troughs delinquency rates have nearly always preceded the corresponding turns in the unemployment rate.² On the average, too, the turns in delinquencies of short duration have preceded those of longer duration, though this has not happened at every turn.

As for the differences between direct and indirect loans, the short-duration delinquency rates on direct loans have been consistently lower than those on indirect loans, while the more serious delinquencies, those of ninety days and over, have been at substantially the same rate on both types. That is, at any given time, about the same proportion of direct and of indirect loans have been delinquent ninety days or over, but a larger proportion of the indirect loans have been delinquent less than ninety days.³ Despite these differences in level, the cyclical move-

² If the leads or lags in delinquencies are measured with respect to the turns in the unemployment rate rather than (as in Table 39) the business cycle turns, the difference between peak and trough timing which shows up in the table largely disappears. The variability of the timing of delinquencies about the turns in the unemployment rate is as great, however, as it is about the business cycle turns. The distinctive timing of the unemployment rate, Arthur F. Burns has suggested, can be understood in terms of the following model: Assume that the labor force grows at a constant rate throughout the business cycle, but that employment rises at a diminishing rate toward the end of a cyclical expansion. Then the unemployment rate will reach its trough before employment reaches its peak. Similarly, if employment rises slowly at the beginning of a cyclical expansion, the unemployment rate will reach its peak after the low point in employment. To put it differently, the employment *rate* (employment divided by labor force) will, under the assumed conditions, reach its peaks earlier and its troughs later than the corresponding turns in the number employed; turns in the unemployment rate will occur, of course, at the same time as the opposite turns in the employment rate.

³ Apparently the similarity of the ninety day delinquency rates for direct and indirect loans has to do with a common practice with regard to recourse on indirect loans, whereby the banks agree to repossess within ninety days of the onset of delinquency if the loan is to be returned to the dealer. The result is, in effect, a reduction in indirect loans delinquent more than ninety days to approximately the levels for direct loans, since no recourse is to be had on either. We are indebted to J. Howard Craven of the Bank of America for this explanation.

TABLE 39
*Timing of Delinquency Rates on Automobile Loans by Banks,
 and the Unemployment Rate, at Business Cycle Turns, 1948-61*

	Lead (-) Or Lag (+), In Months, Of Corresponding Turn In												
	Unemployment Rate	Delinquency Rate on Direct Loans				Delinquency Rate on Indirect Loans				30 Days & Over	30 Days & Over	30 Days & Over	
		30-59 Days	60-89 Days	90 Days & Over	30 Days & Over	30-59 Days	60-89 Days	90 Days & Over					
<u>Business Cycle Peak</u>													
November 1948	-6	-2	-2	0	-2	+2	-4	+2	+2	-4	+2	+2	+2
July 1953	0	-16	-16	0	-2	-20	-8	-2	-2	-8	-2	-2	-16
July 1957	-4	-6	+4	+4	-6	+2	-8	-14	-14	-8	-14	-14	-2
May 1960	-11	-10	-10	-8	-10	-10	-10	-10	-10	-10	-10	-10	-10
Median, at peaks	-5	-8	-6	0	-4	-4	-8	-6	-6	-4	-6	-6	-6
<u>Business Cycle Trough</u>													
October 1949	0	-8	-8	-4	-8	-4	-6	+4	+4	-6	+4	+4	-6
August 1954	+1	-6	-6	+2	-6	-6	-10	+2	+2	-10	+2	+2	-6
April 1958	+3	0	+2	+4	+2	+4	+2	+6	+6	+4	+6	+6	+4
February 1961	+3	+2	+8	+2	+2	+2	0	+2	+2	+2	+6	+6	0
Median, at troughs	+2	-3	-2	+2	-2	-1	-3	+5	+5	-1	-3	-3	-3
<u>Peaks and Troughs</u>													
Median	0	-6	-4	+1	-4	-1	-7	+2	+2	-1	-7	+2	-4
Average deviation	3.5	4.2	6.5	3.0	3.8	6.2	3.5	5.2	5.2	6.2	3.5	5.2	5.2

Source: Unemployment rate, BLS; Delinquency rates, ABA, *Delinquency Survey*. Series are adjusted for seasonal variation and the delinquency rates are raised to the level of currently published data.

Note: Troughs in the unemployment and delinquency rates are matched with business cycle peaks, and peaks with business cycle troughs. For delinquency rates the leads and lags are computed from end-of-month data; the resulting entries expressed in half months are rounded to the nearest even number. The median is the middle item in the array, or the mean of the two middle items. The average deviation is computed from the median.

ments and the timing of the direct and indirect rates have been very much alike. Leads predominate over lags, and the leads of the short-duration delinquencies are longer, on the average, than those of the longer duration.⁴

While it is evident from Charts 14 and 15 that on a monthly basis loss rates on automotive loans do not necessarily reach their peak precisely at the business trough, on a yearly basis there is likely to be considerably greater agreement between peaks in loss rates and business cycle troughs (Chart 17). Table 40 shows that since 1929 the loss rates of sales finance companies reached their peak in the same year as business reached its trough on four out of seven occasions. One exception occurred in 1953-54, one immediately after World War II, the third during the Great Depression, when loss rates were apparently higher shortly after the depression began (i.e., in 1930), rather than when it reached its ultimate depth (in 1932). Possibly significant is the fact that two of these are the only business contractions that, on an annual basis, lasted more than one year. That is to say, another way of looking at the evidence is to say that the highest loss rates invariably occurred one year after a business contraction began; improvement thereafter was the rule.

This way of viewing the matter corresponds to the characteristic pattern at business cycle peaks: loss rates reach their lowest point prior to the business peak and rise in the later stages of the expansion. This happened in no less than five out of seven occasions and may have occurred in one of the remaining two (1929), but data are not available to determine it.

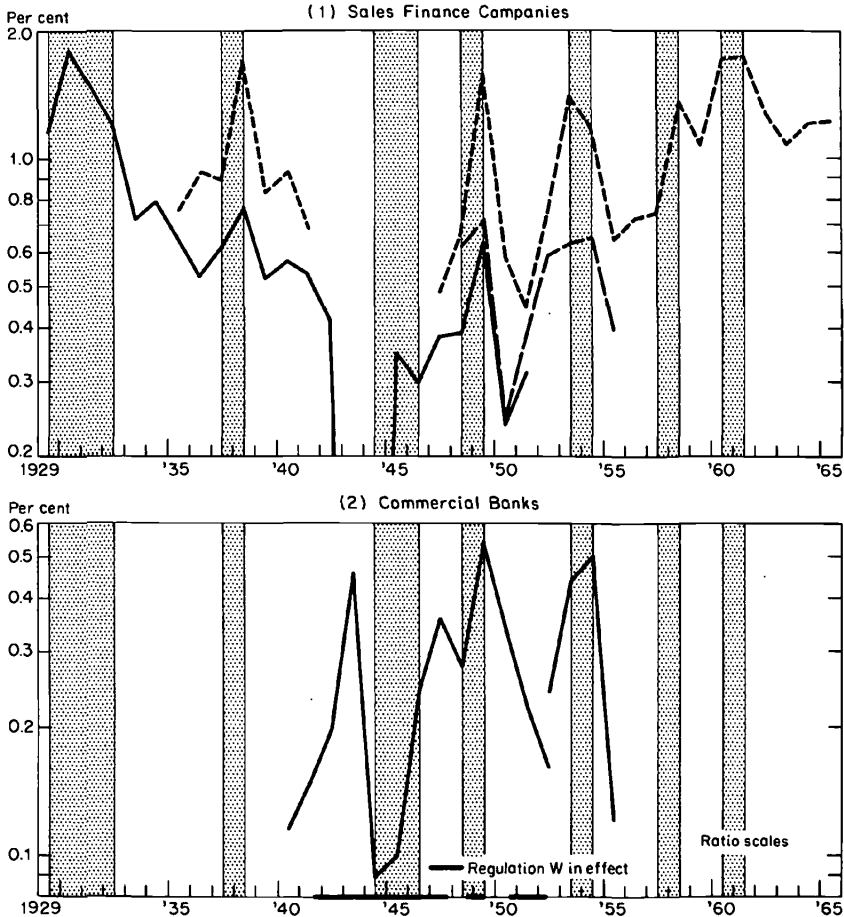
The evidence is, then, that delinquency and loss rates are likely to be high at or near the bottom of a depression, and conversely, low at or before the peak of prosperity. This inverse conformity is surely

⁴ Annual data on instalment loan delinquencies of ninety days or more on auto loans outstanding at approximately 4,000 national banks, published in the Annual Report of the Comptroller of the Currency, are as follows: 1956, 0.33 per cent; 1957, 0.20 per cent; 1958, 0.28 per cent. Data are not shown for later years. These figures, which represent the ratio of unpaid balances of delinquent loans to total outstanding for banks examined during the year, are substantially higher than those reported by the ABA for the same periods (cf. Chart 16). Since the ABA data are ratios of the number of loans delinquent to number outstanding, this suggests a greater frequency of delinquency among the larger loans, which seems unlikely. A more likely explanation is that it is due to differences in the samples of banks, with the comptroller's sample including more small banks with higher delinquency rates.

CHART 17

Loss Rates, 1929-65

Losses as percentage of outstandings (automobile paper)
 Losses as percentage of repayments (all retail paper)



SOURCE: (1) Sales finance companies—1929-51: James F. Winchester, *Consumer Installment Loan Losses and Valuation Reserves*, Cambridge, Mass., 1955, Table 10, p. 33; five sales finance companies, loss rates based on average outstandings for the year. 1948-55: NBER Consumer Credit Quality Study, five sales finance companies, 1935-41. 1947-65: First National Bank of Chicago sample of nineteen sales finance companies. (2) Banks—1940-52: Winchester, *Consumer Installment Loan Losses*, Table 12, p. 39; five banks, loss rates based on average outstandings for the year. 1952-55: NBER Consumer Credit Quality Study, five banks; loss rates are on direct loans only.

NOTE: Shaded areas represent business cycle contractions; 1943 and 1944 are not shown because there were net recoveries instead of net losses.

TABLE 40

*Timing of Loss Rates at Business Cycle Turns,
Sales Finance Companies, 1929-61*

Business Cycle Peak	Trough in Loss Rates		Business Cycle Trough	Peak in Loss Rates	
	Date	Lead (-) or Lag (+), in Years		Date	Lead (-) or Lag (+), in Years
1929	1929 ^a	0	1932	1930	-2
1937	1935 ^b	-2	1938	1938	0
1944	1944	0	1946	1945	-1
1948	1946	-2	1949	1949	0
1953	1951 ^b	-2	1954	1953	-1
1957	1955	-2	1958	1958	0
1960	1959	-1	1961	1961	0

Source: For 1929-35 and 1941-47, losses on automobile paper as a percentage of average outstandings of five sales finance companies, James P. Winchester, "Consumer Installment Loan Losses and Valuation Reserves," Cambridge, Mass., 1955, Table 10, p. 33. For 1935-41 and 1947-61, losses on all instalment receivables as a per cent of repayments, First National Bank of Chicago, "Ratios of the Instalment Sales Finance and Small Loan Companies.

^aTentative. Data prior to 1929 not available.

^bWinchester data show troughs in 1936 and 1950.

the pattern one would expect if the average quality of loans, in terms of the standards applied by lenders, remained the same throughout the cycle. In that event, the difficulties occasioned by a depression would cause some loans that would otherwise have been "good" to go "bad"; similarly, the improvement in incomes occasioned by prosperity would cause some loans to remain good that might otherwise have gone bad. Losses would mount as income or employment declined, and would diminish as income or employment improved. But what if the quality of lending varies over the cycle? Suppose that lenders and borrowers alike are induced to take greater risks in prosperous times—risks that might lead to trouble even though conditions remained prosperous and to more trouble if they changed for the worse. And suppose, on the other hand, that risk taking becomes less popular in de-

pression, so that only the very safest loans are entered into. How would the pattern of losses be altered?

Taken by itself, the pattern of risk taking just described should lead to a pattern of loss rates that would move *with* the business cycle with some lag. The length of the lag would depend on the period of time it took for losses to develop on loans. In the case of instalment credit this is not very long; a substantial fraction of repossessions, for example, occurs before the first half-dozen monthly payments have been made. One would expect, therefore, that losses would become more and more frequent as prosperity advanced and riskier loans were entered into. Conversely, as depression deepened and more and more conservative attitudes prevailed, losses would diminish.

The direct influence of income, unemployment, and associated factors on losses obviously dominates their behavior in fact. But if the pattern of quality change described above actually occurred, one would not expect losses to be a perfect counterpart of unemployment. Rather, toward the end of a contraction in income, losses might begin to diminish because of the preceding improvement in quality and despite the continued decline in income; and toward the end of an expansion in income, losses might begin to increase because of the preceding deterioration in quality and despite the continued improvement in income. Thus the combined effect of the change in income and the change in quality might be to make the peak in losses come earlier than the trough in income, and the trough in losses earlier than the peak in income. This would be especially likely if income were to decline more slowly as it reached its trough, and to rise more slowly when it neared its peak, while risk-taking propensities varied in opposite fashion, accelerating in the later stages of prosperity and dropping off more rapidly in the later stages of business contraction. This hypothesis might explain the pattern of delinquency rates and losses on auto loans that emerges from the data presented. However, the monthly estimates of delinquency risk developed in Chapter 7 from information on the quality characteristics of commercial bank loans do not, in fact, provide much, if any, support for it (see Chart 27, below). The cyclical movements in these data are slight, and it is difficult to discern any trace of the pattern hypothesized. Another possibility is that delinquency may be especially sensitive to certain developments that typically occur prior to downturns in general busi-

ness activity, such as reductions in overtime earnings. We need much fuller data than we possess at present to test these propositions adequately.

REGIONAL AND LOCAL VARIATIONS IN LOAN EXPERIENCE
DURING BUSINESS CYCLES

The preceding section considered the process of change in delinquency, repossession, and loss in terms of countrywide data, or samples undifferentiated with respect to geographic origin. Regional or local data can extend this analysis in two ways. First, time series for each of a number of regions can be treated in the same way as national data, thus multiplying the number of observations of this type. Second, variations among regions at a given time can be considered. Here, for example, we can direct our attention to the question whether those areas that experience the sharpest changes in income and employment also experience the sharpest (inverse) changes in credit collection experience. If for the country as a whole variations in loan experience are attributable to variations in the severity of economic fluctuations, we should be able to substantiate this by examining more restricted sections of the economy and determining whether those areas most depressed or those experiencing especially prosperous conditions exhibit the expected differences in repayment experience. Regional and local analyses can thus serve to measure the strength of the relationship between changes in income and employment, on the one hand, and changes in credit experience, on the other, and perhaps to suggest the effects of recessions more severe than those of the postwar period.

This method of analysis is important also for another reason. Whether or not we can assume that sharp economic contractions have been banished at the national level, it is clear from experience in recent recessions that they remain at the local level. In each of these recessions, some areas experienced severe drops in employment or income. If the relationship under discussion is substantiated, these areas may have experienced more serious credit difficulty as well, creating a problem of concern both to the areas themselves and to those who do business with them.

Two types of geographically differentiated data are available, one

covering broad regions of the country, the other the twelve metropolitan areas referred to earlier. The regional data include the American Bankers Association's delinquency series, data on losses and repossessions which we have developed on the basis of our own sample of reporting banks, and employment and personal income for the corresponding regions. The metropolitan areas were selected from those for which the Bureau of Labor Statistics reports labor market conditions, and included some with a balanced labor supply (in 1954) and some with a substantial labor surplus (high unemployment). To employment data for these areas we have attempted to relate information on delinquency, repossessions, and losses obtained from individual banks and sales finance company offices located in the same places.

Regional Variations. We begin by examining the regional employment and income patterns for the period 1948-64. The annual data gathered in Appendix E do not give as precise a picture of cyclical movements as would monthly or quarterly data. The latter would no doubt reveal more widespread and larger declines than the annual data show. Nevertheless, eight of the nine regions experienced year-to-year declines in nonfarm employment in the 1948-49 recession. The sharpest declines occurred in the East South Central, East North Central, Middle Atlantic, and New England regions. In the 1953-54 recession, the four regions in the industrialized eastern section of the country again revealed their cyclical sensitivity, though there was a decline in all nine regions. In the 1957-58 recession, all but one region experienced a decline in employment, but the sharpest declines were in the same four regions as before. In the 1960-61 recession, declines in employment occurred in only three regions. This time the East North Central and Middle Atlantic were joined by the West North Central states.

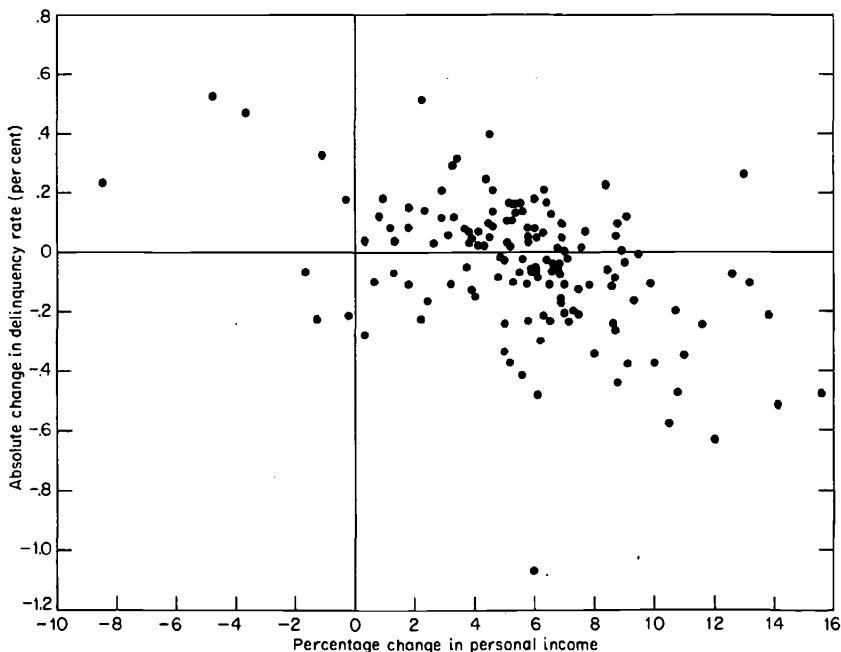
The regional changes in personal income are, of course, correlated with those in employment. As a rule, however, personal income either did not decline or declined less than employment in each of the four postwar recessions, and income usually increased faster than employment in the years between.

The range of variation among the regions in respect of change in income or employment is considerable. For example, in each recession, the region with the largest percentage decline in employment ex-

perienced roughly twice as large a decline as that shown by the countrywide totals. Moreover, if we take as a standard of comparison the decline in nonfarm employment in the country as a whole in 1937-38 (5.9 per cent), which was one of the sharpest contractions on record, the largest regional declines in employment are quite substantial. They reached 4.1 per cent in the New England states in 1948-49, 4.4 per cent in the East North Central states in 1953-54, and 5.6 per cent in the same region in 1957-58. In terms of income, on the other hand, even the largest regional declines in the 1954 or 1958 recessions (1.3 and 0.7 per cent respectively) were small compared with the 7.3 per cent nationwide drop in 1937-38. Income has become much more stable than employment.

CHART 18

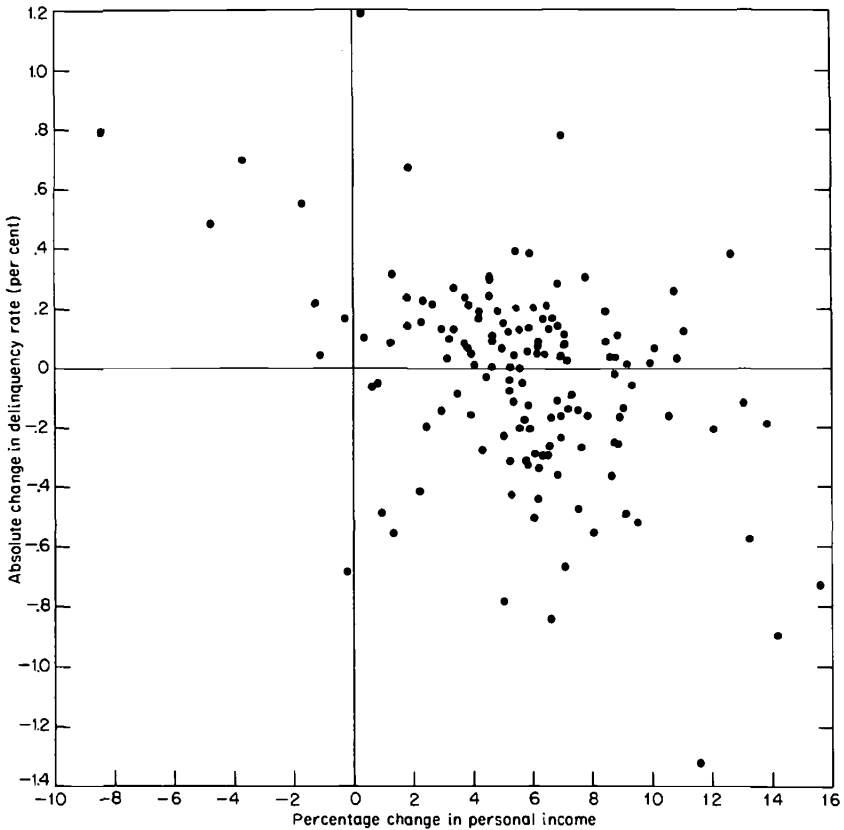
Year-to-Year Change in Income and in Delinquency Rates on Direct Automobile Loans, Nine Regions, 1948-64



SOURCE: Tables E-1 and E-3.

CHART 19

Year-to-Year Change in Income and in Delinquency Rates on Indirect Automobile Loans, Nine Regions, 1948-64



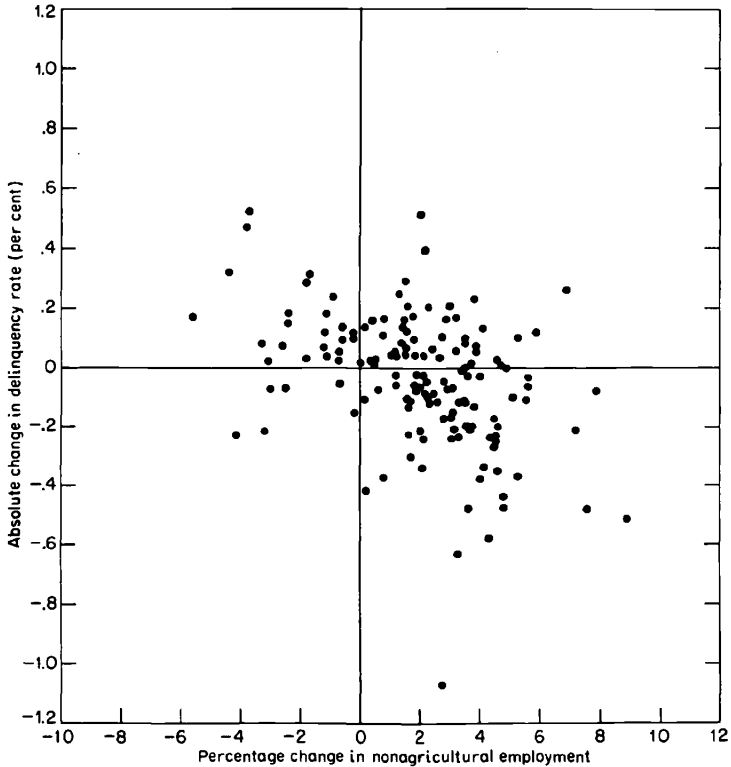
SOURCE: Tables E-1 and E-3.

What happened to credit collection experience in these regions during this period? Appendix E shows the levels and year-to-year changes in delinquency rates for both direct and indirect automobile loans by commercial banks in each of the nine regions, and Charts 18, 19, 20, and 21 depict the relation between the change in income or employment and the change in delinquency.

Obviously, there is a decided tendency for delinquency rates on both direct and indirect loans to increase when income or employment

CHART 20

Year-to-Year Change in Employment and in Delinquency Rates on
Direct Automobile Loans, Nine Regions, 1948-64



SOURCE: Tables E-2 and E-3.

drops and to decrease when they rise. Table 41 summarizes the relationship. It indicates, for example, that a year-to-year decline in income of about 6 per cent has raised delinquency rates about half of one per cent. Such a drop in income and rise in delinquency rates greatly exceeds any year-to-year change that has occurred on a countrywide basis since 1948.

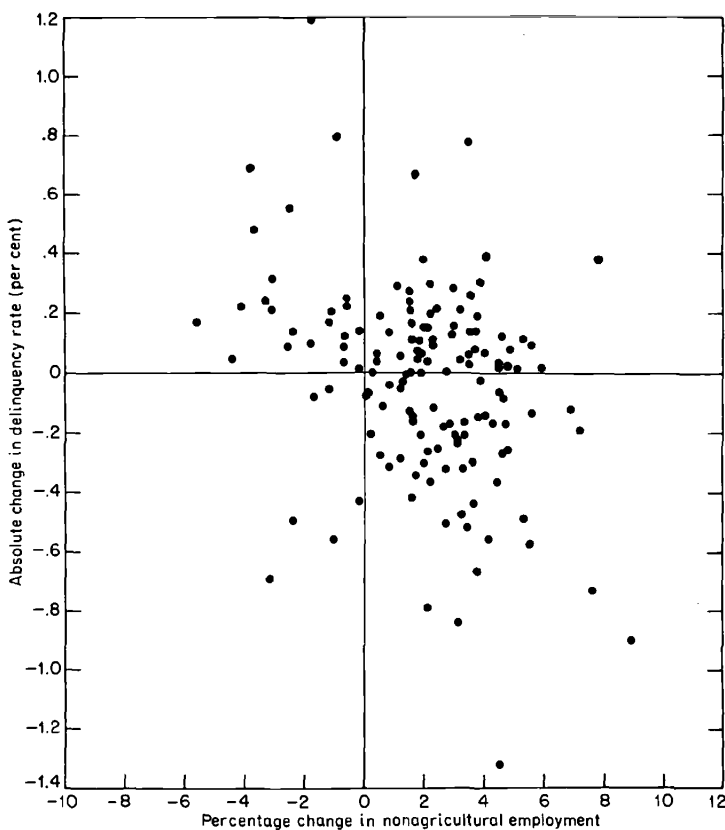
However, the wide scatter of points in Charts 18-21 indicates that many other factors besides the contemporary change in income or employment affect delinquency rates. The persistence of depressed

conditions in an area, variations in lending terms and standards, and the efforts of different lending institutions to reduce delinquency by increased collection effort or refinancing must all be taken into account.

Does the relationship we have observed between delinquency rates and income and employment changes hold also for the repossession and loss rates? Table 42 presents regional repossession and loss rates based on our own bank sample. It must be emphasized that this sample

CHART 21

Year-to-Year Change in Employment and in Delinquency Rates on Indirect Automobile Loans, Nine Regions, 1948-64



SOURCE: Tables E-2 and E-3.

TABLE 41

*Regional Changes in Income and Employment and
Associated Changes in Delinquency Rates on Auto Loans, 1948-64*

Class Interval	Average Change in Delinquency Rates		Number of Observations
	On Direct Loans	On Indirect Loans	
Percentage Change in Personal Income			
-11.9 to -8.0	+ .236	+ .794	1
-7.9 to -4.0	+ .525	+ .479	1
-3.9 to 0.0	+ .074	+ .161	6
+0.1 to +4.0	+ .039	+ .081	30
+4.1 to +8.0	- .042	- .058	77
+8.1 to +12.0	- .187	- .132	23
+12.1 to +16.0	- .191	- .356	6
Percentage Change in Non- agricultural Employment			
-7.9 to -4.0	+ .089	+ .140	3
-3.9 to 0.0	+ .079	+ .133	27
+0.1 to +4.0	- .043	- .045	87
+4.1 to +8.0	- .170	- .163	26
+8.1 to +12.0	- .517	- .898	1

Source: Tables E-1, E-2, E-3.

is very small for each region and the results must be considered merely suggestive of the relationship more extensive data and analysis might reveal. In 1954, when employment fell in all regions and income either fell or rose at a much slower rate, the repossession rate went up in every case, and it went down in 1955 as income and employment resumed their advance. The loss-rate picture is fairly similar, although two regions show higher loss rates in 1953 than in 1954.

Local Variations. Our analysis of metropolitan area data differs from that for the regions in three respects. First, we have included delin-

quency rates on all instalment loans which are reported to the American Bankers Association, as well as on automobile loans separately. Second, we consider sales finance company as well as bank experience. Third, we utilize quarterly data to examine the sequence of change in delinquency, repossession, and loss.

The most significant conclusion reached on the basis of the regional analysis is again the most striking fact revealed by the local data. In the 1954 contraction, when nonagricultural employment declined in ten of the eleven cities examined, the delinquency rate rose in eight

TABLE 42

*Repossession and Loss Rates on Auto Loans Reported by Banks,
Six Regions, 1953-55*

Region	Number of Banks Reporting	1953	1954	1955
<i>Repossession Rates (per cent)</i>				
Pacific	4	6.45	8.73	4.05
West North Central	2	6.67	7.71	5.74
East North Central	3	1.03	2.05	.36
South Atlantic	2	9.08	12.41	8.24
Middle Atlantic	4	1.34	2.27	1.79
<i>Loss Rates (per cent)</i>				
Pacific	2	.190 ^a	.507	.072
Mountain	2	.398	.328	.079
West North Central	2	.206	.274	.169
East North Central	3	.591	.459	.219
South Atlantic	1	n.a.	.389	.064
Middle Atlantic	2	.185	.329	.233

Source: National Bureau Consumer Credit Quality Study. Repossession rates are based on number of loans made, loss rates on dollar volume of loans made. The 1955 coverage ratio for banks reporting repossessions is 16.1 per cent; for banks reporting losses, 7.9 per cent. The coverage ratio compares the 1955 dollar volume of automobile paper reported by banks in the sample with that for all commercial banks as estimated by the Federal Reserve Board.

n.a. = not available.

^aOne bank only.

TABLE 43.

*Changes in Nonagricultural Employment and in Delinquency on
Direct Automobile Loans by Banks, 11 Cities, 1953-55*

City and Number of Banks	Percent- age Change in Nonagri- cultural Employ- ment (1)	Percent- age Change in Number of Delin- quent Loans (2)	Percent- age Change in Number of Loans Out- standing (3)	Delin- quency Rate (per cent)		Change in Delin- quency Rate (6)
				1953	1954	1953-54
	<u>1953-54</u>	<u>1953-54</u>	<u>1953-54</u>	<u>1953</u>	<u>1954</u>	<u>1953-54</u>
Detroit (3)	-11.4	+147.7	+14.8	.64	1.38	+74
Pittsburgh (1)	-9.2	0.0	-17.8	.17	.21	+0.4
Denver (4)	-5.7	-11.1	-1.6	.89	.81	-.08
Indianapolis (3)	-4.6	+40.9	+11.4	.27	.34	+07
Philadelphia (5)	-4.5	+68.6	+45.4	1.33	1.54	+21
St. Louis (3)	-4.5	+5.8	+12.0	1.84	1.74	-.10
Chicago (3)	-3.8	+37.2	+2	1.11	1.52	+41
Atlanta (2)	-3.4	-39.0	-4.9	1.97	1.26	-.71
New York (3)	-1.8	-6.3	-10.5	.45	.47	+02
Los Angeles (3)	-.8	+101.9	+72.8	.77	.90	+13
Dallas (1)	+1	+100.0	-23.8	.17	.46	+29
	<u>1954-55</u>	<u>1954-55</u>	<u>1954-55</u>	<u>1954</u>	<u>1955</u>	<u>1954-55</u>
New York (3)	-.3	-45.7	-.6	.47	.26	-.21
Philadelphia (5)	+3	-12.7	-.7	1.54	1.36	-.18
St. Louis (3)	+2.1	-31.0	+9.7	1.74	1.09	-.65
Chicago (3)	+2.5	-55.8	+2.1	1.52	.66	-.86
Dallas (1)	+2.7	-40.0	-.2	.46	.27	-.19
Pittsburgh	+3.6	+27.8	+25.6	.21	.22	+01
Indianapolis (3)	+5.1	+54.8	+56.3	.34	.34	0
Denver (4)	+5.5	+31.2	+27.2	.81	.83	+02
Los Angeles (3)	+6.2	-13.9	+22.4	.90	.64	-.26
Atlanta (2)	+8.2	-37.2	-5.0	1.26	.84	-.42
Detroit (3)	+8.5	-49.5	+5.1	1.38	.66	-.72

Source: U.S. Bureau of Employment Security and unpublished ABA data.

Note: Data refer to July of each year. Delinquency figures are for loans delinquent over thirty days; rates are percentage of loans outstanding.

TABLE 44

Changes in Nonagricultural Employment and in Delinquency on All Instalment Loans Reported by Banks, 9 Cities, 1953-55

City and Number of Banks	Percent- age	Percent- age	Percent- age	Delin- quency		Change in
	Change in Nonagri- cultural Employ- ment (1)	Change in Number of Delin- quent Loans (2)	Change in Number of Loans Out- standing (3)	Rate (per cent) (4)	Rate (5)	Delin- quency Rate (6)
	<u>1953-54</u>	<u>1953-54</u>	<u>1953-54</u>	<u>1953</u>	<u>1954</u>	<u>1953-54</u>
Detroit (3)	-11.4	+80.5	-2	1.36	2.46	+1.10
Denver (4)	-5.7	-21.9	-6.8	2.13	1.79	-34
Indianapolis (3)	-4.6	+32.8	+23.0	1.55	1.67	+1.12
Philadelphia (5)	-4.5	-5.0	-3.2	3.11	3.05	-0.06
St. Louis (3)	-4.5	+4.7	+1	3.61	3.77	+1.16
Chicago (3)	-3.8	-17.4	+1.3	2.00	1.63	-37
Atlanta (2)	-3.4	-16.4	-2.4	3.72	3.18	-54
New York (3)	-1.8	-18.1	-7.8	1.27	1.13	-14
Los Angeles (3)	-.8	+8.6	+2.1	1.53	1.63	+1.10
	<u>1954-55</u>	<u>1954-55</u>	<u>1954-55</u>	<u>1954</u>	<u>1955</u>	<u>1954-55</u>
New York (3)	-.3	-36.8	-1.9	1.13	.73	-.40
Philadelphia (5)	+3	-39.0	-6.8	3.05	2.00	-1.05
St. Louis (3)	+2.1	-30.3	0	3.77	2.62	-1.15
Chicago (3)	+2.5	-29.6	-11.4	1.63	1.29	-34
Indianapolis (3)	+5.1	-11.7	+30.7	1.67	1.13	-54
Denver (4)	+5.5	-26.5	-1.5	1.79	1.33	-46
Los Angeles (3)	+6.2	-18.8	+5.0	1.63	1.26	-37
Atlanta (2)	+8.2	-46.1	-5.2	3.18	1.81	-1.37
Detroit (3)	+8.5	-54.7	-7.4	2.46	1.20	-1.26

Source: U.S. Bureau of Employment Security and unpublished ABA data.

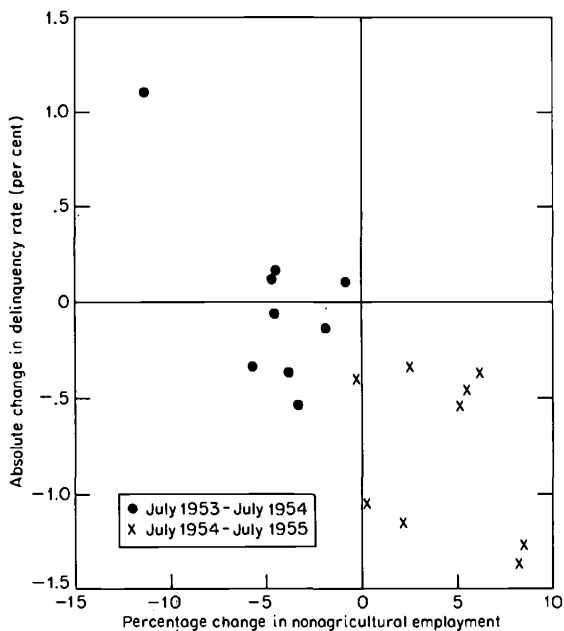
Note: Data refer to July of each year. Delinquency figures are for loans delinquent over thirty days; rates are percentage of loans outstanding. Types of loans included are personal, auto (direct and indirect), FHA Title I, home appliance, property improvement-own plan.

of the eleven cities (Table 43). When recovery came in the following year, employment rose in ten of the eleven cities and the delinquency rate declined in eight.

Table 44 and Chart 22 show that a similar negative correlation prevailed between changes in employment and delinquency on all instalment loans. That correlation is considerably increased by the inclusion of Detroit, which is the most extreme point in the scatter diagram (in the upper left and lower right quadrants). This supports the hypothesis mentioned earlier; some local areas undergo cyclical fluctuations far more intense than those experienced by the nation as a whole, with the result that lenders with business concentrated in these areas experience high delinquencies, repossessions, and losses, even though conditions for the country as a whole are only moderately depressed, as was the case in 1954.

CHART 22

Change in Employment and in Delinquency Rates on Instalment Loans by Banks, Nine Cities, 1953-55

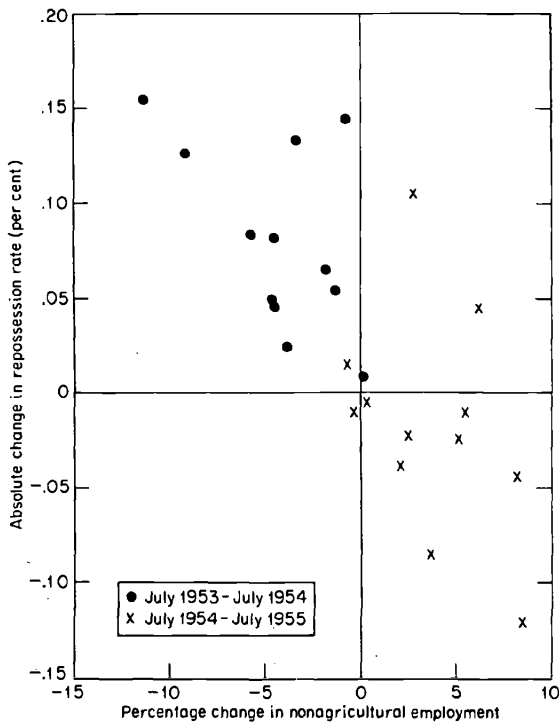


SOURCE: Table 44.

Our sales finance company data are for the local offices of one large sales finance company located in twelve metropolitan areas. Chart 23 demonstrates the relationship between changes in repossession rates and employment. Not only is the difference between the situation in the recession period of 1953-54 and the recovery period of 1954-55 pointed up in striking fashion, but there is also considerable—though far from perfect—association between the magnitudes of change within each period. The changes in collection experience for this company and the banks are also utilized in Table 45, which gives the rank correlation coefficients between the changes in non-

CHART 23

Change in Employment and in Repossession Rates on New-Automobile Loans by a Large Sales Finance Company, Twelve Metropolitan Areas, 1953-55



SOURCE: Tables 43 and F-4.

TABLE 45

Relation Between Nonagricultural Employment and Delinquency, Repossession, and Loss Rates in Metropolitan Areas, 1953-55

	Rank Correlation Coefficient		
	1953-54	1954-55	Both Periods
Correlation between percentage change in nonagricultural employment and:			
Delinquency (direct auto loans, banks, 11 cities)			
a. Percentage change in number of delinquencies	+04	+10	-.42
b. Absolute change in delinquency rate	-.03	-.07	-.55
c. Delinquency rate in second year	+01	+03	-.25
Delinquency (all instalment loans, banks, 9 cities)			
a. Percentage change in number of delinquencies	-.25	-.13	-.42
b. Absolute change in delinquency rate	-.42	-.37	-.75
c. Delinquency rate in second year	-.38	-.07	-.25
Delinquency (automotive accounts, a large sales finance company, 12 areas) ^a			
a. Percentage change in number of delinquencies	-.06	-.66	+41
b. Absolute change in delinquency rate	-.34	-.54	+45
c. Delinquency rate in second year	-.31	-.30	+47
Repossession (new cars, a large sales finance company, 12 areas)			
a. Percentage change in number of repossessions	-.29	-.34	-.75
b. Absolute change in repossession rate	-.36	-.42	-.74
c. Repossession rate in second year	+05	+17	-.14
Loss (all instalment loans, a large sales finance company, 12 areas)			
a. Percentage change in volume of net losses ^b	-.14	+06	-.71
b. Absolute change in loss rate	-.28	-.21	-.68
c. Loss rate in second year	-.35	+64	-.24

Notes to Table 45

Source: A large sales finance company and American Bankers Association (see Tables 43 and 44). All data are for the month of July only in each year. A negative coefficient signifies that large decreases in employment are associated with large increases in the credit variable. Definition of terms:

(1) Delinquency rate is ratio of number of delinquent loans to accounts outstanding at end of month.

(2) Repossession rate is ratio of number of repossessions during month to average number of accounts purchased for twelve preceding months.

(3) Loss rate is ratio of net losses charged to income and reserves to average receivables at beginning and end of month.

^aSee text, footnote 5.

^bAreas that show no net losses in any year were omitted.

agricultural employment by local areas and measures of delinquency, repossession, and loss, respectively. The coefficients are not high, but most are negative, indicating the tendency for collection experience, whether manifested in delinquencies, repossessions, or losses, to vary with the severity of economic contractions as measured by employment.⁵

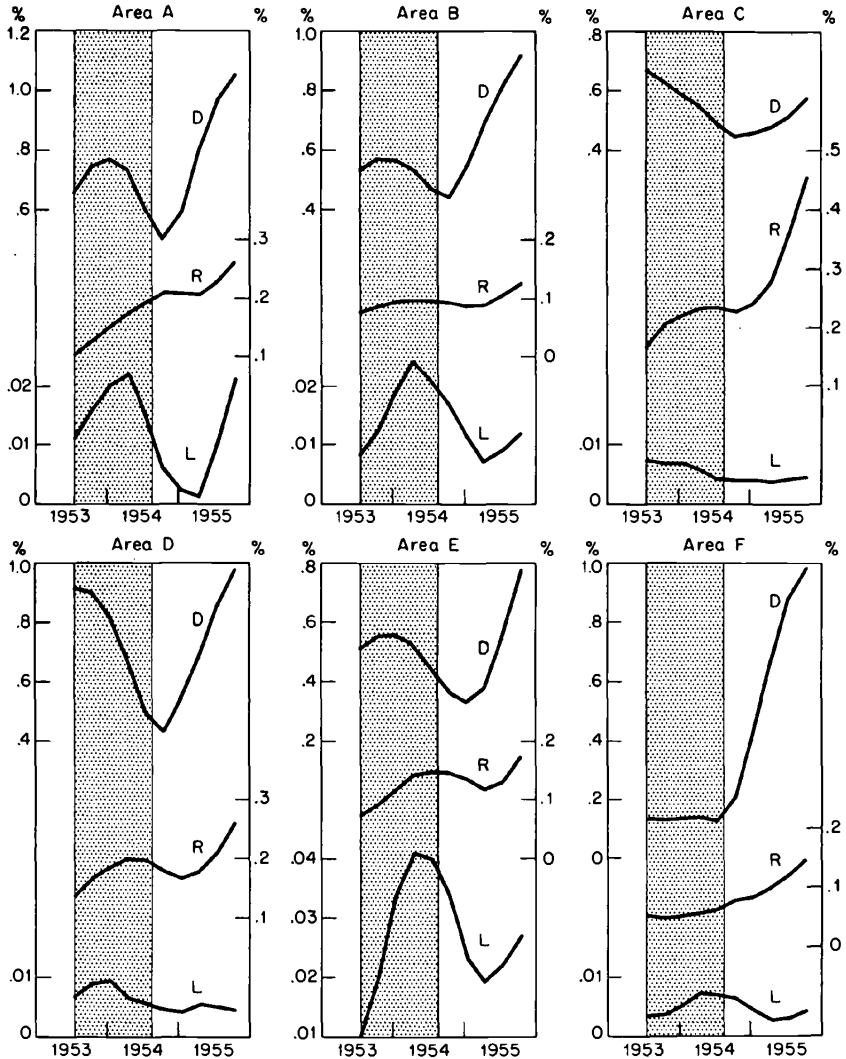
Chart 24 displays the collection of delinquency, repossession, and loss rates for each area, expressed in terms of a four-quarter moving average (to eliminate seasonal fluctuations) from the middle of 1953 to the end of 1955. The chart, together with Table 46, reveals that the sequence of change in delinquency, repossession, and loss that the national figures showed (Charts 14 and 15) is repeated in virtually every area. Furthermore, downturns in the delinquency rates typically appeared well before the nationwide recession was over. (The business cycle trough was reached in the third quarter of 1954.) Even the repossession and loss rates generally reached their peaks early in this

⁵ There is an anomaly in the section of the table on delinquency rates for the large sales finance company in twelve areas: the 1953-55 correlation coefficients are positive, but those for 1953-54 and 1954-55 are negative. The reason is the relatively early cyclical decline in delinquency rates in many areas, antedating the 1954-55 recovery in employment by nearly a year (cf. Chart 24 and Table 46). The result was that delinquency rates fell in many areas while employment was still declining in 1953-54, and that they rose in 1954-55 just as employment was starting to recover. Within each period, however, the areas with less favorable changes in employment tended to have greater increases or smaller declines in delinquency.

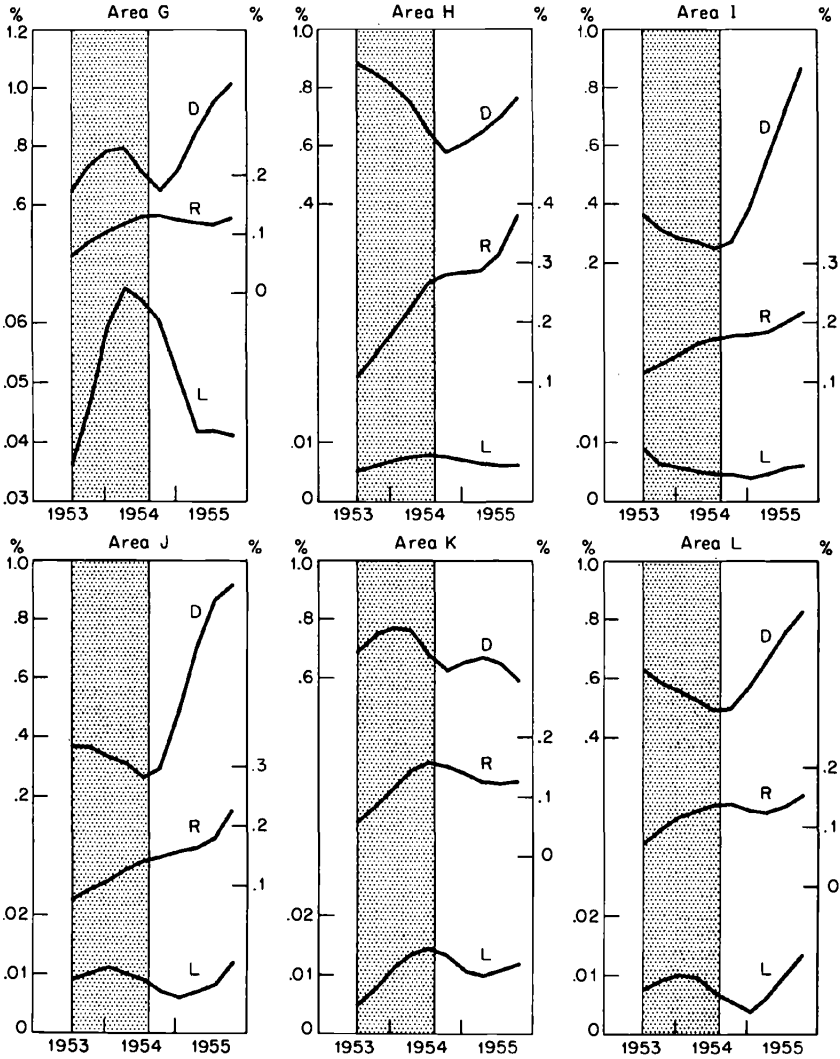
CHART 24

Delinquency, Repossession, and Loss Rates on Instalment Contracts, Twelve Metropolitan Areas, A Large Sales Finance Company, 1953-55

D = Delinquency rate
 R = Repossession rate
 L = Loss rate



D = Delinquency rate
 R = Repossession rate
 L = Loss rate



SOURCE: Table 46.

NOTE: Data are centered four-quarter moving averages of figures for every third month. Shaded area represents the business cycle contraction.

TABLE 46

*Timing of Cyclical Turns in Delinquency, Repossession, and Loss Rates,
on Instalment Contracts, Twelve Metropolitan Areas, 1953-55*

	Areas Reaching Peak in			Areas Reaching Trough in		
	Delinquency Rate ^a	Repossession Rate ^b	Loss Rate	Delinquency Rate	Repossession Rate ^b	Loss Rate
<u>1953</u>						
July	C*,D*,H*,I*,J*,L*		C*,I*			
Oct.	B					
<u>1954</u>						
Jan.	A,E,K					
Apr.	G	B,D	D,J,L			
July		E,K	A,B,C,E,F,G			
Oct.		A,G,L	H,K	F,I,J,L		
				A,B,D,G,H		
<u>1955</u>						
Jan.				E	B,D	D,I,J,L
Apr.					A,E,L	A,B,C,E,F,K
July					G,K	
Oct.				K*		G*,H*

Notes to Table 46

Source: A large sales finance company. Data are centered four-quarter moving averages of figures for every third month, January 1953, April 1953, etc. through April 1956. Hence the initial moving average is centered on July 1953, the terminal one on October 1955. The delinquency rate is the ratio of the number of retail automotive accounts delinquent over thirty days to number outstanding at end of month; the repossession rate is the ratio of number of new-auto repossessions during month to new-auto accounts purchased during twelve preceding months; the loss rate is the ratio of net losses of auto and other financing charged to income and reserves to average receivables at beginning and end of month. For a list of the twelve areas, see App. F, headnote.

*Tentative peak (initial figure is high) or tentative trough (terminal figure is low).

^aArea F: no peak recognized.

^bAreas C, F, H, I, J rise throughout the period.

instance. But the improvement in economic conditions that began in 1954 and continued on into 1957 did not prevent an upturn in delinquency in the latter part of 1954 and in repossession and loss rates in 1955, possibly as a result of the easing of credit terms in 1954-55 (see Chapter 7).

Our review of credit experience at the national, regional, and local levels points to two conclusions. First, there is ample evidence of an inverse relationship between general economic conditions (as measured by changes in income or employment) and collection experience. During a boom it is to be expected that repayment problems will be minimal, though they may increase somewhat before the boom has run its course. The real difficulties, however, come when the economy begins to contract, and our regional studies show that there is a definite tendency for credit experience to be least favorable in those areas where economic contraction is most severe.

Second, although the general economic health of the country is probably the most important variable affecting loan experience, there are sizable variations, both over time and among areas, that remain to be explained by other factors. Variations in lending terms and standards, as we have seen in earlier chapters, may be one of these factors. How significant a role they play in causing changes in lending experience over time will be explored in the next chapter.