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Appraisal of Results

THIS study has examined a number of credit factors and has found that some of them are definite indices of risk. For example, stability of occupation and residence, possession of certain assets, and a relatively large down payment in sales finance transactions, are more frequently characteristic of good loans than of bad. These findings are interesting from the point of view of credit theory. They provide support for some of the widely held opinions of practical credit executives; they also contradict other widely held opinions; and they furnish evidence of some unsuspected relationships, thus suggesting further study. But from the practical point of view, from the point of view of improving credit policy, what is the value of these findings?

A rough analogy can be drawn between the insurance business and the consumer financing business. In the former, the premiums charged different types of risks vary in accordance with the actuarially determined costs of underwriting these risks; thus in group life insurance, the premium depends on the industrial classification and the average age of the insured group. Conceivably the consumer finance business could follow the same policy; it could accumulate extensive experience tables showing the costs of handling various types of risks, and it could charge accordingly. Actually, however, the consumer financing business is not likely to pursue this policy closely because of the difficulty, if not the impossibility, of obtaining the necessary experience tables, and because of the unpracticality of discriminating between borrowers.

And yet in a limited sense, the consumer finance business does pursue this policy. Different individual lending firms cater to somewhat different types of borrowers and charge different fees. A commercial banker, for example, may decide to make low-rate loans to low-cost, good-risk applicants. The banker will attempt to determine a rough dividing line that will enable him to separate the high-cost, unprofitable applicants from the low-cost, profitable ones. The high-cost applicants, although unacceptable to this particular banker, will probably be able to obtain loans from other sources at higher rates. Although the banker will realize that some of the profitable risks are much more profitable than others, he will probably charge the same fees to all. Nevertheless, some individual institutions do vary their charges with the risk; for example, some personal finance companies make special rates to teachers.

Each lender has the problem of determining what types of borrowers he can accommodate at his prevailing rates. He will probably decide that some part of his business can represent marginal, and even slightly submarginal borrowers, who do not completely pay their own way, as long as the greater part of the business consists of supermarginal borrowers, who more than pay their own way. For this reason he does not have to determine precisely where the margin lies between the profitable and the unprofitable applicants; he does not have to emulate the experience tables of the insurance actuary; but he must attempt to arrive at some sort of solution, however rough, for without it credit policy cannot be formulated.

REVISION OF CREDIT POLICY

Any lender who wishes to revise his credit policy may obviously proceed in one of two general directions: he may inaugurate more rigid standards, which will probably result

in decreased collection troubles, decreased losses, and also decreased volume of business; or he may relax his standards, which will result in an increase in both volume of business and collection problems. When credit policy is to be altered, all possible results must be considered—particularly the effect on net income. If standards are to be raised, how much will the volume of business be reduced; can this loss be recovered by an increase in advertising addressed to the more desirable classes of risks; how much will credit losses and collection difficulties be reduced; and what will be the final effect on profits? If, on the other hand, standards are to be relaxed, what will be the increase in volume and gross revenue; will additional advertising be necessary to attract the new borrowers; will the present collection department be able to keep losses within reasonable bounds; and what will be the effect on profits?

In deciding whether he will relax standards, restrict standards, or continue his present policy, a lender may find that the data compiled in this study give him valuable clues, and he may be able to gain supplementary similar data of his own by using the methods illustrated here; but probably he will also require other data only obtainable by other methods. The ensuing discussion is an attempt to illustrate how a lender may proceed toward a rational decision. If some of the suggestions border on the impracticable, they will serve to show that a completely rational and scientific approach to risk selection is not possible.

STUDY OF COSTS

Probably the first step that any lender should take is to make a simple analysis of his costs. Total gross income can be broken down into three general parts: a part necessary to cover collection costs, which include collectors' salaries, court fees, and other expenses incidental to handling delinquencies,

as well as actual losses charged off; a part necessary to cover non-collection costs, which include all costs not incidental to handling delinquent accounts; and a third part representing net profit. If the first part is very small, the lender will not be particularly interested in trying to reduce it further by means of greater restrictiveness; he will be more interested in reducing his non-collection costs by increasing efficiency of operation, or in finding ways to bring in new business. If collection costs are high, however, an attempt to reduce them is certainly in order; but the success of the attempt depends upon the possibility of culling out from among present borrowers a group of particularly unsatisfactory ones.

Evidence of the sort presented in this study is designed to distinguish the more satisfactory borrowers from the less satisfactory, but the distinction is primarily qualitative. Our evidence has shown that a young mechanic with employment and residence tenure of less than three years, and without bank account, life insurance, or real estate, is one of the poorer risks; but since the fact that the risk is poor does not mean that it is necessarily unprofitable, an estimate of the cost of granting loans to borrowers of this general type is essential. The only clue provided by this study is the bad-loan relative, which may be used as a rough measure of the comparative collection costs of different classes of borrowers. Consider the first credit-rating formula of Chapter 4, for example. The class of borrowers with ratings of less than .50, which includes the above mechanic, has a bad-loan relative of 4.0, and that with ratings of 2.25 and over has a relative of .2. One possible inference is that the collection costs (though not the non-collection costs) of the first class are twenty times those of the second class and four times as much as the average for all classes.

The bad-loan relative, however, is no more than an approximation. There are two reasons. First, the relative is subject to sampling error, which is large in samples of 200 loans

and is still appreciable in samples of 1000. Second, the bad-loan relative may be an intrinsically poor method of estimating actual costs, for the mere fact that bad loans are four times more numerous among borrowers with ratings of less than .50 than among all borrowers does not prove that collection costs are also four times as high; they may be either more or less than four times. A much more reliable, but at the same time more onerous method is to make a study of the actual collection costs incurred. For each delinquent account in the questioned class, an estimate would be made of the cost of follow-up letters sent out, of the portion of collectors' or attorneys' salaries allocable to the account, and of any other expenses or credit losses that might have been incurred. The proper allocation of expenses between collection costs and non-collection costs is a serious cost accounting problem; nevertheless, it is necessary if the study is to be comprehensive.

If the collection costs for borrowers with ratings of less than .50 are four times as high as the average for all borrowers—as the bad-loan relative suggests—does this indicate that the group in question is unprofitable? If not, how high would the relative have to be in order to suggest unprofitability? The dividing line between profitability and unprofitability, the breakeven point, can be roughly estimated from the following simple formula:

$$\frac{\text{Net profit} + \text{Collection costs} + \text{K} \times \text{Non-collection costs}}{\text{Collection costs}}$$

The cost and profit items in this formula refer to the totals for an individual enterprise, which may be expressed in actual dollars, or as a percentage of gross revenue, or in a number of other ways; the constant K depends upon overhead costs.

By rejecting an applicant, a lender can avoid a number of expenses that he would otherwise have to incur in carrying

the loan to maturity, but he cannot recover any of the expenses already incurred in investigating the applicant; there is, therefore, a strong incentive to accept an applicant once he has been investigated, and the incentive is particularly strong if these sunk or overhead costs form a large part of the total non-collection costs. The constant K in the above formula is the ratio of overhead costs to total non-collection costs, so that it can conceivably vary from 0 to 1. Obviously, as K becomes larger, the breakeven point determined by the formula will increase. To determine K accurately is a difficult, if not impossible cost accounting problem, but to make a satisfactory rough estimate is probably within the power of most lenders.

This formula may be illustrated as follows. Suppose non-collection costs account for 60 percent of the total gross receipts; that collection costs account for 15 percent; and that the remainder, 25 percent, represents net profit. If there are no overhead costs—so that K is zero—the breakeven point is $2\frac{2}{3}$; if all non-collection costs are overhead—so that K is one—it is $6\frac{2}{3}$. Actually, the true value of the breakeven point lies somewhere between these two extremes; if K is $\frac{1}{3}$, indicating that one-third of non-collection costs are overhead, the breakeven point will be exactly 4, which is the same as the bad-loan relative for borrowers with ratings of less than .50; if K is $\frac{2}{3}$, the breakeven point will be $5\frac{1}{3}$.

If the simple assumptions in the foregoing illustration are realistic, the class of borrowers with ratings of less than .50 is approximately marginal, and an attempt to exclude this class from loan service is not likely to have a pronounced effect on net profits. As we pointed out when presenting the efficiency index, the raising of credit standards naturally results in the elimination of a portion of the bad loans; but it almost invariably results in the elimination of a somewhat smaller portion of the good loans. This principle can be extended to include considerations of cost. The raising of

credit standards will reduce bad-debt losses and collection expenses, but it will also reduce the volume of business and gross income; and if high overhead costs are involved, it may even raise the average operating cost per loan. A real increase in net profits can only be accomplished by isolating and eliminating some class of borrowers that contains a much larger percentage of bad loans than of good loans, a class that contributes little to the company's income while contributing much to its expenses. In our analysis such a class can be identified by a high bad-loan relative which is likely to be found only in conjunction with a factor having a high efficiency index.

An example of the sort of situation that would permit profitable restriction of risks appears in the following purely hypothetical distribution of loans (figures indicating percents):

	Class					
	A	B	C	D	E	F
Good loans	1	2	5	22	40	30
Bad loans	16	22	32	16	10	4
Bad-loan relative	16.0	11.0	6.4	.7	.3	.1

Here the efficiency index of 62 is just twice that of the first credit-rating formula in Chapter 4. Class A and Class B are probably both submarginal; Class C is doubtful. Elimination of Classes A and B would not have an appreciable effect on the volume of satisfactory business—but it would have a very pronounced effect on the unsatisfactory business; the good business would be decreased by 3 percent, and the bad business by 38 percent. Unfortunately, our researches have not yet succeeded in uncovering a situation even approaching this, or a single clearly submarginal bad-loan relative. From this fact follows the tentative conclusion that the organizations submitting samples have been sufficiently careful in selecting risks so that further selection is hardly necessary. Of course, this conclusion is founded on rather meager

evidence. A detailed examination of the costs involved might indicate otherwise; and if we could obtain additional data—such as information on moral character, past payment record, and other considerations not available at present—we might be able to construct a much more effective credit formula, which would permit profitable restriction of borrowers. But the inherent nature of the consumer financing business argues against restriction. The instalment financing business does not aim at exclusiveness, for its function is to reach out and extend facilities to the general public. To deny facilities to all but the elite among risks is to defeat the fundamental purpose of consumer credit as well as to forego an opportunity for profit. Over the past two decades the trend has been toward more liberal credit terms and better collection procedure; and the business has prospered.

VALUE OF CREDIT ANALYSIS

Owing to the fact that the analysis of credit experience is expensive and that the practical value of the results appears to be limited, many lenders may conclude that analysis is not worth while. They may be willing to admit that empirical studies will point the way to greater efficiency of operation, and yet very justifiably contend that the improvement in operating experience will not pay for the research necessary to achieve it. They may feel that the search for efficiency in the particular begets inefficiency in the whole. They may point out, and rightly, that risk selection entails a margin of uncertainty that defies solution, and that regardless of research no lender can ever expect to perfect his selection technique to the point of no losses. They may argue that, after two decades of experience, lenders have learned enough to identify and reject the few impossible risks, and to collect from the others. In short, they will prefer to trust their own judgment and let good enough alone. This view, however,

is probably extreme. Most large lenders carry on research programs, and they presumably feel that continual critical analysis of their operating policies is justified because it tends to keep the organizations alert even though the results may not lead to revolutionary improvements in technique. For these lenders, the problem is to keep the cost of the research program within reasonable limits.

The actuarial analysis of risk along the lines used in insurance is the goal toward which credit research should strive. The efficient design of a research program consists in proceeding as far as possible in that direction without incurring undue expenses. The method of risk analysis that we have illustrated has the prime advantage of being inexpensive; and it is particularly inexpensive when lenders' files are arranged to permit quick random sampling. A lender might easily manage a sample analysis of four or five hundred loans a year—particularly if the work could be done in periods of slack business. After several years the accumulation of evidence should be impressive. The reliability of findings will be enhanced by repeated confirmation; questionable results obtained in the earlier years will be amplified and explained by the results of subsequent years; and any pronounced cyclical or secular changes will become apparent. But the sample method, though inexpensive, has the disadvantage of lacking precision, particularly in its failure to relate risk experience to costs and profits. This method is primarily a preliminary method; it suffices to test intuitive hypotheses and to formulate new problems. As the preliminary evidence accumulates, issues will crystalize—issues that can, perhaps, be solved only by the more precise, and more costly, methods.

The fact that the risk problem has been discussed here in pecuniary terms should not obscure its broader social aspects. An unwise loan may become a disaster to the borrower. The borrower who succeeds in repaying an unwise loan may undergo great hardship in doing so. The borrower who does not succeed may find his credit standing impaired; if he signed a chattel mortgage, his furniture or automobile may be seized; if his friends acted as comakers, they may be embarrassed by legal proceedings; he may even lose his job; and in any case, he is bound to lose a measure of his self-respect, his self-confidence, and his social position. The lender who is sensitive about his public relations faces two serious dilemmas. In selecting applicants, he may refuse all loans that seem questionable or unwise, but if he does so, he will divert considerable business to his competitors. In collecting delinquent accounts, he cannot afford to be over-lenient, for he may encourage further delinquencies; and he cannot afford to be over-aggressive, for he may suffer a serious loss of good will.

The social appraisal of consumer credit faces the same sort of dilemma. Consumer credit fills a social function in making credit available to those who would otherwise not be able to obtain it; but at the same time it has unfortunate effects on the minority who have difficulty in repaying their loans. Strictly speaking, social gain and social loss are intangibles that cannot be measured. Nevertheless, it is impossible to entirely suppress the question: how should risk selection be organized to obtain the maximum social gain at the expense of the minimum social loss?