REVOLVING CREDIT SYSTEMS
A VERIFICATION STUDY

by

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INTRODUCTION

The use of consumer credit is a basic element of the American economy. Individuals and families who want the use of goods and services immediately often need to pay for them out of future income. Consumer credit therefore becomes a means of quickly obtaining the necessary purchasing power. The magnitude of consumer credit use is illustrated by the fact that in December, 1976 short-term installment consumer outstanding debt was $179 million, or approximately 28% of the gross federal debt outstanding of $631 million (U. S. Dept. of Commerce, 1977, S. 19).

Credit is defined as "the right granted by a creditor to a customer to defer payment of debt, incur debt and defer its payment, or purchase property or services and defer payment therefore" [Federal Reserve Board Reg. Z. Sect. 226.2(q)]. Consumer credit is classified as: (1) "open-end" or revolving credit, and (2) "credit other than open-end" or closed-end credit. The Consumer Credit Protection Act defines "open-end credit" as:

> . . . consumer credit extended on an account pursuant to a plan under which (1) the creditor may permit the customer to make purchases or obtain loans, from time to time, directly from the creditor or indirectly by use of a credit card, check, or other device, as the plan may provide; (2) the customer has the privilege of paying the balance in full or in installments; and (3) a finance charge may be computed by the creditor from time to time on an outstanding balance. [FRB Reg. Z. Sect. 226.2 (x)]

All other forms of credit fall under the heading of "credit other than open-end." The most common form is installment credit as used in financing automobiles.

A basic assumption of the free enterprise system is that consumers have sufficient information to allocate their dollars in a rational manner.

This assumption was incorporated as a right by President John F. Kennedy in his March 15, 1962 message to Congress on "Protecting the Consumer Interest." He enumerated the four rights of the consumer: the right to safety; the right to chose; the right to be heard; and the right to be informed. The right to be informed is the right "to be given the facts . . to make an informed choice" (Kennedy, 1962, p. 236).

President Kennedy emphasized the right of the consumer to be informed when using credit in his support of Truth-in-Lending legislation:

> Excessive and untimely use of credit arising out of ignorance of its true cost is harmful both to the stability of the economy and the welfare of the public. Legislation should therefore be enacted requiring lenders and vendors to disclose to borrower in advance the actual amounts and rates which they will be paying for credit . . . (Kennedy, 1962, p. 240).

The focus of this study is to explore how adequately the right of the consumer to be informed with respect to the use of open-end credit is being fulfilled. Truth-in-Lending legislation established standards for disclosing such information and designated the Federal Reserve Board of Governors as the regulatory agency. Since the concepts of adequacy of disclosure are inherent in the legislation and the debate which preceeded its enactment a brief history of Truth-in-Lending is presented.

History of Truth-in-Lending

Prior to the passage of Truth-in-Lending in 1968, lenders quoted rates in a variety of ways. Some lenders quoted rates solely in monthly terms. Others quoted rates figured on the entire amount of the money borrowed for the full time period of the loan, rather than on the unpaid balance. As a result, interest rates lower than the actual annual percentage rate were quoted. In other cases, no interest rates were quoted at all. Instead, low monthly payments and the number of payments were emphasized (Douglas, 1971, p. 525). These practices deceived and confused consumers.

To provide for meaningful disclosure, Senator Paul H. Douglas introduced the Consumer Credit Labeling Bill, S. 2755 in 1960. The bill called for disclosure of (1) total cash price of goods and services, (2) amount of down payment, (3) the difference between the down payment and total cash price, (4) all charges related to the extension of credit, (5) the total finance charge, and (6) "the percentage that such amount bears to the outstanding principal obligation, or unpaid balance, expressed in terms of simple annual interest" (Senate, 1960).

The bill had three major drawbacks: (1) There was no clear distinction between interest and other components of the finance charge. (2) There were no provisions made for distinguishing revolving from installment credit. (3) The meaning of unpaid balance was ambiguous.

The bill was violently opposed by members of the credit industry. Banks and retailers claimed that consumers buying on the installment plan were more concerned with the size and number of monthly payments than with interest rates. They maintained that disclosures would become a source of confusion, and ultimately add to the cost of credit. Furthermore, they objected to disclosing the finance charge on revolving credit saying the cost was impossible to predict.

In 1961, the bill was reintroduced as the Truth-in-Lending Act, S. 1740. Rate disclosures continued to be the central issue between the credit industry and supporters of the bill. S. 1740 required that the finance charge be "expressed as a simple annual rate on the outstanding unpaid balance of the obligation" (Senate, 1961, p. 7). This revision was made to prevent creditors from misconstruing the dollar add-on rate as the required disclosure.

The committee print of S. 1740 (1962) and S. 750, introduced January, 1963, recognized a distinction between open-end and contract credit, but the terminology used was confusing and allowed the opponents opportunity to object. In his Senate testimony, Professor Robert Johnson of Michigan State University, declared that "the rate calculated . . . after the credit has been extended and the finance charge levied will almost never agree with the rate stated at the time the plan is agreed to by the consumer . . . The fact of the matter is, that it is untrue and misleading to tell the consumer he will be paying 18 percent, when it is highly improbable that this is the rate that he will actually pay from month to month" (Senate, 1962, p. 358).

Consumer Advisory Council

At the time Truth-in-Lending was being debated, a Consumer Advisory Council was established by Dr. Walter W. Heller, chairman of the Council of Economic Advisers, to "examine and provide advice to the government on issues of broad economic policy, on governmental programs protecting consumer needs and on needed improvements in the flow of consumer research material to the public . . ." (Kennedy, 1962, p. 238).

The Council established four committees, one of which was the Committee on Consumer Credit and Economic Welfare, chaired by Dr. Richard L. D. Morse, professor and head of the Department of Family Economics at Kansas State University. Another member of that committee, Walter F. Mondale, Minnesota attorney general, contributed effectively to the committee report of what it considered the term "full disclosure of credit" to mean. (These recommendations, although approved by the CAC at its

March, 1963 meeting, were not made public until seven months later with publication of its First Report in October, 1963, because the issue was considered too sensitive.)

Concerning contract credit, the committee recommended that the contract should disclose the "rate at which the finance charge is to be imposed on the amount financed, such rate to be in standardized terms so as to be directly comparable with rates (a simple annual nominal percentage rate) that banks, savings and loan associations, credit unions, and postal savings use to disclose earnings on money saved" (Consumer Advisory Council, 1963, p. 63-64).

Concerning revloving (open-end) credit, the committee recommended that contracts should include:

> a. a clear statement in writing, prior to any agreement to extend such credit, setting forth the simple annual nominal percentage rate at which the finance charge will be imposed, and
>
> b. a clear statement in writing, at the end of each month . . . following the date of the contract, setting forth:
>
> (1) the outstanding balance in the account as of the beginning of the month,
> (2) the amount of each extension of credit (including the cash price or delivered price of any property or service) during such period . . .,
> (3) the total amount credited to the account during the period,
> (4) the amount or amounts on which the finance charge will be based and the time period for each amount if other than one month,
> (5) the simple, nominal annual percentage rate at which the finance charge is imposed, which rate shall be the periodic rate multiplied by the number of periods in one year,
> (6) the finance charge in dollars and cents required for such period, and
> (7) the outstanding balance in the account at the end of the month. (Consumer Advisory Council, 1963, p. 63-64)

Truth-in-Lending was reintroduced in the 89th Congress in 1965, as S. 2275 but no hearings were held. Although the bill had some modifications clarifying the revolving credit provisions, it was not until S. 5 was introduced by Senator William Proxmire in the 90th Congress, that the recommendations of the Consumer Advisory Council concerning the periodic percentage rate were fully incorporated. It was not by accident that the provisions were included; the former chairman of the Consumer Credit Committee of the Consumer Advisory Council, as then consultant to the U. S. Treasury for Truth-in-Lending, assisted in drafting what became Senate Bill 5.

Department of Defense Directive

In 1965, the Department of Defense (DoD) issued a directive designed to help curb abusive credit practices that were occurring. Many servicemen, particularly those financing automobiles, were subjected to the practices of loan sharks. The purpose of the DoD directive was " . . . to provide guidance to servicemen in use of credit and also to assure a source of credit on and near military bases other than loan shark operations (Lamb, 1974, p. 9).

The Directive had a built-in incentive for compliance. It stated that the armed forces would not assist creditors in locating delinquent debtors unless the creditor met the full disclosure requirements outlined in the directive.

The original 1965 directive, which was not implemented, did not include provisions for open-end credit. The 1966 DoD Directive 1344.7, which went into effect May 2, 1966, recognized open-end credit and provided conditions for compliance. These conditions required the creditor to disclose: "(1) the periodic rate, (2) its annual rate equivalent, and (3) the balance on which the periodic rate was applied in order to compute the finance charge" (DoD, 1966, p. 10).

These provisions conform with the recommendations of the Consumer Advisory Council for open end credit because Dr. Morse, as consultant, was able to implement the continuity.

The reluctance to accept 18% as the annual equivalent of 1½% per month is reflected by the failure to the Department of Defense to state unequivocally its position when queried about this. In a letter to Brigadier General Berg, the Deputy Assistant Secretary of Defense, Senator James Pearson asked, at the suggestion of Dr. Morse, "What is the meaning of the periodic rate and its annual rate equivalent as applied to revolving or open-end credit accounts . . .?" (Pearson, 1967). Berg replied, ". . . the term 'periodic rate' refers to the rate of interest that will be charged for the privilege of making purchases under a revolving or open-end account . . . The annual equivalent according to the Treasury Department . . ., is determined by multiplying the number of periods in a year by the periodic rate . . . For your information, this method of computing the annual rate equivalent is not universally accepted." (Berg, 1967). Berg then referred Pearson to the Truth-in-Lending Hearings to support his equivocation.

S. 5 Proxmire's Bill

Truth-in-Lending was re-introduced in 1967 as S. 5 in the first session of the 90th Congress. S. 5 introduced the concept of periodic rate for contract credit by providing operational definitions of terms pertinent to the computation of the periodic, and annual rates. The definitions were:

(5) "Annual percentage rate" means the percentage per period expressed as a percent per annum. It shall be computed by multiplying the percentage rate by the nubmer of periods per year.

(6) "Percentage rate per period" means the percentage ratio of the finance charge for the period for which the charge is made to the unpaid balance of the total amount to be financed.

(7) "Period" means the time interval between payments specified in the credit agreement for repayment of the total amount to be financed. (Senate, 1967, p. 6).

The annual percentage rate, as defined by S. 5 was considered "unambiguous" and "adaptable to irregular payments." It also "reflects clearly the time rate of credit use" (Morse, 1967, p. 15).

The concept of periodic rate was also applied to revolving credit. The limitations imposed by the term "monthly" were removed, and a requirement was added that the retailer "declare the period, the periodic rate and the base to which it is applied" (Morse, 1967, p. 17). This allowed retailers the freedom to select their own accounting methods, but still supplied the consumer the information he needed to make rational decisions concerning credit use (Morse, 1967, p. 17).

Proponents of S. 5 emphasized that the annual rate would be the periodic rate times the number of periods in a year. Since monthly rates were already supplied on revolving credit statements (usually 1½% per month), it would be no problem to multiply the monthly rate by 12, arrive at the annual rate (18%) and disclose that figure on the monthly statement. At most, the problem of disclosing annual percentage rate involved only a reprinting problem.

The arguments surrounding revolving credit disclosures were such that a special hearing solely on revolving credit was held in June, 1967 (Senate, 1967). These hearings resulted in a compromise which required disclosure of the annual percentage rate only for long-term loans, exempting short-term revolving credit. An approximate annual percentage rate, allowing a tolerance of approximately 1% was permissible. The bill passed the Senate with a 92-1 vote.

The bill was then taken up in the House of Representatives as H.R. 11601, the Consumer Credit Protection Act. Representative Leonor K. Sullivan was chairman of the House Committee on Consumer Affairs which held hearings on the bill. The House bill, as passed by the committee, had two main limitations: (1) It exempted department stores and similar types of revolving credit from disclosing the annual percentage rate. (2) It exempted loans or purchases with credit costs of $10 or less from disclosing the annual percentage rate (Sullivan, 1967).

Shortly before the bill was taken up for debate by the full House, Montgomery Ward wrote its credit customers that it would add charges for credit life insurance to their accounts as a negative option plan; that is, consumers were to sign and return a form if they did not want to carry credit life insurance. When this disgusting practice came to light, it so inflamed the sensitivity of the public that the position of those who favored the disclosure of the annual percentage rate and a stronger Truth-in-Lending bill was strengthened.

When the weakened House bill came up for vote, Congresswoman Sullivan ". . . carried her fight to the floor . . ." (Douglas, 1962, p. 534). She fought to have the original disclosure provisions reinstated. ". . . By an eloquent speech, (she) literally drove most of the opponents off the floor" (Douglas, 1972, p. 534). The strengthened bill was passed, and on May 29, 1968, Truth-in-Lending became Public Law 90-321.

The battle of disclosure of annual percentage rate was won. The balance to which this rate was to be imposed, however, was not standardized. This problem remains and is the central focus of this study.

Previous Studies

To facilitate the study of revolving credit functioning, Dr. Richard L. D. Morse developed a revolving credit model. The model was designed to accentuate differences in various methods of assessing finance charges by simulating six months of credit activity. It specified purchase, payment and credit amounts throughout each of the billing cycles. Outstanding balances, balances subject to finance charge, and the finance charges for each month were left blank. Those completing the pattern were asked to fill in the blanks with amounts calculated according to the system their firm used for assessing finance charges.

The model was tested by credit union managers from the southeastern part of the United States. (Max, 1967, p. 12). They were asked to complete the model prior to attending a credit workshop Morse directed in Wichita, Kansas. Results obtained from the credit managers revealed the various methods used to assess finance charges. The model was repeated through the cooperation of state home economics consumer interest chairpersons.

The information gathered concerning revolving credit practices was used as a basis for the Changing Times article, "What It Costs To Say Charge It." (June, 1965). The article identified three methods for assessing finance charges: (1) 1½% on the current month's ending balance, (2) 1½% on the previous month's balance minus payments, commonly called Adjusted Previous Balance, and (3) 1½% on the previous month's ending balance. Each system was illustrated using a three month activity pattern, and the finance charges were computed.

Morse further developed the three systems into six possible methods. These variations and their costs were published in the pamphlet, "Truth-in-Lending" (Morse, 1966, p. 26). They were also published in a Consumer Reports article entitled "The Big Hole in Truth-in-Lending" (1967).

In October, 1967, the model was again used in conjunction with a National Consumer Credit Workshop sponsored by the American Home Economics Association. The systems, which had been defined by formulas and illustrated numerically, were described in words. They were later published as a workbook, "A Workbook on Consumer Credit" published in the Journal of Home Economics (January, 1968).

Max Study

In the fall of 1967, Kansas State University students enrolled in the course entitled "Consumer and the Market" were given two copies of the Morse open-end credit model. They were asked to have retailers in their hometowns calculate the finance charge according to the credit system used by the retailer. The amounts of the calculated finance charges varied widely between stores within the same chain, although each supposedly used the same system. This finding prompted questions concerning the consistency of credit quotations, stimulating Marilyn Max, a student in the class to undertake this as her Master's Degree project.

She personally interviewed credit managers in 51 retail stores in Kansas from 11 chains and wrote the central office of each chain. They were asked to select from a list of prepared descriptions, the description of their own system. If none of the described systems accurately represented their system, they were asked to write their own description. They were also asked to complete the standardized six-month pattern using their own system. Finally, a "conscientious consumer," who was Mrs. Max, attempted to calculate the finance charges herself after studying the printed literature describing the store's system for consumers.

The finance charges as calculated by the stores, the central offices, and the consumer were compared for consistency. They were not consistent. "The dollar cost figures for the store outlets of no chain were consistent" (Max, 1967, p. 22). Also, only 5% of the store's figures agreed with the figures calculated at the central offices. Perhaps of greater significance is that "in no instance did the consumer agree with the central office . . . and, . . . the consumer's calculations agreed with only 11 of the 40 calculations made by store outlets" (Max, 1967, p. 25).

The responses concerning the identification of systems were also compared. None of the outlets of any of the chains were in complete agreement concerning the system they used to calculate finance charges. Also, the chain outlets did not concur with the central offices (Max, 1967, p. 27). "Only 10 of the 42 stores claimed to use the same system that the central office apparently had used . . . and, in no case did the conscientious consumer agree with the system attributed to the central office of nine cooperating chains" (Max, 1967, p. 30).

The author concluded that "careful study of the printed literature supplied by a retail store would not enable a consumer to understand the systems used by a retail store or its central office. Furthermore, it would not enable a consumer to determine whether one system would be more advantageous than another for the style of credit usage of the family" (Max, p. 35). She also concluded that "in the absence of an explicit standard for disclosing credit information, no one of the three interpretations can be judged more accurately than another. Individually, each could be and may be considered accurate by the source; it is only as the information is compared that errors become apparent" (Max, 1967, p. 36).

In 1970, after enactment of Truth-in-Lending, Max repeated the study to determine if the passage of Truth-in-Lending had resulted in more complete and accurate information being made available to consumers. The same sample of retail outlets and their central offices were involved, and the same procedure repeated.

The calculated finance charges from the stores, the central offices and the consumer were again compared. As in the previous study, the comparisons revealed inconsistencies. Again, none of the outlets of any chain were in agreement with each other as to the dollar cost of the finance charge. Only three store outlets were in agreement with their central offices. "The consumer agreed with the central office in only one case" (Max, 1970, p. 19).

The ability to correctly identify credit systems by the stores, central offices and consumers had improved very little. None of the outlets of any of the chains agreed completely on which system was used by the chain. Only six of the 40 retail outlets agreed with the central office, and "in no case did the . . . consumer . . . agree exactly with the system apparently used by the central office" (Max, 1970, p. 20). Max concluded that the Truth-in-Lending Act did not bring "truth" to the consumer via the retail credit personnel, who proved incompetent in understanding their own system, but it did greatly improve the quality of information given the consumer in printed literature. She concluded that she, as a consumer, could "determine the system used by a store from studying the store literature" (Max, 1970, p. 24).

The only significant difference she found from before and after Truth-in-Lending was that store literature provided more information and the terminology was defined so communication was facilitated.

BankAmericard study

Max's conclusion that a ". . . conscientious, literate, and prudent consumer who carefully reads and studies contracts . . . can arrive at an accurate understanding of a store's credit policies (Max, 1970, p. 24) proved to be inaccurate for later credit situations. In 1973, Dr. Richard L. D. Morse challenged the average daily balance total appearing on his BankAmericard statement, and requested that the company explain how it had arrived at the figure. Several months later, the company provided an inadequate response. Further communication involving Senator Proxmire and the Comptroller of the Currency ensued, but the matter was not settled satisfactorily (Morse, 1974-1976).

In 1975, Cheryl Drummond, a Kansas State University student, became aware of the problem and undertook as an Honor's project under Dr. Morse's direction, to determine how BankAmericard Kansas City computed its average balance figures. She examined the BankAmericard disclosure statement and other literature she obtained from the company to gain a full understanding of the terms of the credit agreement. Based on the disclosures on the statement and literature, she attempted to identify the system BA used to compute finance charges and to recompute the average daily balance figure for two BA accounts. Her attempts at recomputation were unsuccessful. She contacted the BA consumer representatives in Kansas City for assistance. The consumer service representative in Kansas City indicated that the difference between the figure Drummond arrived at and the one on the statement was in hand and computer methods, and concluded that it was impossible to arrive at the same figures. The consumer service representative from Wichita indicated that they used a different system in computing finance charges, and thus could not be of any assistance.

Although Drummond was unable to recompute the average daily balance or the finance charge, she did draw some pertinent conclusions. Drummond stated, "the literature they provide to customers explaining how the account works is very confusing and complicated . . . BankAmericard needs to simplify all explanations of how the system works, but more specifically, of how to figure the Average Daily Balance subject to Finance Charges. These explanations should be concise . . ." (Drummond, 1975, p. 18-19).

McAlister study

The only other major study identifying methods of finance charge assessment and establishing relative costs of methods was undertaken by Dr. E. Ray McAlister through the Credit Research Center at Purdue University, and financed through Sears, Roebuck and Company.

The purpose of the study was " . . . (1) to collect and analyze actual account usage, (2) to simulate and measure the impact of method of finance charge, and (3) to relate to account use certain demographic data . . ." (McAlister, 1975, p. 2).

There were 865 accounts used as data in the study. All of the accounts were from Sears, and thus all used the same method for assessing finance charges. McAlister's conclusions concerning the other methods were based on simulations rather than actual accounts.

McAlister concluded that there was a very small dollar difference in cost among the methods of finance charge assessment. He also declared, as did many of the opponents to Truth-in-Lending during the fight for its passage, that "More emphasis should be placed on communicating the actual dollar cost of revolving credit over a period of time rather than relying on the annual percentage rate" (McAlister, 1975, p. 9).

Class project

In the spring of 1976, Kansas State University students enrolled in the course "Financial Problems of Families" were given a three-part revolving credit assignment. First, they were given copies of the Max report containing a copy of the Morse standardized credit activity model. Then, they were asked to read copies of available store literature and acquaint themselves with the systems used to compute finance charges on open-end credit accounts. Finally, they were requested to obtain copies of revolving credit accounts from two different credit sources and instructed to read the disclosure provision. Using the information provided on the credit contracts, the students were to complete the standardized Morse model and compute the finance charge.

A graduate research assistant, this writer, acting as a "conscientious consumer" also read the contracts and computed the finance charges. Based on the information gathered from reading the contracts, the six methods of assessing finance charges developed by Morse were expanded to eight. The eight methods were subdivided into four Monthly Balance methods and four Daily Balance methods. The eight methods, defined and illustrated on the standardized Morse activity model are described in the Procedures.

The finance charges calculated by the students and the research assistant were compared for consistency. Only 21% of the 38 finance charges calculated by the students were the same as those calculated by the research assistant. If a tolerance of $\pm$ 2¢ was allowed to account for differences due to rounding, there was a 26% agreement between the finance charges computed by the students and those computed by the research assistant.

The researcher scrutinized the data and concluded that the discrepancies between the researcher's computations and the students' computations were not due to mathematical error. They were the result of inability to interpret the terms of the credit contract, either because of lack of information, misinformation, or complexity of the credit system.

The results of the class project did not correspond with the results of Max's post Truth-in-Lending study. Max concluded that by studying available store literature a consumer could determine the credit system a store utilized. When students attempted to do this, however, they were unsuccessful. It was these discrepancies that led the researcher to question of the intent of Truth-in-Lending to "promote the informed use of credit . . ." requiring " . . . a clear statement in writing . . ." disclosing the terms of the credit agreement was being met.

OBJECTIVES

The overall objective of this study is to gain a better understanding of the functioning of open-end credit. Although there is a potential of 56 or more open-end credit systems, it is not known which of these are most commonly used. An indication of frequency of use will be obtained from this study. Perhaps of greater significance, is to learn whether the methods in actual use can be identified sufficiently well, that when recomputed under that system, the same finance charge results. That is, if the finance charges are recomputed on the basis of the identified method, the question is whether the amount billed will be equal to that which has been computed. If not, either the method was not correctly identified, or there were computation errors. Finally, it was desired to know the relative cost of the various systems, using as a base the method which makes charges for every dollar outstanding each day. This system is considered to be the most equitable since it favors neither the creditor nor the consumer by charging for all the credit in use each day.

Specific objectives

The specific objectives of this study were:

1. To identify the methods and supplemental conditions used by creditors in selected states to compute finance charges on open-end credit accounts.

2. To establish the frequency of use of each of the various systems.

3. To verify the accuracy of the identification and credit computations of the various systems in use.

4. To determine the cost ratio of finance charges assessed on the billing statement to the finance charges computed by a standard method.

PROCEDURES

Eight basic methods for computing finance charges on open-end consumer credit accounts were identified. These eight basic methods were sub-divided into two groups: four Monthly Balance methods and four Daily Balance methods. Seven major supplemental conditions affecting each method were recognized. Thus, the number of possible methods is 56 or more, depending on the combination of supplemental conditions utilized.

Monthly Balance Methods

The portion of the balance subject to finance charge depends on the components of the monthly balance included or not included in the balance subject to charge. The four Monthly Balance methods differ by whether these components are included or not included. They are described below: and illustrated on the following page.

Components of the monthly balance	Method I	Method II	Method III	Method IV
Previous Balance at beginning	included	included	included	included
minus payments that month	included	included	included	excluded
minus credits that month	included	included	excluded	excluded
plus purchases that month	included	excluded	excluded	excluded
equals components subject to finance charge				
plus finance charges	included	included	included	included
equals New Balance (which is also the Previous Balance for the next period).				

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Monthly Balance Methods, illustrated 1/

Method	Month (a)	Previous Balance (b)	Payments (c)	Credits (d)	Current Purchases (e)	Balance before Finance Charge (f)=b-c-d+e	Finance Charge (g)	New Balance (h)=f+g
Method I				(Ending Balance Method)				
Current month's ending balance	Jan.	-----	-----	$10.00	$ 30.00	$20.00	$0.30	$20.30
	Feb.	$20.30	$20.00	30.00	120.00	90.30	1.35	91.65
	Mar.	91.65	80.00	40.00	90.00	61.65	.92	62.57
(g) = 1½%(f)	Apr.	62.57	10.00	-----	10.00	62.57	.94	63.51
	May	63.51	10.00	-----	10.00	63.51	.95	64.46
	June	64.46	10.00	-----	10.00	64.46	.97	65.43
						Total =	$5.43	
Method II			(Adjusted Balance Method - Payments and Credits)					
Previous month's ending balance, less payments and credits;	Jan.	-----	-----	10.00	30.00	20.00	-----	20.00
	Feb.	20.00	20.00	30.00	120.00	90.00	-----	90.00
	Mar.	90.00	80.00	40.00	90.00	60.00	-----	60.00
	Apr.	60.00	10.00	-----	10.00	60.00	.75	60.75
	May	60.75	10.00	-----	10.00	60.75	.76	61.51
(g) = 1½%(b-c-d)	June	61.51	10.00	-----	10.00	61.51	.77	62.28
						Total =	$2.28	
Method III			(Adjusted Balance Method - Payments Only)					
Previous month's ending balance, less payments only;	Jan.	-----	-----	10.00	30.00	20.00	-----	20.00
	Feb.	20.00	20.00	30.00	120.00	90.00	-----	90.00
	Mar.	90.00	80.00	40.00	90.00	60.00	.15	60.15
	Apr.	60.15	10.00	-----	10.00	60.15	.75	60.90
(g) = 1½%(b-c)	May	60.90	10.00	-----	10.00	60.90	.76	61.66
	June	61.66	10.00	-----	10.00	61.66	.77	62.43
						Total =	$2.43	
Method IV				(Previous Balance Method)				
Previous month's ending balance;	Jan.	-----	-----	10.00	30.00	20.00	-----	20.00
	Feb.	20.00	20.00	30.00	120.00	90.00	.30	90.30
	Mar.	90.30	80.00	40.00	90.00	60.30	1.35	61.65
(g) = 1½%(b)	Apr.	61.65	10.00	-----	10.00	61.65	.92	62.57
	May	62.57	10.00	-----	10.00	62.57	.94	63.51
	June	63.51	10.00	-----	10.00	63.51	.95	64.46

The finance charge is computed by multiplying the sum of the components of the monthly balance subject to charge by the periodic percentage rate.

This method does not make any allowance for the time within the monthly period that each component is effective. This is its major distinguishing characteristic from the Daily Balance methods.

Daily Balance Methods

The portion of the balance subject to finance charge depends on the components of each day's balance which is included or not included in the balance subject to charge each day. The four Daily Balance methods differ by whether these components are included or not included. They are described below and illustrated on the following page.

Components of each day's balance	Method V	Method VI	Method VII	Method VIII
*Beginning Balance that day	included	included	included	included
plus charges that day	included	included	<u>ex</u>cluded	<u>ex</u>cluded
minus payments that day	included	included	included	included
minus credits that day	<u>ex</u>cluded	included	<u>ex</u>cluded	included

equals closing balance that day (which is also the Beginning Balance the next day).

*Unless otherwise stated, the Beginning Balance for only the first day of the period includes accrued finance charges. Within a monthly billing period, the daily finance charges are not added in daily and thus do not compound.

Daily Balance Methods, illustrated

Activity					Method V			Method VI			Method VII			Method VIII		
		Payment	Credit	Purchase	Balance subject to finance charge	Days	Dollar Days	Balance subject to finance charge	Days	Dollar Days	Balance subject to finance charge	Days	Dollar Days	Balance subject to finance charge	Days	Dollar Days
				(Previous Bal.)	0			0			0			0		
Jan.	4.			10.00	10.00	x 3 =	$30.00	10.00	x 3 =	$30.00	------		---	------		---
	7.			20.00	30.00	x 3 =	90.00	30.00	x 2 =	60.00	------		---	------		---
	9.		10.00		------		---	20.00	x 1 =	20.00	------		---	------		---
		Total				6	120.00		6	110.00						
		Average Bal/Month			120.00	÷ 6 =	20.00	110.00	÷ 6 =	18.33						
		Periodic Rate/Month					.015			.015						
		Finance Charge					.30000			.27495						
Jan.	10			(Previous Bal.)	20.30	x 2 =	40.60	20.27	x 2 =	40.54	20.00	x 24 =	480.00	20.00	x 24 =	480.00
	12.			80.00	100.30	x 20 =	2006.00	100.27	x 20 =	2005.40	------		---	------		---
Feb.	1.			40.00	140.30	x 2 =	280.60	140.27	x 2 =	280.54	------		---	------		---
	3.	20.00			120.30	x 7 =	842.10	120.27	x 6 =	721.62	0	x 7 =	0	------		---
	9.		30.00		------		---	90.27	x 1	90.27	------		---	0	7 =	0
		Total				31	3169.30		31	3138.37		31	480.00		31	480.00
		Average Bal/Month			3169.30	÷ 31 =	102.23	3138.37	÷ 31 =	101.24			15.48	480.00	÷ 31 =	15.48
		Periodic Rate/Month					.015			.015			.015			.015
		Finance Charge					1.53345			1.51860			.23220			.23220
Feb.	10			(Previous Bal.)	91.83	x 2 =	183.66	91.79	x 2 =	183.58	90.23	x 2 =	180.46	90.23	x 2 =	180.46
	12.	60.00			31.83	x 2 =	63.66	31.79	x 2 =	63.58	30.23	x 18 =	544.14	30.23	x 4 =	120.92
	14.			40.00	71.83	x 16 =	1149.28	71.79	x 2 =	143.58	------		---	------		---
	16.		40.00		------		----	31.79	x 14 =	445.06	------		---	0	x 22 =	0
Mar.	2.	20.00			51.83	x 7 =	362.81	11.79	x 7 =	82.53	10.23	x 8 =	81.84	------		---
	9.			50.00	101.83	x 1 =	101.83	61.79	x 1 =	61.79	------		---	------		---
		Total				28	1861.24		28	980.12		28	806.44		28	301.38
		Average Bal/Month			1861.24	÷ 28 =	66.47	980.12	÷ 28 =	35.00	806.44	÷ 28 =	28.80	301.38	÷ 28 =	10.76
		Periodic Rate/Month					.015			.015			.015			.015
		Finance Charge					.99709			.52506			.43202			.16140
Mar.	10			(Previous Bal.)	67.83	x 4 =	251.32	62.32	x 4 =	249.28	60.66	x 4 =	242.64	60.39	x 4 =	241.56
	14.	10.00			52.83	x 4 =	211.32	52.32	x 4 =	209.28	50.66	x 27 =	1367.82	50.39	x 27 =	1360.53
	18.			10.00	62.83	x 23 =	1445.09	62.32	x 23 =	1433.36	------		----	---	--	----
		Total				31	1907.73		31	1891.92		31	1610.46		31 =	1602.09
		Average Bal/Month			1907.73	÷ 31 =	61.53	1891.92	÷ 31 =	61.02	1610.46	÷ 31 =	51.95	1602.09	÷ 31 =	51.68
		Periodic Rate/Month					.015			.015			.015			.015
		Finance Charge					.92109			.91530			.77925			.77520
Apr.	10			(Previous Bal.)	63.75	x 4 =	255.00	63.24	x 4 =	252.96	61.44	x 4 =	245.76	61.17	x 4 =	244.68
	14.	10.00			53.75	x 4 =	215.00	53.24	x 4 =	212.96	51.44	x 26 =	1337.44	51.17	x 26 =	1330.42
	18.			10.00	63.75	x 22 =	1402.50	63.24	x 22 =	1391.28	------		----	------		----
		Total				30	1872.50		30	1857.20		30	1583.20		30	1575.10
		Average Bal/Month			1872.50	÷ 30 =	62.41	1857.20	÷ 30 =	61.91	1583.20	÷ 30 =	52.77	1575.10	÷ 30	52.50
		Periodic Rate/Month					.015			.015			.015			.015
		Finance Charge					.93615			.92865			.79160			.78750
May	10			(Previous Bal.)	64.69	x 4 =	258.76	64.17	x 4 =	256.68	62.23	x 4 =	248.92	61.96	x 4 =	247.84
	14.	10.00			54.69	x 4 =	218.76	54.17	x 4 =	216.68	52.23	x 27 =	1410.21	51.96	x 27	1402.92
	18.			10.00	64.69	x 23 =	1487.87	64.17	x 23 =	1475.91	------		----	------		----
		Total				31	1965.39		31	1949.27		31	1659.13		31	1650.76
		Average Bal/Month			1965.39	÷ 31 =	63.39	1949.27	÷ 31 =	62.87	1659.13	÷ 31 =	53.54	1650.76	÷ 31	53.25
		Periodic Rate/Month					.015			.015			.015			.015
		Finance Charge					.95099			.94319			.80280			.79875
		Finance Charges				$5.64			$5.11			$3.03			$2.76	

At the end of the monthly billing period the finance charge is computed either by multiplying each day's balance by the daily periodic percentage rate and summing these products for the month, or by multiplying the (weighted mean) average of the daily balances for the month by the monthly periodic percentage rate. The (weighted mean) average of the daily balances in a monthly billing cycle is the sum total of the daily balances for every day in the billing cycle divided by the number of days in the cycle. This average is often referred to erroneously as the "average daily balance," but correctly it is the average _of_ the daily balances for the billing cycle.

The monthly average is necessary only because it accomodates use of the monthly periodic rate. This process could be avoided by applying the daily periodic rate to the daily balances. This is a logical and direct procedure.

The monthly or daily balance methods are usually supplemented with minimum charge, free ride or exclusion conditions as described in the next subsection. For purposes of this study, a combination of methods and supplemental conditions is referred to as a _credit system_.

Supplemental Conditions

Supplemental conditions may be applied to any of the eight basic methods, thereby increasing, decreasing or eliminating altogether the finance charge. In addition, these supplements may be added individually or in various combinations.

MC(_¢) "Minimum Charge" of _¢.

(a) accounts on which a minimum charge of usually 50¢ is made and is applicable when the Previous Balance is under $33.

(b) accounts assessing a minimum charge regardless of any activity. (These are often described as "membership dues" and are used by companies such as Diner's Club and American Express.)

(3) accounts assessing a minimum charge for months in which there is any activity. (Citibank Master Charge has been using this.)

FR(_days) "Free Ride" or waiver of finance charge is implemented if payments and/or credits within specified time are greater than the Previous Balance. The Free Ride time is expressed in the number of days from the billing date. The period can be stretched up to another 30 days by making charges the first day of the billing cycle.

(Po) further designates those accounts giving a Free Ride if payments only (and not payments and/or credits) made within a specified period of time are greater than the Previous Balance.

EX(_) "Exclusion" from balance subject to finance charge.

(fc) designates accounts where unpaid finance charges from previous billings are excluded from the balance subject to the new finance charge.

(ins) designates accounts where unpaid insurance charges from previous billings are excluded from the balance subject to the new finance charge.

Source of Data

Since the primary objective of the study was to identify the methods used by creditors to compute finance charges on open-end accounts, it was necessary to obtain copies of actual billing statements from consumers. Creditors would not be able to supply such data voluntarily. Billing statements on which a finance charge had been imposed were solicited from consumers who had credit from local retailers, chain stores, oil companies, bank credit cards, and other miscellaneous companies extending revolving credit. Names and account numbers were deleted to protect the privacy of the account holders.

A major limitation of the study is that the data were not selected at random to represent any particular population of consumers or creditors. Resources were insufficient for such sophisticated sampling. Furthermore, as a probative study the haphazard and varied collection of data was considered adequate for the objectives.

Data were collected by mail from a variety of sources. In the first mailing, letters requesting copies of billing statements from revolving credit accounts in selected U. S. cities were sent to various individuals known to the researcher. A sample copy of such a letter appears in Appendix A. Several weeks later, another mailing was sent to individuals in additional areas. A revised version of the original letter was mailed along with a cover letter written by Dr. Richard L. D. Morse to various consumer leaders whom he thought might respond. A sample copy of his letter appears in Appendix B. The revised version of the original letter appears in Appendix C.

Treatment of Data

Account classification

The billing statements were classified by state and type of creditor: national chains, regional chains, local retailers, oil companies, bank credit cards, and other miscellaneous companies extending revolving credit. Billing statements received from different consumers from the same creditor were included.

Each billing statement was examined to see if it included disclosure of the conditions of the revolving credit agreement, particularly the method of assessment of finance charges. If the terms of the account were not disclosed on the billing statement, a letter was sent to the retailer requesting a copy of the revolving credit agreement. According to Regulation Z, disclosure of such information must be made both prior to the extension of credit and with each statement. [FRB Regulation Z, Section 226.7 (viii)]. Nevertheless, many billing statements did not supply such information. An example of letters sent in such situations appears in Appendix D.

The conditions pertaining to finance charge assessment were read and interpreted by the researcher. Each account was first classified according to the two defined categories of finance charge assessment: Monthly Balance or Daily Balance method, and then tentatively identified as one of the eight methods. Supplemental conditions affecting each account were identified. Thus, each account was identified by state of origin, type of creditor and method of finance charge computation system.

Account computations

Verification of the finance charge appearing on the billing statement was attempted by applying the tentatively identified method and supplemental conditions to the purchase, payment and credit amounts which appeared on the billing statement. If the calculations resulted in the same finance charge which appeared on the billing statement, the credit system was declared "verified."

In the event that the calculated finance charge and the billed finance charge did not agree, each step of the computation procedure was repeated to assure there were no mathematical errors. If none was discovered, two possible hypotheses were put forth:

1) The information provided on the statement was insufficient to verify the finance charge, or
2) The system tentatively identified by the researcher was not the system actually utilized by the company in figuring finance charges.

In order to test which of these was correct, modifications of the tentatively identified methods were applied to the purchase, payment and credit amounts which appeared on the statement. If those modifications did not result in an amount equal to the billed finance charge, alternatives from the eight basic methods were applied. If neither the modifications nor the alternate methods produced amounts equal to the finance charge on the billing statement, a judgment was made that insufficient information had been provided and the account was declared "not verified."

Comparative costs

Using the purchase, payment and credit amounts on each of the verified statements, the finance charges were recalculated using a "standard" method for computations. Method VI was selected as the standard method because of its fairness to both the company extending the credit and the consumer receiving it.

Method VI computes finance charges on all the dollars and cents the consumer owes the creditor for the actual number of days the credit is outstanding.

The amount of the finance charge resulting from the application of Method VI was compared to the amount of the finance charge which appeared on the billing statement. The ratio of the billed finance charge to the computed finance charge was computed and multiplied by 100. Thus, a value greater than 100 would reflect a higher cost than Method VI, and a value less than 100 would reflect a system that favors the consumer.

Finally, the systems identified in the study were applied to the standardized Morse model and finance charges computed. Also, the finance charge for Method VI without any supplemental conditions was computed on the Morse model, and used as a basis for comparison with the finance charges for the various systems. The ratio of finance charges for the identified systems to those obtained for Method VI was computed and multiplied by 100. The resulting figure is the percent the system cost is of the Method VI cost. A value greater than 100 would reflect a cost higher than Method VI, and a value lower would reflect a lower cost.

RESULTS

A total of 137 useable billing statements from 47 different companies in 10 states were received in response to the two mailings. The states represented were Arkansas, Illinois, Kansas, Louisiana, Michigan, Missouri, Nebraska, New Mexico, Oklahoma and South Carolina. The companies represented are listed by group in Table 1. A breakdown of companies by state and method appear in Appendices E and F.

The five national chains of J. C. Penney, Sears, Roebuck & Company, Singer, Montgomery Ward and Western Auto represented 10% of the companies studied. There were 36 statements received from these five national chains, accounting for 26% of the 137 billing statements.

Nine regional chains accounted for 19% of the companies and 18% of the statements. Local retailers were the largest group, representing 47% (22) of the companies and 30% (41) of the billing statements.

Bank cards, oil companies and miscellaneous companies combined represented approximately one-fourth of the companies and statements studied. Bank cards represented only 9% of the companies, but 18% of the billing statements. Table 2 presents this information in detailed form.

Table 1. All companies represented in sample, by group.

National Chains	Regional Chains	Local Retailers	Bank Cards	Oil Companies	Misc. Companies
. J. C. Penny	. Central Hardware	. Ben Simon's	. BankAmericard	. Exxon	. Co-op
. Sears, Roebuck & Co.	. Dillard's	. Cohn	. Master Charge	. Gulf Oil	. Eastern Airlines
. Singer	. Famous Barr	. Englander Triangle	. Private bank card - A	. Mobil Oil	
. Montgomery Ward	. Froug's	. Fine's	. Private bank card - B	. Shell Oil	
. Western Auto	. Hudson's	. Godchaux's		. Standard Oil	
	. Macy's	. Hitchin Post			
	. Richman Brothers	. Hovland Swanson			
	. Stix Baer & Fuller	. Jones Store			
	. Vandevers	. Madigans			
		. Magees			
		. Marshall Field			
		. Meschkes			
		. Newman's			
		. Pegues			
		. Rauton's			
		. Renberg's			
		. Stacy's			
		. Stevens			
		. SVB			
		. White			
		. Company A			
		. Company B			

Table 2. Number and percent of companies and statements studied, by group.

Group	Companies		Statements	
	Number	Percent	Number	Percent
National chains	5	10	36	26
Regional chains	9	19	24	18
Local retailers	22	47	41	30
Bank cards	4	9	25	18
Oil companies	5	11	9	7
Misc. companies	2	4	2	1
All	47	100	137	100

Identification of Systems

Monthly and Daily Balance Methods

Of the 137 billing statements studied, 54 (39%) were tentatively identified as using some form of Monthly Balance method for computing finance charges. The remaining 83 (61%) of the statements were tentatively identified as using a Daily Balance method. After verification procedures, 96% of those tentatively identified as using Monthly Balance methods were verified as such. Forty percent of those tentatively identified as using Daily Balance methods were verified. A state-by-state analysis appears in Table 3.

Among the 137 billing statements studied, 35% (48) were tentatively identified as Method II, and 36% (50) were identified as Method VIII. The remaining 29% (39) were attributed to Methods III through VII. (Table 4). Verification was not so evenly divided. (See Table 5) Of those statements tentatively identified as Method II, 47 of the 48 (98%) were verified as such. By contrast, only 30%, or 15 of the 50 tentatively identified as Method VIII were verified. Fifty-nine percent of those tentatively identified as examples of Methods III through VII were verified as such.

Table 3. Percent of monthly and daily methods verified, by state.*

State	Percent Verified Monthly Methods	Daily Methods	All
Arkansas	100	33	50
Illinois	100	25	40
Kansas	100	57	66
Louisiana	100	0	50
Michigan	100	24	28
Missouri	100	25	60
Nebraska	96	0	96
New Mexico	75	25	50
Oklahoma	100	67	80
South Carolina	100	0	67
Total	96	40	61

*Summarized from data presented in Tables 4 and 5.

Supplemental conditions

Thirty combinations of supplemental conditions were identified in conjunction with six of the basic methods. Methods I and V were not used. Methods II, VI and VII were used without, as well as with supplemental conditions. The total of systems in use was 33. Their frequency of use is presented in Table 6. Also presented is the number of statements for each system which was verified or not verified.

Table 4. Number and percent of statements tentatively identified, by method and state.

State	Monthly Balance methods				Daily Balance methods				All
	I	II	III	IV	V	VI	VII	VIII	
Arkansas		2				5		1	8
Illinois		3				3		9	15
Kansas		7				12		16	35
Louisiana		1						1	2
Michigan		1				9		8	18
Missouri		7						8	15
Nebraska		23							23
New Mexico				4				4	8
Oklahoma		2	1	1		3	1	2	10
South Carolina		2						1	3
Total	0	48	1	5	0	32	1	50	137
Percent	0	35	1	4	0	23	1	36	100

Table 5. Number and percent of statements verified, by method and state.

State	Monthly Balance methods				Daily Balance methods				All
	I	II	III	IV	V	VI	VII	VIII	
Arkansas		2				2			4
Illinois		3				2		1	6
Kansas		7				8		8	23
Louisiana		1							1
Michigan		1				3		1	5
Missouri		7						2	9
Nebraska		22							22
New Mexico				3				1	4
Oklahoma		2	1	1		1	1	2	8
South Carolina	—	2	—	—	—	—	—	—	2
Total	0	47	1	4	0	16	1	15	84
Percent	0	56	1	5	0	19	1	18	100

Table 6. Number of billing statements verified, by method and supplemental conditions.

System: Method and supplemental condition			Number of statements Verified	Non-verified	All
Method I			0	0	0
Method II			47	1	48
No supplemental conditions			1	-	1
FR (20)			2	1	3
FR (25)			10	-	10
FR (25)		Ex (ins)	4	-	4
FR (25)		Ex (fc, ins)	2	-	2
FR (30)			15	-	15
FR (30/31)			12	-	12
FR (30/31)	MC (25)		1	-	1
Method III			1	0	1
FR (30)			1	-	1
Method IV			4	1	5
FR (vari)	MC (50)		1	-	1
FR (25)	MC (50)		-	1	1
FR (25)		Ex (fc)	1	-	1
FR (30)	MC (50)	Ex (ins)	1	-	1
FR (30/31)	MC (50)	Ex (ins)	1	-	1

Table 6. Continued.

System: Method and supplemental condition			Number of statements Verified	Non-verified	All
Method V			0	0	0
Method VI			16	16	32
No supplemental conditions			3	-	3
FR (25)			-	2	2
FR (25)		Ex (fc)	-	6	6
FR (25)	MC (50)	Ex (ins)	1	-	1
FR (30)	MC (35)		1	4	5
FR (30)	MC (50)	Ex (ins)	3	1	4
FR (30/31)	MC (50)		7	3	10
FR (30/31)	MC (50)	Ex (ins)	1	-	1
Method VII			1	0	1
FR (30)	MC (50)	Ex (fc)	1	-	1
Method VIII			15	35	50
No supplemental conditions			-	2	2
FR (25)			-	8	8
FR (25)	MC (50)		-	1	1
FR (25)		Ex (fc)	3	2	5
FR (30)	MC (50)		1	1	2
FR (30)		Ex (fc)	-	2	2
FR (30)	MC (50)	Ex (fc, ins)	9	12	21
FR (30/31)			2	-	2
FR (30/31)	MC (50)		-	4	4
FR (30/31)	MC (50)	Ex (fc, ins)	-	3	3

The rate of verification varied by the number and combinations of supplemental conditions applied. Of the 137 statements studied, 78 (57%) had multiple supplemental conditions; 53 (39%) had a single supplemental condition; and six had no supplemental conditions. Verification rates for them were 28%, 31% and 67%, respectively, thus reflecting better communication or accuracy with less complexity.

This hypothesis was confirmed in dealing with the Monthly but not the Daily Balance methods. Of the 54 statements using Monthly Balance methods, 12 (22%) had multiple supplemental conditions; 41 (76%) had only one supplemental condition; and one had no supplemental conditions. Verification rates for these were 92%, 98% and 100%, respectively. Of the 83 statements using Daily Balance methods, 66 (80%) had multiple supplemental conditions, 12 (14%) had only one supplemental condition, and five had no supplemental conditions. Verification rates for these were 41%, 17%, and 60%, respectively.

The supplemental condition of Free Ride (FR) was used in 91% of the systems. Free Rides of 25 and 30 days were used in 19 (58%) of those combinations. A variable Free Ride, dependent upon the length of the month, was found in nine (27%) of the combinations.

Minimum finance charges (MC) of varying amounts were incorporated in 48% of the systems. The 50-cent minimum was used by all except two which set 25- and 35-cent minimums.

Analysis by Group

The data were analyzed by groups of creditors. The system in use was tentatively identified, and this identification was confirmed if the recomputation of the credit activity, using the identified system produced the same finance charge as billed. These data are presented in Table 7.

National chains

Thirty-four of the 36 (94%) statements from the five national chains were from J. C. Penney, Sears, Roebuck & Company, and Montgomery Ward. Seventeen (50%) of their statements were verified. Individually, J. C. Penney accounted for 11 (31%) of the national chain statements and 36% were verified. Sears, Roebuck and Company accounted for 14 (39%) of the statements and 36% were verified. There were nine statements received from Montgomery Ward, and in contrast to the others, 89% were verified.

J. C. Penney and Sears, Roebuck and Company were tentatively identified as using the system VIII FR(30)MC(50)Ex(fc, ins) in all of the states from which statements were received. Since only 36% verified, the identification of the system could not be affirmed. Montgomery Ward used four different systems in the states studied and each of these was verified. These systems were: VI FR(25)MC(50)Ex(ins) in Illinois, VI FR(30)MC(50)Ex (ins) in Kansas, IV FR(30/31)MC(50)Ex(ins) in New Mexico, and VI FR(30/31) MC(50)Ex(ins) in Oklahoma.

Regional chains

There were 24 billing statements received from nine regional chains. Of these 24 statements, 12 (50%) were verified and 12 were not. Three of the nine regional chains, Froug's, Stix Baer & Fuller, and Vandevers, were identified as using a Monthly Balance method for computing finance charges. Froug's and Stix Baer & Fuller used Method II FR(30) and Method II FR(30/31), respectively. Vandevers used Method III FR(30). All of the six statements received from these three companies were verified.

Table 7. Number and percent of billing statements verified, by company.

Company	Billing statements: Verified Number	Verified Percent	Non-verified Number	Non-verified Percent	All
National Chains	19	53	17	47	36
J. C. Penney	4	36	7	64	11
Sears, Roebuck & Co.	5	36	9	64	14
Singer	1	100	-	-	1
Montgomery Ward	8	89	1	11	9
Western Auto	1	100	-	-	1
Regional Chains	12	50	12	50	24
Central Hardware	-	-	2	100	2
Dillard's	-	-	3	100	3
Famous Barr	-	-	2	100	2
Froug's	1	100	-	-	1
Hudson's	1	20	4	80	5
Macy's	5	100	-	-	5
Stix Baer & Fuller	4	100	-	-	4
Richman Brothers	-	-	1	100	1
Vandevers	1	100	-	-	1
Local Retailers	38	93	3	7	41
Ben Simon's	5	100	-	-	5
Cohn	2	100	-	-	2
Englander Triangle	1	100	-	-	1
Fine's	1	100	-	-	1
Godchaux's	1	100	-	-	1

Table 7. Continued.

Company	Statements Verified Number	Verified Percent	Non-verified Number	Non-verified Percent	All
Hitchin Post	6	100	-	-	6
Hovland Swanson	5	100	-	-	5
Jones Store	1	100	-	-	1
Madigans	1	100	-	-	1
Magee's	1	50	1	50	2
Marshall Field	1	100	-	-	1
Meschkes	1	100	-	-	1
Newman's	1	100	-	-	1
Peques	1	100	-	-	1
Rauton's	1	100	-	-	1
Renberg's	1	100	-	-	1
Stacy's	1	100	-	-	1
Stevens	-	-	1	100	1
SVB	1	100	-	-	1
White	-	-	1	100	1
Company A	5	100	-	-	5
Company B	1	100	-	-	1
Bank Cards	4	16	21	84	25
BankAmericard	-	-	11	100	11
Master Charge	3	25	9	75	12
Private Bank Card A	-	-	1	100	1
Private Bank Card B	1	100	-	-	1

Table 7. Continued.

Company	Statements				
	Verified		Non-verified		
	Number	Percent	Number	Percent	All
Oil Companies	9	100	-	-	9
Exxon	1	100	-	-	1
Gulf Oil	2	100	-	-	2
Mobil Oil	1	100	-	-	1
Shell Oil	2	100	-	-	2
Standard Oil	3	100	-	-	3
Misc. Companies	2	100	-	-	2
Coop	1	100	-	-	1
Eastern Airlines	1	100	-	-	1

The remaining six regional chains were tentatively identified as using some form of Daily Balance method for computing finance charges. Three used forms of Method VI, and three used forms of Method VIII. Only 33% of the statements received from the six regional chains using a Daily Balance method were verified.

Local retailers (non-regional or national chain)

Fifteen of the local retailers included in this study used Method II with supplementary conditions to compute finance charges. Thirty-three statements were received from these retailers; 32 were verified.

Two of the local retailers used Method VI with supplemental conditions to compute finance charges. Three billing statements were received from these two retailers. All were verified.

One of the local retailers used Method VII FR(30)MC(50)Ex(fc). There was one statement received; it was verified.

Four of the local retailers used forms of Method VIII. Four statements were received. All were verified.

Bank cards

The two major bank cards, Master Charge and BankAmericard, were represented in this study. Private bank cards from Oklahoma and Arkansas were also represented. Twenty-five billing statements were studied.

Eleven (44%) of the statements were from BankAmericard. All were tentatively identified as using a Daily Balance method, specifically: VI FR(25)Ex(fc) in Arkansas, Illinois and Kansas; VIII FR(25)Ex(fc) in Illinois; and VIII FR(25) in Michigan. None was verified.

Twelve (48%) of the statements were from Master Charge affiliates in seven of the ten states. A variety of methods was tentatively identified.

Only three systems were verified: IV FR(vari)MC(50) in New Mexico, IV FR(25) in Oklahoma, and VIII FR(25) in Missouri.

The two private bank cards were tentatively identified as using a Daily Balance method. Private bank card A was tentatively identified as using VI FR(25) Ex(fc), and was not verified; private bank card B used VI FR(25)Ex(fc) and was verified.

<u>Oil companies and miscellaneous companies</u>

All of the five oil companies represented in this study used a form of Method II to compute finance charges. Nine statements were received and all were verified.

There were two miscellaneous companies represented in the study. One was verified as using Method II FR(30)MC(50). One was verified as using Method VIII FR(25)Ex(fc).

Cost Computations

The finance charge that appeared on each of the verified billing statements was compared with the finance charge recomputed using a "standard" method. Then, the percentage the billed finance charge was of the recomputed finance charge was determined. Method VI without supplemental conditions was selected as the standard method since it charges for all outstanding credit every day.

<u>Cost relative to Method VI</u>

Only 55% (46) of the 84 verified billing statements could be recomputed. Seven (15%) of the 46 recomputed billing statements resulted in finance charges that were higher, that is, greater than those computed under Method VI. (Table 8). The remaining 39 (85%) resulted in finance charges which would have been lower than Method VI.

The other 45% (30) of the 84 statements could not be recomputed. Two main reasons for the unsuccessful application of Method VI to the statements were: (1) There were no transaction dates or posting dates on the statement, or sales slips providing such information were unavailable. (2) There were no purchases billed during the billing cycle. Specific information for each criterion is shown in Appendix F.

Cost of systems on Morse activity model

All of the 33 systems were applied to the standardized Morse model and finance charges computed. Table 9 presents the computed finance charges for each system, and the percentage that computed finance charge is of Method VI's finance charge.

Method V was the most expensive system, costing \$5.64. It was not, however, identified among the systems in use. Of the systems in use, Method VI was the most expensive, costing \$5.11. With the supplemental conditions of FR(30) and MC(50) applied, the cost of Method VI decreased to \$2.68, or 52% of Method VI without any supplmental conditions. The least expensive finance charge, \$2.27, resulted from the application of Method II FR(25)Ex(fc, ins), commonly known as the Adjusted Previous Balance method. The cost of Method II increases only 1 cent to \$2.28 with removal of the supplemental conditions.

Table 8. Finance charges, billed and computed under Method VI, compared.

System: Method and supplemental condition	Finance charge for credit activity of consumer		Billed as percent of computed finance charge
	as billed	as computed Method VI	
Method II	$3.67	$3.83	96
FR(25)	1.04	1.32	79
FR(25) Ex(ins)	1.18	1.64	72
FR(25) Ex(ins)	6.28	7.52	84
FR(30)	.16	.27	59
FR(30)	4.19	4.21	99
FR(30)	1.76	1.77	99
FR(30)	4.20	4.28	98
FR(30)	3.98	4.27	93
FR(30)	1.07	2.30	47
FR(30)	1.59	1.73	92
FR(30)	.56	1.40	40
FR(30)	.03	1.37	2
FR(30)	.32	.54	59
FR(30)	.33	.40	83
FR(30) MC(50)	1.01	1.94	52
FR(30/31)	1.64	1.74	94
FR(30/31)	1.01	1.62	52
FR(30/31)	.73	.84	87
FR(30/31)	.94	1.02	92
Method III			
FR(30)	.10	.21	48

Table 8. Continued.

System: Method and supplemental condition			Finance charge for credit activity of consumer: as billed	as computed Method VI	Billed as percent of computed finance charge
Method IV					
FR(25)		Ex(fc)	.45	.33	136
FR(30)	MC(50)	Ex(ins)	3.56	3.09	115
FR(30/31)	MC)50)	Ex(ins)	7.64	7.61	100
Method VI			2.14	2.14	100
"			8.33	8.33	100
"			.67	.67	100
FR(25)	MC(50)	Ex(ins)	.95	.95	100
FR(30)	MC(35)		1.88	1.88	100
FR(30)	MC(50)	Ex(ins)	4.31	4.31	100
FR(30)	MC(50)	Ex(ins)	5.61	5.61	100
FR(30)	MC(50)	Ex(ins)	.56	.56	100
FR(30/31)	MC(50)		1.75	1.75	100
FR(30/31)	MC(50)		1.55	1.55	100
FR(30/31)	MC(50)		1.12	1.12	100
FR(30/31)	MC(50)		.66	.66	100
FR(30/31)	MC(50)		.50	.26	192
FR(30/31)	MC(50)		2.75	2.75	100
FR(30/31)	MC(50)		1.35	1.35	100
FR(30/31)	MC(50)	Ex(ins)	.50	.32	156

Table 8. Continued.

System: Method and supplemental condition			Finance charge for credit activity of consumer: as billed	Finance charge for credit activity of consumer: as computed Method VI	Billed as percent of computed finance charge
Method VIII					
FR(25)		Ex(fc)	1.45	1.36	107
FR(30)	MC(50)	Ex(fc, ins)	.50	.40	125
FR(30)	MC(50)	Ex(fc, ins)	1.23	1.41	87
FR(30)	MC(50)		1.39	1.61	86
FR(30)	MC(50)		9.26	9.51	97
FR(30/31			.97	1.02	95

Table 9. Relative cost of systems based on Morse activity model.

Verified billing system			Finance charge for Morse activity model: Dollar	Percent of Method VI
Method I			5.43	*
Method II			2.28	45
FR(20)			2.60	51
FR(25)		Ex(ins)	2.60	51
FR(25)		Ex(fc, ins)	2.27	44
FR(30)			2.28	45
FR(30/31)			2.28	45
FR(30/31)	MC(25)		2.28	45
Method III			2.43	*
FR(30)			2.43	48
Method IV			4.46	87
FR(vari)	MC(50)		4.46	87
FR(25)	MC(50)		4.46	87
FR(25)		Ex(fc)	4.46	87
FR(30)	MC(50)	Ex(ins)	4.46	87
FR(30/31)	MC(50)	Ex(ins)	4.46	87
Method V			5.64	*
Method VI			5.11	100
FR(25)			4.26	83
FR(25)		Ex(fc)	4.25	83
FR(25)	MC(50)	Ex(ins)	4.26	83
FR(30)	MC(35)		2.68	52
FR(30)	MC(50)	Ex(ins)	2.68	52

Table 9. Continued.

Verified billing system			Finance charge for Morse activity model	
			Dollar	Percent of Method VI
FR(30/31)	MC(50)		2.68	52
FR(30/31)	MC(50)	Ex(ins)	2.68	52
Method VII			3.03	*
FR(30)	MC(50)	Ex(fc)	2.34	48
Method VIII			2.76	54
FR(25)			2.59	51
FR(25)	MC(50)		2.87	56
FR(25)		Ex(fc)	2.57	50
FR(30)	MC(50)		2.34	46
FR(30)		Ex(fc)	2.34	46
FR(30)	MC(50)	Ex(fc, ins)	2.34	46
FR(30/31)			2.34	46
FR(30/31)	MC(50)		2.34	46
FR(30/31)	MC(50)	Ex(fc, ins)	2.34	46

* Not computed because the system was not in use.

Summary

Billing statements from revolving credit accounts on which a finance charge had been assessed were requested from consumers. A total of 137 useable statements representing 47 different companies were received.

Of the 137 statements, approximately two-fifths were tentatively identified as using Monthly Balance methods to compute finance charges. The remaining three-fifths were tentatively identified as using Daily Balance methods.

After recomputation procedures, only 84 of the original 137 statements could be verified. Fifty-two of the 84 were verified as using Monthly Balance methods, and 32 were verified as using Daily Balance methods. In essence, the 32 statements verified as Daily Balance methods represented less than half of those originally identified as using Daily Balance methods. In contrast, all but two of the 54 statements tentatively identified as using Monthly Balance methods were verified as such. This leads to the conclusion that although Daily Balance methods appear in greater frequency, they are less likely to be verified.

Thirty-three systems (combinations of methods and supplemental conditions) were identified. Two-thirds of the systems had multiple supplemental conditions; the remaining third had either one supplemental condition or no supplemental conditions applied. Only half of the systems with multiple supplemental conditions were verified, but over three-fourths of the systems with a single or no supplemental condition were verified. Greater complexity in credit systems appears to lessen the likelihood of verification.

Cost computations were performed on each of the 84 verified billing statements to determine what percentage the billed finance charge was of the finance charge computed under a "standard" method. Method VI was selected as the standard method because of its fairness to both the creditor and the consumer.

Only half of the 84 verified billing statements could be recomputed using Method VI which required daily information. One-fifth of those recomputed statements resulted in finance charges that were less costly than those originally billed; four-fifths resulted in finance charges that were more costly than the billed finance charge and thus would have been more costly for the consumer.

The remaining half of the verified statements could not be computed because either there were no transaction or posting dates, or no purchases were billed during the cycle.

Finally, the 33 identified systems were applied to the Morse model and finance charges computed. Of the systems in use, Method VI, the "standard" method, was the most expensive, costing \$5.11, and Method II FR(25)Ex(fc, ins) was the least expensive, costing \$2.27. Thus, the cost for the Morse model for so-called Adjusted Previous Balance method is 44% of the exact daily balance system.

DISCUSSION

The general purposes of this study were to gain a better understanding of the functioning of revolving credit, and to determine what systems for assessing finance charges were in use in the marketplace. Its purpose was also to measure whether the intent of Truth-in-Lending (P.L. 90-321) was being fulfilled, namely: to promote " . . . the informed use of credit . . ." by requiring " . . . a clear statement in writing . . . disclosing the terms of the credit agreement."

To determine the systems in use, the researcher read and interpreted 137 billing statements gathered from 47 different companies in 10 states. Each statement was tentatively identified as to the method of finance charge assessment. The tentatively identified method was then applied to the purchase, payment and credit balances on each statement to determine whether the creditor's and this researcher's concepts were in agreement. If the resulting finance charge was the same as the billed finance charge, the credit system was declared "verified." If the resulting finance charge was not the same the account was declared "not verified," signifying a misinterpretation or lack of information.

The only other major study to identify methods of finance charge assessment and their costs was done by Dr. E. Ray McAlister (1975) through the Credit Research Center at Purdue University. The McAlister study was limited to the method used by Sears, Roebuck and Company, and simulated other methods to be identified. It was not as extensive a study as presented, but worthy of comparison.

McAlister identified six methods of finance charge assessment. He acknowledged the methods were not "exhaustive," but contended they were "paradigms of methods in fairly wide current use" (McAlister, 1975, p. 27).

The six methods McAlister identified correspond to five of the eight basic methods identified in this study. "Previous Balance" is comparable to Method IV. "Ending Balance" is comparable to Method I. "Adjusted Balance" is comparable to Method II. "Average Daily Balance Including Debits" (ADBW) is comparable to Method VI FR(_). "Average Daily Balance Excluding Debits" (ADBX) is comparable to Method VIII. And, " 'True' Actuarial Average Daily Balance" (TADB) is comparable to Method VI. None of his methods correspond to Methods III, V and VII, and only by general reference are the supplementary conditions referred to.

McAlister's study did not examine the frequency of use of each of his identified systems. The researcher's data concerning the frequency of use indicated that Method I (Ending Balance) and Method V were not used in the marketplace. As a result, they will not be included in the discussion.

At the time of the Max study, the Adjusted Previous Balance was the method used most frequently to compute finance charges. Because it is a relatively simple method to understand and calculate, Max's experience led her to feel confident in her ability to identify and compute the system.

Today, many retailer's are moving away from the use of the less complex Adjusted Previous Balance and toward the more complex Daily Balance methods. It is becoming more difficult to identify and verify finance charges. The conclusions found in the Max study, therefore, are not valid for today's revolving credit market.

The researcher's data indicate that Daily Balance methods of finance charge assessment were used more frequently than Monthly Balance methods by national chains, such as Sears, Roebuck and Company, J. C. Penney and Montgomery Ward, and by major bank cards, such as Master Charge and BankAmericard. Local retailers and oil companies tended to use Monthly Balance methods more frequently than Daily Balance methods.

Daily Balance methods were verified by the researcher less frequently than were Monthly Balance methods. A possible explanation is that the terms of disclosure on statements using Daily Balance methods were more complicated than on those using Monthly Balance methods. A statement which could not be verified illustrates the problem. It is a Master Charge billing statement, using a Daily Balance method. It is reproduced on the following page and typed below to facilitate reading:

> Payments, credits or charges received after your closing date this month will appear on your next statement. Your FINANCE CHARGE is computed by a PERIODIC RATE of 1½ per month, which is an ANNUAL PERCENTAGE RATE of 18%, applied to your "average daily balance", except that on "average daily balances" in excess of $1000 the FINANCE CHARGE is computed by a PERIODIC RATE of 5/6 of 1% per month, which is an ANNUAL PERCENTAGE RATE of 10%. The term "Average Daily Balance" means the sum of outstanding balances (excluding retail purchases during the billing cycle and excluding previous balances which have been paid in full prior to the closing date for the preceding statement) for each day of the billing cycle, divided by the number of days in the billing cycle and the sum of that part of the outstanding balances relating to purchases made during the preceding billing cycle included in the previous balance which has not been paid in full prior to the closing date for each day since such outstanding balances were posted to your account, divided by the number of days between the days on which such outstanding balances were posted to your account and the statement date of the preceding monthly statement. Payments and credits are applied first to cash advance finance charge, then to FINANCE CHARGE for retail purchases, then to principal for cash advances, and then to principal for retail purchases.

Another Master Charge statement, a Monthly Balance method, is clearly written and was verified. A copy of this statement has been reprinted.

ILLEGIBLE DOCUMENT

THE FOLLOWING DOCUMENT(S) IS OF POOR LEGIBILITY IN THE ORIGINAL

THIS IS THE BEST COPY AVAILABLE

MASTER CHARGE Contracts
Reproduced

Daily Balance Method

Payments, credits or charges [illegible] this month will appear on your next statement. Your FINANCE CHARGE is computed by a PERIODIC RATE of 1½% [illegible] "average daily balances" in excess of $1,000 the FINANCE CHARGE is computed [illegible] of 10%. The term "Average Daily Balance" [illegible] previous balances which have been paid in full prior to the closing date for the preceding [illegible] the sum of that part of the outstanding balances relating to purchases [illegible] for each day since such outstanding balances were posted to [illegible] account and the statement date of the preceding monthly [illegible] for retail purchases, then to principal for cash advances, and then [illegible]

(See previous page for a typewritten copy)

Monthly Balance Method

If a FINANCE CHARGE is shown on the front hereof, it is computed by applying the Periodic Rates to the total "Balance Subject to FINANCE CHARGE." The total "Balance Subject to FINANCE" is the sum of (1) the average daily balance of cash advances obtained during the current billing cycle from the date the transaction is posted to the Cardholder's account to the Closing Date, shown on the front hereof as the "Balance Subject to FINANCE CHARGE" for cash advances; and (2) one of the following, shown on the front hereof as the "Balance Subject to FINANCE CHARGE" for purchases:

(a) The Previous Balance less any FINANCE CHARGE included therein but without deducting payments and credits appearing on the front hereof, if the words "PREVIOUS BALANCE" appear in the "FINANCE CHARGE Schedule" on the front hereof; or

(b) The Previous Balance less any FINANCE CHARGE included therein and less credits and payments applicable to the PREVIOUS BALANCE, if the words "PREV BAL – CR & PAY" appear in the "FINANCE CHARGE Schedule" on the front hereof; or

The first statement does not fulfill Truth-in-Lending's requirement of "a clear statement in writing" in terms of either vocabulary or mode of presentation. However, it evidentally is considered in compliance with the law in the opinion of enforcement agencies. These examples illustrate a major reason why statements using the Monthly Balance method verified more frequently than those using Daily Balance methods.

The Average Daily Balance method is not clearly understood. According to the model description provided by McAlister, the "True" Actuarial Average Daily Balance method (TADB) is the same as the Average Daily Balance including Debits (ADBW) without the Free Ride option. They are ". . . the sum of the daily unpaid balances, excluding unpaid finance charges, divided by the number of days in the billing period" (McAlister, p. 29). The researcher fails to understand why the "True" Actuarial Average Daily Balance is designated as either true or actuarial; it is neither. The adjectives appear to be meaningless academic puffery. The characteristic that prevents the "Average Daily Balance Including Debits" from also being a true or actuarial method is not apparent. In the opinion of the researcher, the term "Exact" would better describe the "True" Actuarial Average Daily Balance method, since the method accounts for every cent of credit outstanding each day. In this study it is referred to simply as Method VI.

McAlister also contends that the assistance of a computer is necessary to accurately determine finance charges with Average Daily Balance methods, particularly the "True" Actuarial Average Daily Balance. If the basic transactions (purchase, payment, and credit posting dates) and the number of days in the billing cycle are known, then the computations can be performed by hand, with or without the aid of a four-function hand calculator. This is the only equipment used by this researcher to verify accounts.

A point on which McAlister and the researcher agree is the mislabeling of what is termed "Average Daily Balance." The researcher uses the term "Daily Balance," for what is actually the average _of_ the daily balances, computed by dividing the sum of the daily unpaid balances by the number of days in the cycle. McAlister uses the term "Average Daily Balance," and points out that under this method, "Finance charges are based on the 'average' unpaid balance owed during the billing period." (McAlister, p. 29)

Relative cost studies were performed by both McAlister and the researcher. The relative cost of the methods identified by both McAlister and the researcher are in essential agreement. The methods, ranked from most to least expensive, are: (1) Method VI, $5.11 ("True" Actuarial Average Daily Balance, $1.47), (2) Method IV, $4.46, (Previous Balance, $1.24), and Method VI FR(_) $4.26, (Average Daily Balance Including Debits, $1.24), (3) Method VIII, $2.76, (Average Daily Balance Excluding Debits, $1.18) and (4) Method II, $2.28, (Adjusted Balance, $1.09). McAlister's charges are based on the average cost for one month, while the researcher's charges are based on the cost for six months.

McAlister states, " . . . ADBX (Average Daily Balance Excluding Debits) finance charges can never exceed ADBW (Average Daily Balance Including Debits) charges." (McAlister, p.31) The data from this study contradicts that statement. This researcher found that, depending on the pattern of purchases and payments made and the length of the Free Ride time given, the cost of the Average Daily Balance Excluding Debits (Method VIII) can exceed the cost of the Average Daily Balance Including Debits [Method VI

FR(_)]. When Method VI FR(25) and Method VI FR(30), which are comparable to ADBW, are applied to the standardized Morse activity model, finance charges of $4.26 and $2.68, respectively, result. When Method VIII (comparable to ADBX) is applied, a finance charge of $2.76 results. Thus, the cost of ADBX exceeds the cost of ADBW.

McAlister further contends that the methods of finance charge assessment has little impact on the dollar amount of finance charge an "average" customer pays. He states " . . . these differences result in no more than about $2.00 a year . . ." (p. 72). The researcher's data, which were computed on a standardized activity pattern, indicate that depending on the method and supplemental conditions used, assessed finance charges can vary as much as $2.84 over only a six-month period, or more than twice the amount estimated by McAlister.

The consistency of systems used by chains throughout the geographic area was examined by the researcher. It was found that nationally recognized chains do not always use the same system to assess finance charges in all of their locations. To coin a phrase, the consumer can't always identify a system by the "brand name" it carries. To illustrate, the national chain of Montgomery Ward uses Method VI FR(25) MC(50) Ex(ins) in Illinois, VI FR(30) MC(50) Ex(ins) in Kansas, IV FR(30/31) MC(50) Ex(ins) in New Mexico and VI FR(30/31) MC(50) Ex(ins) in Oklahoma. Three of the four systems are Daily Balance methods with variations in the supplemental conditions, and one method is a Monthly Balance method.

Master Charge and BankAmericard accounts also use different systems in different geographic locations. Six different systems were identified for Master Charge in eight states. Three different systems were identified for BankAmericard in four states. Two different systems for the same bank card were operating within each of three states.

The identification of multiple systems operating within a state is consistent with findings by Drummond (1975) for Kansas BankAmericard. She found that BankAmericard, Kansas City and BankAmericard, Wichita, Kansas use different systems for computing finance charges. It is not known whether inconsistencies in systems within the same chain is the result of local market structure or state laws governing credit.

Confusion and complexity are the rule rather than the exception when dealing with revolving credit systems using Daily Balance methods of finance charge assessment. Since a majority of the creditors, particularly the banks, utilize the Daily Balance method of computing finance charges, it follows that confusion and complexity characterize the marketplace in relation to revolving credit.

CONCLUSIONS

A critical examination of the data reveals that the intent of Truth-in-Lending with regard to revolving credit is not being met. The marketplace is characterized by confusion and complexity. Terms of credit contracts are not being clearly stated and a consumer who initiates verification of his statement by reading the credit contract will more likely be confused and frustrated than enlightened.

A critical examination of the data reveals that Monthly Balance methods are more easily identified and verified than Daily Balance methods. Two-fifths of the 137 billing statements were tentatively identified as using Monthly Balance methods to compute finance charges. Three-fifths were tentatively identified as using Daily Balance methods. Almost all (98%) of those statements using Monthly Balance methods were verified.

Many of the systems in use today have grown so complex that they are beyond the co ehension of the consumer, a situation which was untrue in Max's day. Today, Daily Balance methods used more combinations of supplemental condtions than did Monthly Balance methods. The Daily Balance methods with multiple supplemental conditions were verified less frequently than Monthly Balance methods with multiple supplemental conditions. The more complex the system, the less likely it was to be verified.

National chains (Sear's, Penney's, Ward's) and bank cards (Master Charge, BankAmericard) tend to use Daily Balance methods with multiple supplemental conditions to compute finance charges. As a result, their finance charges were less likely to be verified, and a consumer who attempted the verification process would more likely be frustrated. Local retailers and oil companies frequently used traditional Monthly Balance methods to compute finance charges. Their finance charges were more easily and successfully verified.

Method VI is the "fairest" method of finance charge assessment, since it charges for all credit in use each day. However, it is also the most expensive method of finance charge assessment. Very few creditors are currently using Method VI to compute finance charges, thus creditors are not charging consumers for all credit that is extended. They do not extend credit gratuitously.

RECOMMENDATIONS

The goal of Truth-in-Lending to promote the "informed use of credit" with clearly written statements is clearly not being fulfilled, as shown by this study.

The researcher recommends that the Truth-in-Lending Act be amended to include as a standard for disclosure the use of language which is meaningful and understandable to the common man, and to proscribe the use of language which is not understandable, is misleading, or tends to obscure the meaning of required disclosures.

More specifically, the researcher recommends that disclosure statements be written in simple, declarative sentences at approximately the fifth grade level.

An example is the disclosure statement of Giant Food which uses a Daily Balance method:

> Average Daily Balance is determined by adding the <u>outstanding balance</u> in the account for each day of the billing cycle and dividing the total by the number of days on the billing cycle. The <u>outstanding balance</u> for each day is determined by adding to the previous day's balance all purchases and other credits for that day.

Another example of a clearly written and understandable statement is the disclosure form used by Field Enterprises, which uses a Monthly Balance method:

> The FINANCE CHARGE is applied on the Closing Date at the end of each monthly billing period. The balance on which the FINANCE CHARGE is computed is determined by adding to the Previous Balance any charges applied to the account during the monthly billing period and deducting any payments, credits and unshipped purchases applied to your account during the monthly billing period. Payments received before 11:00 a.m. of the 25th day following the Closing Date shown on this monthly statement will be deducted from your balance before the FINANCE CHARGE is added.

This statement even tells the consumer the time of day a payment must be received to be credited to the account. Disclosure statements such as these which "tell it like it is" enable the consumer and creditor's representative's to communicate directly with a minimum of friction.

To encourage this above, the researcher recommends that Federal Reserve Board Regulations be critically reviewed and revised to meet these criteria. Currently, the regulations governing revolving credit, particularly concerning daily balance disclosures, are as confusing as the statements they regulate. An example of a regulation which needs revision is:

> If a single daily periodic rate is imposed, the balance to which it is applicable may be stated in any of the following ways:
>
> (IV) The average daily balance during the billing cycle, in which case the creditor shall state . . . wording to the effect that the average daily balance is or can be multiplied by the number of days in the billing cycle and the periodic rate applied to the product to determine the amount of the finance charge. [(FRB Reg. Z, Section 226.7 (b) (8)]

This regulation uses the expression "average daily balance" for the average of the daily balances for the month. If the average day's balances were computed, then the applicable rate would be the daily rate. If the applicable rate is the monthly periodic percentage rate, then it is the average monthly balance that would be appropriate. The regulations imprecisions as reflected in ". . . wording to the effect that . . ." suggests a lack of precise understanding of this matter on the part of the regulatory authority.

Furthermore, it is recommended that the regulations incorporate as a standard of understandability the ability of a third party to replicate the finance charges, given the disclosure statements and the account activity. In accordance with the procedures of this study, all accounts inspected should be "verified" or reported as in need of revision.

Finally, it is recommended that this study be replicated nationwide using more sophisticated sampling methods, enabling analysis of the credit practices of creditors, by types of institution and geographic area.

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APPENDICES

KANSAS STATE UNIVERSITY

Department of Family Economics
Justin Hall
Manhattan, Kansas 66506

I have currently begun work on a research project dealing with credit account verifications, and I need your help. I need copies of billing statements from oil companies, banks, and department stores on which there has been a finance charge assessed.

Let me explain why. My objective for the study is to determine what methods are being used to figure finance charges on revolving credit accounts. For example, although creditors may correctly quote a rate such as 18% per year, the question is: on what? We have discovered 64 different methods of figuring the balances subject to this 18%, and each results in a different amount -- and to top it off, they are all legal under Truth-in-Lending. So, what I want is evidence of how charges are figured. Once I think I understand the systems, I will then try to verify the accounts to see if I can come up with the same finance charges they do.

My problem is that now I need actual charge accounts to verify. Creditors are unable to supply such records, so I must get them directly from consumers. To get enough variety I will need accounts from 10 to 15 different oil companies, banks and department stores in selected cities. I am soliciting accounts from St. Louis, Tulsa, Chicago, Lincoln, Kansas City, and Topeka. Would you possibly have, or do you know of anyone who would have, revolving charge accounts in any of these cities? The accounts statements must be those on which a finance charge has been assessed.

Please be assured that I am not interested in anyone's personal finances. In fact, to protect privacy, it would be best to have the name and account number blocked out before the statements are sent to me for verification. Either the original statement or a xerox copy is acceptable.

If you are interested, I will provide the results of the verification study once it has been completed. I am also willing to pay any xerox and postage charges that may be accumulated.

Thank you.

Sincerely yours,

Sandy Nelson

Sandy Nelson
Graduate Assistant

KANSAS STATE UNIVERSITY

Department of Family Economics
Justin Hall
Manhattan, Kansas 66506

May 12, 1977

One of my graduate students, Sandy Nelson, is undertaking a very interesting study of the crazy revolving credit situation. She's trying to make sense out of the confusion.

She needs actual accounts on which there is a finance charge so she can detect the variations in common use and test the accuracy of the account disclosures. Her letter gives greater detail.

If you could get us some accounts from your area, we would be delighted.

Thank you.

Sincerely yours,

Richard L. D. Morse
Professor and Head

APPENDIX C
(reduced copy)

Revolving Credit Project

I am working on a research project dealing with credit account verifications, and I need your help. I need copies of billing statements from oil companies, banks, and department stores on which there has been a finance charge assessed.

Let me explain why. My objective for the study is to determine what methods are being used to figure finance charges on revolving credit accounts. Although creditors may correctly quote a rate such as 18% per year, the question is: on what? We have discovered 64 different methods of figuring the balances subject to this 18%, and each results in a different amount. To top it off, they are all legal under Truth-in-Lending. So, what I want is evidence of how charges are figured. First, I read the creditor's description of the system. Then I refigure the account using my understanding of the system and see if I can come up with the same finance charges they do. Thus, I test either the accuracy of the computation or the readability of the contract.

My problem now is that I need actual charge accounts to verify. Creditors are unable to supply such records, so I must get them directly from consumers. To get enough variety I need accounts from 10 to 15 different oil companies, banks, and department stores in selected cities. Would you possibly have, or do you know of anyone who would have, revolving charge accounts on which a finance chage as been assessed.

Please be assured that I am not interested in anyone's personal finances. In fact, to protect privacy, it would be best to have the name and account number blocked out before the statements are sent to me for verification. Either the original statement or a xerox copy is acceptable.

If you are interested in the results of this verification study, please let me know. I am also willing to pay any xerox and postage charges that you may incur in gathering evidence for me.

Thank you for your assistance.

Sandy Nelson
Graduate Assistant
Department of Family Economics
Kansas State University
Manhattan, KS 66506

May 1977

APPENDIX D

June 24, 1977

Sears
1001 Hardin Street
Columbia, SC 29201

Dear Sirs:

Please send me one copy of the revolving credit card application and contract used in South Carolina.

Sincerely,

Sandy Nelson

APPENDIX E

Finance charges as billed and computed, for verified systems of creditors, by state.

Creditor	System verified	Finance Charge as billed	Finance Charge as computed Method VI
Arkansas			
Cohn	a) VI FR(30/31)MC(50)	$1.75	$1.75
	b) "	1.55	1.55
Fines	II FR(30)	1.01	*
Stacy's	II FR(25)	.06	*
Illinois			
Company B	VI FR( )	2.14	2.14
Eastern Airlines	VIII FR(25) Ex(fc)	1.86	--
Exxon	II FR(25)	.38	*
Madigans	II FR(30/31)	.13	--
Marshall Field	II FR(30/31)	1.64	1.74
Wards	VI FR(25)MC(50)Ex(ins)	.95	.95
Kansas			
Co-op	II FR(30)MC(50)	1.01	1.94
Jones Store	VIII FR(30/31)	.97	1.02
Macy's	a) VI FR(30/31)MC(50)	1.12	1.12
	b) "	.66	.66
	c) "	.50	.26

* No dates given
-- No purchases

Appendix E, page 2

Creditor	System verified	Finance Charge as billed	Finance Charge as computed Method VI
	d) VI FR(30/31)MC(50)	2.75	2.75
	e) "	1.35	1.35
Meschkes	II FR(30/31)	.75	*
Mobil Oil	II FR(25)	1.04	1.32
Newman's	II FR(30)	.16	.27
<u>Company</u>			
Pegues	II FR(30)	$ .30	*
Penneys	a) VIII FR(30)MC(50)Ex(fc,ins)	.64	*
	b) "	1.23	1.41
	c) "	1.39	1.61
Sears	a) VIII FR(30)MC(50)Ex(fc,ins)	.50	.40
	b) "	.50	--
	c) "	.50	--
Standard Oil	II FR(25) Ex(ins)	1.18	1.64
Stix	II FR(30/31)	.94	1.02
Wards	a) VI FR(30)MC(50)Ex(ins)	4.31	4.31
	b) "	5.61	5.61
	c) "	.56	.56
Western Auto	VIII FR(30)MC(50)	2.73	*

* No dates given
-- No purchases

Appendix E, page 3

Company	System verified	Finance Charge as billed	Finance Charge as computed Method VI
Louisianna			
Godchaux's	II FR(30/31)MC(25)	1.66	--
Michigan			
Englander Triangle	VIII FR(30/31)	4.79	--
Hudson's	VI FR(30)MC(35)	1.88	1.88
SVB	II FR(25) Ex(ins)	6.28	7.52
Wards	a) VI	8.33	8.33
	b) VI	.67	.67
Missouri			
Master Charge	VIII FR(25) Ex(fc)	$1.45	$1.36
Sears	VIII FR(30)MC(50)Ex(fc,ins)	9.26	9.51
Shell Oil	a) II FR(25)	.40	*
	b) "	.46	*
Standard Oil	a) II FR(25) Ex(ins)	.18	*
	b) "	.27	*
Stix	a) II FR(30/31)MC( )	.62	--
	b) "	1.01	1.62
	c) "	.73	.84

* No dates given
-- No purchases

Appendix E, page 4

Company	System verified	Finance Charge as billed	Finance Charge as computed Method VI
Nebraska			
Ben Simon's	a) II FR(25)	$2.64	*
	b) "	.75	*
	c) "	1.67	*
	d) "	1.28	*
	e) "	.53	*
Company A	a) II FR(30)	1.07	2.30
	b) "	1.59	1.73
	c) "	.56	1.40
	d) "	.03	1.37
	e) "	.32	.54
Hitchin Post	a) II FR(30)	4.19	4.21
	b) "	1.76	1.77
	c) "	4.20	4.28
	d) "	3.98	4.27
	e) "	3.38	--
	f) "	.91	--
Hovland Swanson	a) II FR(30/31)	1.66	*
	b) "	.38	*
	c) "	1.77	*
	d) "	2.08	*
	e) "	8.86	*

* No dates given
-- No purchases

Appendix E, page 5

Company	System verified		Finance Charge as billed	Finance Charge as computed Method VI
Magee's	II FR(20)		$ .27	*
New Mexico				
Master Charge	IV FR(vari)MC(50)		1.45	*
Penneys	VIII FR(30)MC(50)Ex(fc,ins)		2.14	*
Singer	IV FR(30)MC(50)Ex(ins)		3.56	3.09
Wards	IV FR(30/31)MC(50)Ex(ins)		7.64	7.61
Oklahoma				
Froug's	II FR(30)		.33	.40
Gulf Oil	II FR(25)	Ex(fc,ins)	.81	*
Master Charge	IV FR(25)	Ex(fc)	.45	.33
Private bank card B	VIII FR(25)	Ex(fc)	.45	--
Renberg's	VII FR(30)MC(50)Ex(fc)		.79	--
Sears	VIII FR(30)MC(50)Ex(fc,ins)		.50	--
Vandevers	III FR(30)		.10	.21
Wards	VI FR(30/31)MC(50)Ex(ins)		.50	.32
South Carolina				
Gulf Oil	II FR(25)	Ex(fc,ins)	.81	*
Rauton's	II		3.67	3.83

* No dates given
-- No purchases

Tentatively identified systems of creditors and reasons for non-verification, by state.

Creditor	System tentatively identified			Reason for non-verification
Arkansas				
BankAmericard	VI FR(25)		Ex(fc)	won't reconcile
Bank card A	VI FR(25)		Ex(fc)	insufficient information
Dillard's	VI FR(30/31)	MC(50)		won't reconcile
Master Charge	VIII FR(25)		Ex(fc)	insufficient information
Illinois				
BankAmericard	a) VIII FR(25)		Ex(fc)	won't reconcile
	b) VI FR(25)		Ex(fc)	insufficient information
Master Charge	VIII FR(30)		Ex(fc)	won't reconcile
Penney	a) VIII FR(30/31)	MC(50)	Ex(fc,ins)	insufficient information
	b) VIII FR)30/31)	MC(50)	Ex(fc,ins)	insufficient information
Sears	a) VIII FR(30)	MC(50)	Ex(fc,ins)	insufficient information
	b) VIII FR(30)	MC(50)	Ex(fc,ins)	insufficient information
	c) VIII FR(30)	MC(50)	Ex(fc,ins)	insufficient information
Stevens	VIII FR(30)		Ex(fc)	won't reconcile
Kansas				
BankAmericard	a) VI FR(25)		Ex(fc)	insufficient information
	b) VI FR(25)		Ex(fc)	insufficient information

Appendix F, page 2.

Creditor	System tentatively identified		Reason for non-verification
	c) VI FR(25)	Ex(fc)	insufficient information
Master Charge	a) VIII FR(25)		insufficient information
	b) VIII FR(25)		insufficient information
	c) VIII FR(25)		insufficient information
Penney	a) VIII FR(30)	MC(50) Ex(fc,ins)	won't reconcile
	b) VIII FR(30)	MC(50) Ex(fc,ins)	insufficient information
Sears	a) VIII FR(30)	MC(50) Ex(fc,ins)	insufficient information
	b) VIII FR(30)	MC(50) Ex(fc,ins)	insufficient information
	c) VIII FR(30)	MC(50) Ex(fc,ins)	insufficient information
Wards	VI FR(30)	MC(50) Ex(ins)	won't reconcile
<u>Louisiana</u>			
Richman Brothers	VIII FR(25)	MC(50)	insufficient information
<u>Michigan</u>			
BankAmericard	a) VIII		won't reconcile
	b) VIII FR(25)		won't reconcile
	c) VIII FR(25)		won't reconcile
	d) VIII FR(25)		won't reconcile
	e) VIII FR(25)		won't reconcile

Appendix F, page 3.

Creditor	System tentatively identified			Reason for non-verification
Hudson's	a) VI FR(30)	MC(35)		won't reconcile
	b) VI FR(30)	MC(35)		won't reconcile
	c) VI FR(30)	MC(35)		won't reconcile
	d) VI FR(30)	MC(35)		won't reconcile
Master Charge	a) VIII FR(25)			won't reconcile
	b) VI FR(25)			won't reconcile
	c) VI FR(25)			won't reconcile
Penney	VIII			insufficient information
Missouri				
Central Hardware	a) VIII FR(30/31)	MC(50)		insufficient information
	b) VIII FR(30/31)	MC(50)		insufficient information
Famous Barr	a) VIII FR(30/31)	MC(50)		insufficient information
	b) VIII FR(30/31)	MC(50)		insufficient information
Penney	VIII FR(30)	MC(50)	Ex(fc,ins)	insufficient information
Sears	VIII FR(30)	MC(50)	Ex(fc,ins)	insufficient information
Nebraska				
Magee's	II FR(20)			won't reconcile
New Mexico				
Master Charge	IV FR(25)	MC(50)		insufficient information

Appendix F, page 4

Creditor	System tentatively identified			Reason for non-verification
Penney	VIII FR(30/31)	MC(50)	Ex(fc,ins)	insufficient information
Sears	VIII FR(30)	MC(50)	Ex(fc,ins)	insufficient information
White	VIII FR(30)	MC(50)		insufficient information
Oklahoma				
Dillard's	a) VI FR(30/31)	MC(50)		won't reconcile
	b) VI FR(30/31)	MC(50)		won't reconcile
Sears	VIII FR(30)	MC(50)	Ex(fc,ins)	insufficient information

Revolving Credit Systems
A Verification Study

by

SANDRA J. DRISKA NELSON

An Abstract of a Master's Thesis

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Family Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1977

The purpose of this study was to gain a better understanding of the functioning of revolving credit. The objectives were to identify and verify the systems used by creditor to compute finance charges on open-end accounts, to establish the frequency of use of each of the various systems, and to determine the relative cost of the systems.

Copies of billing statements on which a finance charge had been assessed were obtained from consumers. They supplied statements from chain stores, local retailers, bank cards, oil companies, and other miscellaneous companies extending revolving credit. A total of 137 statements from 47 companies in 10 states were received.

Each statement's contract was studied and classified first as either a Monthly or Daily Balance method, and then further classified as one of the eight basic methods. To test whether the tentatively identified method was correct, it was applied to the credit activity pattern on the statement and the finance charge recomputed. If the recomputed finance charge equaled the originally billed finance charge, the credit system was declared "verified." If they were not equal, the account was declared "not verified," meaning either the researcher did not understand the credit contract either because insufficient or mis-information had been provided.

Of the 137 statements, 84 were verified. Verification rates varied by the type of system. Of the two-fifths tentatively identified as using Monthly Balance methods, 98% were verified. Of the three-fifths tentatively identified as Daily Balance methods, 23% were verified.

Thirty-three systems (combinations of methods and supplemental conditions) were identified. Statements using Daily Balance methods for finance charge assessment used almost twice as many systems with multiple supplemental conditions than did statements using Monthly Balance methods. However, only 41% of the statements using Daily Balance methods with multiple supplemental conditions were verified, while 98% of the statements using Monthly Balance methods with multiple supplemental conditions were verified.

The 33 identified systems were applied to the Max activity pattern and finance charges computed. Of the systems in use, Method VI was the most expensive, costing $5.11, and Method II was the least expensive, costing $2.27.

Computations were performed on the 84 verified billing statements to determine the relative cost of the billed finance charge to finance charges computed under Method VI. Only half of the 84 statements could be recomputed. Of these, one-fifth had finance charges less than those billed and four-fifths more than those billed. Thus, present systems have lower charges than if each day's credit was charged for.

The goal of Truth-in-Lending was to promote the "informed use of credit" with clearly written disclosure statements. The results of this study of revolving credit systems reveal that the goal is not being achieved. Therefore, the researcher recommends that the Truth-in-Lending Act be amended to require the use of meaningful and understandable language for disclosures and to proscribe by resolution the use of language which is not understandable, is misleading, or tends to obscure the meaning of required disclosures.