

ELDERLY'S PERCEPTION OF  
INTEREST RATE QUOTATIONS ON SAVINGS

by

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## Introduction

The "Right to be Informed", that is, the right of the consumer to the facts needed to make an informed choice, is one of the four basic rights presented to Congress by President Kennedy in 1962 (U.S. President, 1962). Further, "perfect information" is one of the assumptions considered basic to full functioning of the free-enterprise system. That is, for the market price to be a true standard of value, consumers must make informed choices.

Until recently, the need for rate information on saving accounts has not been relevant. Federal Reserve Board's Regulation Q inhibited rate competition, thus denying free market forces to determine interest rates for savings and to allow all financial institutions to compete on equal terms for consumer savings.

The Depository Institutions Deregulation and Monetary Control Act of 1980 established the Depository Institutions Deregulation Committee (DIDC). It was charged to remove within six years the maximum rate ceiling that depository institutions pay on savings. Interest rates have been deregulated rapidly, with the last vestige of regulation to be removed March 31, 1986. The result has been increased rate competition.

With the increased competition has grown concern over the

quality and truthfulness of advertising and disclosures of rate information. This has elevated attention to the basic question: Which method of rate disclosure and terminology is (1) informative, (2) useful, (3) non-deceptive and (4) readily understandable.

The need for truthful disclosure of interest rate terms was first recognized in regard to consumer credit. Consumer credit had grown rapidly post World War II and had become a significant aspect of the consumer market. The need for better disclosure of credit terms was recognized by Senator Paul Douglas when he introduced The Consumer Credit Labeling Bill in 1960. After its enactment in 1968 as Truth in Lending, attention focused on Truth in Savings. Since savings and credit are mirror images of the flow of funds between borrowers and lenders, it was logical to carry forward into savings the basic Truth in Lending disclosures. These were the Annual Percentage Rate (APR) and the Periodic Percentage Rate (PPR). The Annual Percentage Yield (APY) was added for savings because a standard measure and term for reporting accrued earnings was needed. The prospect of three rates caused some persons, such as Senator William Proxmire, to question whether the consumer would be well served, thus leaving open the question as to what rate method would better serve the consumer (U.S., 1973, pp.100-101).

Another approach to providing rate information has been proposed, namely, to use the daily rate as the stated interest rate. It assumes interest is paid daily on daily balances, and avoids the ambiguity of annual rates. This daily rate concept has appeared in the literature under various names: Cents/\$100/Day , MDR (Morse

Daily Rate), USIRD (Universal Standard for Interest Rate Disclosure), and most recently as Cents-ible Interest® with the registered trademark ¢. These terms may be used interchangeably in this thesis.

The daily rate standard was first proposed as an International Standard for Interest Rate Disclosure at The World Congress of the International Organization of Consumers Unions held at The Hague in June of 1981 (Morse, 1981). It was later proposed as the Universal Standard for Interest Rate Disclosure (Morse, 1983). Mrs. Virginia Knauer (1982) Special Assistant to the President for Consumer Affairs, considered the proposal worthy of further study and submitted the proposal for review to the heads of the following federal regulatory agencies: (1) Federal Reserve Board, (2) Federal Deposit Insurance Corporation, (3) Securities and Exchange Commission, (4) The Federal Home Loan Bank Board, and (5) The Comptroller of the Currency. The Cents/\$100/Day method of disclosing interest rates was praised by some and criticized by others. Mr. Todd Conover, Comptroller of the Currency, wrote:

Professor Morse's proposal is technically sound and readily understandable. Quoting interest earnings per day per \$100 of initial savings avoids the difficulties in comparing interest rate quotes. (Letter of July 2, 1982 to Mrs. Knauer)

Paul A. Volcker, Chairman of the Federal Reserve Board wrote:

We believe Professor Morse's proposal could provide important information to many people who either have or are shopping for, the various savings instruments that are available today. His proposal would provide a means for translating interest rate quotations into a universal standard which consumers could use to assist them in making savings decisions. (Letter of December 14, 1982 to Mrs.

Knauer)

However, Cents/\$100/Day was viewed as having the potential for confusion by an official of the Federal Deposit Insurance Corporation who wrote:

Couching interest on deposit in terms of cents earned per \$100 of deposit per day (assuming daily compounding) is unconventional and, therefore, it would be difficult for some to interpret.... I do not think it would add significantly to consumer understanding of the savings market. (Letter of October 15, 1982 to Mrs. Knauer)

To establish whether the Cents/\$100/Day format would be found confusing by consumers, a test was constructed and administered. It used both the Cents/\$100/Day format and conventional terms. The Cents/\$100/Day format tested out as a superior method for answering the question of which form of rate expression is more understandable. This conclusion was based on the results of 2,019 tests which were administered to students in 20 states. Whether similiar results would be found with other socio-economic groups, particularly an elderly population was still to be tested. Therefore, the purpose of this study was to extend the test to an elderly population.

#### Objective

The purpose was to determine if elderly consumers, who are nutrition site participants, would make correct responses more frequently when comparing interest rates and computing interest amounts with the facts disclosed in Cents/\$100/Day or in

conventional savings terms.

## LITERATURE REVIEW

### Development of Interest Rate Disclosure

This section will review briefly the past 25 years of concern over the method of truthful disclosures of interest rates on credit and savings. Deregulation has brought increased competition to the savings market and has raised the question of what is truthful disclosure of interest rates. Related to this question is the basic need for a standard method of rate disclosure that produces valid and reliable outcomes. The development of the Cents/\$100/Day method will be discussed as will a test designed and administered to determine its effectiveness. The last section will present some characteristics of the elderly population, their involvement with savings and their proficiency in test taking.

### Credit

The need for truthful disclosure of rate information in regard to consumer credit was first recognized by Senator Paul H. Douglas in 1960 (U.S. Senate, 1960). Senator Douglas proposed that the finance costs of credit be expressed as a simple annual interest rate. This simple idea of truthful disclosure of interest rates was opposed by those with financial and retail interest as being too difficult to compute, not demanded or wanted by consumers and

creating confusion for the consumer.

In 1962, in his consumer message to the congress declaring the four "Consumer Rights", President Kennedy directed the Chairman of the Council of Economic Advisors, Dr. Walter W. Heller, to appoint a Consumer Advisory Council. Dr. Heller named 12 persons to the Consumer Advisory Council which first met in July, 1962. It established four committees, one of which was the Committee on Consumer Credit and Economic Welfare, chaired by Dr. Richard Morse. This committee addressed the problem of how to state the interest rate on credit and recommended two rates: the Annual Percentage Rate (APR) for contract credit, and in addition, for open-end or revolving credit, the Periodic Percentage Rate (PPR). The APR is defined as the periodic rate multiplied by the number of periods in one year.

The Department of Defense (DoD) issued a Directive to provide guidance to military personnel in financial matters (Lamb, 1974). As originally proposed in December, 1965, the Directive did not require lending institutions to disclose the Annual Percentage Rate. The Directive was revised (1) to require the disclosure of the APR, (2) to establish the actuarial method for computing the APR, (3) to recognize and include open-end credit with the PPR, and (4) to simplify the full disclosure provisions, eliminating the distinction between sale and loan credit. The revised DoD directive 1344.7 of May, 1966, was the first national standard for Truth in Lending. Its issuance was a significant step leading to the format of the Federal Truth in Lending Act as enacted on May 29, 1968. As Morse (1978)

discusses in "A Decade of Truth in Lending", The Truth in Lending Act required that: (1) the actuarial rate be quoted as the true rate, (2) the "unit price" of credit or the PPR be disclosed, and (3) the annual percentage rate be based on the unpaid and not the original balance.

### Saving

After passage of the Truth in Lending Act, attention turned to interest rate expressions used for savings. The standard terminology achieved for credit accounts was not available for savings. Joseph W. Barr, U.S. Treasury Under Secretary in testifying on S.5 Truth in Lending in 1967 stated: "I am convinced that we should stop thinking in terms of a double standard of one set of terms for credit customers and another for many of those same people when they are depositors" (U.S. Senate, 1967, p. 93). This observation led to a realization that Truth in Savings would be a logical sequel to Truth in Lending.

Changing Times in 1971 featured an article titled, "Maybe we need 'Truth in Savings', too". It attracted national attention that led to legislative action. The article was based on the Master's thesis of Ms. Jackie Pinson, a graduate student in Family Economics at Kansas State University. Ms. Pinson's thesis compared what different accounts with the same APR would earn under different methods of computing interest. The methods used in this study, included the low balance method, first-in-first-out (FIFO) on the beginning balance, FIFO on first deposits, last-in-first-out (LIFO),

and day-of-deposit- to-day-of-withdrawal (DIDO). Ms. Pinson found that accounts may vary as much as 171% depending on the type of method used (Pinson, 1970).

The problem of rate disclosure is confounded by the lack of a standard method of computing interest and of standardized terminology describing the basic terms for compounding frequency (annual, bi-annual, quarterly, monthly, daily and continuously), the day base (336, 360, 365, 366, or 372), and the number of grace and dead days. All of these factors, in addition to the method used in calculating interest, affect the actual amount of interest paid on individual accounts. Morse (1983) calculates there to be over 7.8 million ways of computing interest by using different combinations of these factors.

Ms. Pinson's thesis and the Changing Times article attracted the interest of Senator Vance Hartke (IN - D) who introduced "The Truth in Savings Act" in the U.S. Senate (92nd Congress) in 1971. A companion bill, H.R. 8365 was introduced in the House of Representatives by Dr. Bill Roy (KS - D). Both bills were referred to committee but no hearings were held. Similiar bills were reintroduced by Hartke and Roy in the 93rd congress. Yielding to pressure from Senator Hartke on the floor of the Senate, Senator Proxmire agreed to hold hearings on S. 1052 on June 7, 1973 (U. S. Senate, 1973). Although these hearings resulted in no Congressional action, they provided the first major exposure to the concept. Dr. Morse testified at the hearing and introduced for the printed record the Master's theses of Pinson and Price along with other research and

documents, numbering 277 pages.

Hartke and Roy also introduced bills (S. 1267 and H.R. 14) in the 94th Congress in 1975. Treasury Secretary William E. Simon, who was attempting to advance the idea of deregulation, recognized the logic of incorporating Truth in Savings, so inserted it in Section 107 of S. 1267, The Financial Institutions Act. This section was deleted October 3, 1975 by the committee marking up the bill.

In 1979, an oversight hearing was held before the subcommittee of the House Committee on Government Operations to "Review Federal Supervision of Bank Advertising and Promotion Practices". Dr. Morse testified at this hearing, and again used it to introduce for the record theses, research reports and other documents, numbering 262 pages, thus preserving them for public record.

The most recent Congressional action was the hearings held August, 1984, before a subcommittee of the House Committee on Banking Finance and Urban Affairs on a Truth in Savings Act, H.R. 5232, a bill introduced by Representative Lehman (CA - D) with 90 cosponsors. This bill would require advertising for bank deposit instruments to state the annual rate of simple interest, the Annual Percentage Yield with the compounding method used, and to disclose these rates in equal prominence. Dr. Morse included with his testimony for reprinting in the hearings Cents-ible Interest (1984) which develops the case for Cents per \$100 per Day as presented at the White House Conference on The Consumer and The Financial Service Revolution. Included are the results of two interest rate perception

test instruments as used as the model for the test used in this thesis. No legislative action was taken as a result of this hearing, but bi-partisan interest in legislation was evident. Indeed, the minority leader of the committee, Mr. Wylie (OH - R), introduced in the opening days of the 99th Congress, H.R. 15, Title VIII of which proposes the regulation of savings advertising.

### State Legislative Action

Truth in Savings bills have been introduced each year since 1979 in the Kansas Legislature. Other states have already enacted Truth in Savings: Maryland in 1977, New York in 1978, California in 1979, and this year Massachusetts (1985). All of these extend Truth in Lending legislation to Truth in Savings.

The feasibility of state legislation was first identified by Maryland. Heretofore, only Federal legislation had been considered. The Maryland experience encouraged Dr. Morse to develop "A Model Act - Consumer Savings Disclosure" to provide states with a model to use in drafting state Truth in Savings legislation. It was incorporated extensively in the regulations issued by the New York State Banking Department which became effective December 31, 1979. The 1978 New York Truth in Savings Act had charged the Department with responsibilities to write and issue the regulations. A section-by-section analysis of the Model Act and the Regulations by Morse is reprinted in the Hearings on H. R. 5232 (1984, pp. 76-96).

The first legislative proposals using the Daily Rate standard

were introduced as S. 549 in the 1984 session of the Kansas legislature and Iowa House File 2213 in the Iowa legislature. The Iowa bill passed committee, but was not debated by the full House. The Kansas bill passed committee and was debated by the full Senate, being defeated by a close vote. It was re-introduced in both houses of the current legislature (S. 244 and H. 2380). Hearings were held by the House Committee on Commercial and Financial Institutions which held it over to the 1986 session for action.

#### The Advent of Cents/\$100/Day

In 1977, Dr. Morse conceptualized a method of interest rate disclosure that would simplify rate expression. Dr. Morse had two criteria for the rate expression. The first was to establish a standard for rate expression and the second, to present it in a format that would be easy to read and use by consumers. The Morse Daily Rate Tables, a set of three tables, were developed and published by the Kansas Agricultural Experiment Station. One set of tables represented daily compounding based on a 365 day base, the second set was a 360 day base, and the third set of tables used continuous compounding. New York State incorporated the tables in their regulations which have been in effect since December 31, 1979. Selected pages of the Cent/\$100/Day rate tables were published privately in a booklet entitled "Check Your Interest" for use by consumers to verify their own personal accounts (Morse, 1978). The booklet has received nationwide publicity from syndicated columnists.

The idea of Cents/\$100/Day was first proposed at the World Congress of the International Organization of Consumers Unions held at the Hague on June 25, 1981. Proposed was an International Standard for Interest Rate Disclosure, reasoning that cents per centum per diem would be adoptable by any country with a decimal currency. Its subsequent presentation was renamed as a Universal Standard for Interest Rate Disclosure (USIRD) and as Cents-ible Interest<sup>®</sup> which has previously been discussed in this thesis. One objective of Cents/\$100/Day disclosure is to allow interest rates to be compared. It would further provide standardization of the method of computation, the compounding frequency and the terminology used in interest rate disclosures.

The "Universal Standard for Interest Rate Disclosure" (USIRD) was the title of the paper presented at the 1983 annual conference of the American Council on Consumer Interests (Morse, 1983). At the 1984 ACCI Conference, Morse presented the results of the test designed to address the position previously raised by the FDIC, namely that Cents per \$100 per Day would be confusing to the consumer (Morse, 1984).

Since this test is the basis for this study, it is described and discussed in the next subsection.

### The Challenge Test

The test was administered to over 2,019 students in 20 states. They ranged from lower and upper level high school students,

to college undergraduates, graduate students and senior and graduate marketing students. The results from each group were very much alike and defied detection as to the groups with higher levels of sophistication in finance. They were also grouped by their lower and higher mathematics background. Although the differences were significant, statistically, as would be expected with such large numbers, they were not sufficiently large to be convincing that mathematics was an important contributor to their ability to perform, and definitely not a factor in their ability to detect the higher number of cents.

The test consisted of nine pairs of questions and five calculation problems. In each section, there were both traditional rate quotations and quotations presented in the Cents/\$100/Day format. Of the nine comparison questions, two and nine compared Cents/\$100/Day rates. Questions one and eight concerned compounding frequency, comparing daily vs. monthly compounding. The participants were asked in questions three and five to identify which day base method, 360 or 365, would yield more. Question four compared nominal rate and yield, question six compared the day base and rate, and question seven mixed the day base and compound frequency.

The five calculation questions consisted of selecting the correct amount of earnings for a given situation. Questions 10, 11 and 12 were asked in traditional terminology and question 13 and 14 were asked in the Cents/\$100/Day format.

The students selected the correct answer 96-97% of the time when the rates were expressed in Cents/\$100/Day as opposed to less

than chance 50/50 choices when expressed in conventional terms. The results of this test support rejection of the FDIC prediction that Cents/\$100/Day would be confusing. In fact, students were able to understand rate disclosures better when expressed in Cents/\$100/Day than in conventional terms.

What about other populations? Would a group of older persons, less accustomed to taking pencil tests, do as well or produce at least as convincing results? To answer these questions, an elderly population was selected who was available and represented the less affluent elderly. Little information is known about such persons and their savings and investment attitudes and practices. The next section reviews some information about aging and savings.

## Aging and Savings

### Demographic Characteristics of the Elderly

The number of elderly persons is increasing rapidly, with the 75 and over age group growing the fastest. In 1900 there were 3.1 million persons 65 and older. By 1930, this number had more than doubled to 6.6 million and by 1975 the number increased to 22.4 million. The projection for the year 2000 is 31.8 million (Harris, 1983). The reasons Harris gives for the current growth of the older population are:

1. The high immigration rate before World War I;
2. The high birth rate of the late 1800's and early 1900's; and
3. The dramatic increase in life expectancy during the first half of this century (p. 24).

The increased life expectancy is due to the decrease in infant mortality which enables more children to live to be adults and thus, to live to old age. Figures from the U.S. Census reveal that the average life expectancy in 1900 was 49 years; by 1954, life expectancy had increased to 70 years (Taeuber, 1983). The most recent figures released from the National Center for Health Statistics indicate that life expectancy has reached 74.6 years for 1982. Females have always had a longer life expectancy than men and

currently women outnumber men three to two. This explains why many problems of the aged today are problems of women, especially those over age 70. In 1982 for every 100 females, there were 80 men aged 65-69 and 42 men for every 100 women age 85 and over.

#### Living Arrangement and Marital Status

A higher proportion of elderly men live with their spouses than the proportion of elderly females. Of the women, 35% live alone while 14% of the men live alone. In 1970, over half of the elderly women were widowed while only 18% of elderly men. The two main reasons for the high number of widows are the higher mortality rate of men and the fact that men often marry women younger than themselves. Of the over 7 million elderly living alone in 1982 (about 30 percent of the elderly population), most were women (Taeuber, 1983).

#### Age

Of the total 226,505 population in the United States, in 1980, nearly 20% were over 55 years of age. Of these 9.6% were 55-64, 6.9% were 65-74 and 3.4% were 75-84. In 1982, over one-fifth of the American population was 55 years or over, an estimated 48.9 million persons. This trend is predicted to continue until around 2010 when the "Baby Boom" generation will age and comprise one-fourth of the population.

## Income

The median total money income in 1982 of married couples 65 and over was \$15,130. For non-married persons over 65, the median income was \$5,880 (Grad, 1984). The median income drops as the individual gets older.

## Education Level

In 1982, more than 40% of the elderly (those 65 and over) had finished high school, in comparison with less than 20% of the elderly in 1960 (U.S. Cong. 1984).

## Savings of the Elderly

Income from assets represents the third source of income during retirement. The first two are social security benefits and job related pensions (Grad, 1984). A survey conducted by the Social Security Administration in 1982 of persons 55 and older, reported that 61% reported to have saving accounts and 62% to have checking accounts (Sherman, 1971). Schutz (1985) reports that recent studies show that the elderly as a group tend to save, not dissave as the life-cycle hypothesis has suggested. According to Schutz, Baird, and Hawkes (1979) almost half of the older Americans in their survey saved regularly; 36.7% "always saved", 14.2 "sometimes saved" and 11.7 "often saved". The worst financial problem reported was the difficulty of "making ends meet" in times of inflation. Thus, indicating that savings are important to the elderly and that

inflation has the potential of lowering this group's level of living.

Although not all elderly households save, those that do are large depositors. A recent study, "Savers Survey, 1984", produced by the U.S. Savings League's Economics Department, found that the median age of savings institutions depositors had increased from 58.5 in 1982 to 58.8 in 1984. The elderly saver maintains an average of \$16,530 as compared to \$6,500 on deposit for all other ages (Savings Institutions, 1985).

After the Social Security "crisis" of 1982 which brought about some changes in the Social Security tax structure, there has been a considerable increase in personal savings for retirement. With IRAs accessible to more individuals, personal savings may play a more important role in retirement savings in the future. The U.S. Savings League predicts that with the increasing number of elderly in the U.S. a large segment of the savings market will consist of the elderly's dollars.

#### The Elderly's Attitude Towards Saving and Money

Attitude has been defined as "an unseen force which we presume exists in order to explain certain behavior" (Organ, 1982). Although attitude has been studied, no general theory is available which accounts for how environmental variables affect attitude and attitude changes. Peak (1973) has studied how attitudes are

reflected in behavior and states, "that attitudes have referents, i.e. they are always attitudes towards something".

The literature search revealed very little empirical research on attitude and money or savings. Yamauchi and Templer (1982) conducted one study which developed a Money Attitude Scale. The scale indicated five attitudinal factors that were independent of a person's income: The factors of Power-Prestige, Retention-Time, Distrust, Quality and Anxiety. These factors were related to personality, motivational and behavioral variables.

There are probably many reasons why little has been written on the subject of attitude towards money and savings. The most obvious is people's reluctance to discuss their personal assets and finances. The issue of the participants' attitudes towards saving is relevant in view of the low response rates (number of questionnaires returned) as well as comments made by the participants. Some comments were heard during the pilot study, while others were written on the returned questionnaires/placemats. The following comments are just a few that give insight into the elderly's attitude toward money and saving:

1. "I let my banker take care of this";
2. "I don't have enough to worry about";
3. "No taxable income";
4. "None of your business";
5. "I leave this up to my CPA"; and
6. "Ask Reagan"!

The comments are important when one considers that many of the elderly in this age group are not that familiar with compound interest. The banking industry was much less complicated 40-45 years ago when this population was at its prime, in earning and savings capacity. The neighborhood banker may have been revered like the family doctor, but this loyalty and trust has been replaced over the years with skepticism as the banking institutions became more sophisticated.

#### The Elderly as Test Takers

The literature revealed that the elderly have a lower participation rate in and a lower response rate to general testing conditions than younger adults, as documented by Hultsch (1981) and Peterson (1983). Peterson cites several studies that have reported fewer interviews being granted and fewer questionnaires returned in research that surveyed the elderly's interest in educational courses.

This lack of participation in itself, has not been studied extensively but researchers have offered some plausible explanations. Three general theories have been suggested to explain this behavior. These are: 1) cautiousness, 2) anxiety or arousal, and 3) disengagement. Hultsch reports that the main error in test situations is the error of omission. He credits this fact to the cautiousness of older adults. If the older learners are not reasonably certain of their responses, they simply do not respond in

a testing or survey situation. Peterson and Hultsch discuss the effects of test taking on the elderly and report that many elderly persons experience a higher level of anxiety or become overaroused and therefore do less well in testing situations. A study done by Mercer and Butler (1967) found that the aged who refused to be interviewed were more disengaged than the respondents. Although the "disengagement theory" has been discredited over the last decade, it may have some relevance or explanatory power in reference to interviews or survey research and participation rates.

There are other non-cognitive factors that may effect the elderly's participation and performance in testing or questioning situations. These include visual and auditory problems, health status, interest in the subject matter and pacing (timed test vs. self-paced).

## PROCEDURE

Background

This study was done with the cooperation and support of the North Central - Flint Hills Area Agency on Aging (NC-FH AAA) which initiates, coordinates and administers aging programs in an 18 county area under the Older Americans Act of 1965. Title IIIc of the Act, the National Nutrition Program for the Elderly, provides for nutrition sites designed to meet the nutritional and socialization needs of the elderly. Statewide, there are 13 nutrition projects operating 145 meal sites. The NC-FH AAA, with headquarters located in Manhattan, serves 31 nutrition sites in the 18 county area of Northeast Kansas. Title III of the Older Americans Act also provides for community services for the elderly. One of the services mandated under the Act is Information on Referral. The NC-FH AAA has, since its inception, linked this with consumer education and protection calling it Consumer Assistance and Information. One of its responsibilities is to provide consumer information to the nutrition sites.

Elaine Johannes, supervisor of Consumer Information and Assistance, had attended the 1983 Governor's Conference on Aging and learned of the Savings Resolution proposal by the Kansas Citizens Council on Aging, Inc. which was distributed at the conference (see page 23 and Morse, 1984, p.18). She expressed interest in the resolution and particularly in giving a test on interest rate awareness to the elderly as a consumer education project. She



encouraged the development of this study and offered the cooperation of her staff.

The AAA was a natural selection for the study because of their monthly educational projects and interest in consumer information. Each month, consumer or nutrition information is disseminated at the nutrition sites in the form of placemats which are placed on the table and read and discussed during meal time when most of the participants are present.

### Participants

Any individual 60 or over and their spouses of any age can participate in the nutrition program. The purpose of the program, according to Title III guidelines, is to meet the nutritional and socialization needs of the elderly that do not eat properly because they (1) cannot afford to do so; (2) lack the knowledge and/or skills to select and prepare nourishing and well balanced meals; (3) have limited mobility which may impair their capacity to shop and cook for themselves; or (4) have feelings of rejection and loneliness which obliterate the incentive to prepare and eat a meal alone. There are no income requirements; the participants are given the opportunity to pay all or part of the cost of their meals.

The NC-FH AAA issues an annual report which includes demographic characteristics of the participants in the 18-county area. This report (see page 25) enabled the author to assess the characteristics of the participants in the study and compare them to

## MID-KANSAS SENIOR SERVICES NUTRITION PROGRAM (PSA #08)

## SURVEY OF CONGREGATE AND HOME-DELIVERED PARTICIPANTS

Lori Gilbert, R.D., Nutrition Program Director

North Central-Flint Hills Area Agency on Aging

Confidential questionnaires were sent to 30 nutrition sites in the 18 county PSA. 1,117 participants responded (968 congregate and 149 home-delivered).

Results are as follows: (\*\*Denotes highest line item per category\*\*)

<u>CONGREGATE PARTICIPANTS</u>				<u>HOME-DELIVERED PARTICIPANTS</u>			
<u>Sex:</u>	Male	306	32%	<u>Sex:</u>	Male	44	30%
	**Female	647	67%**		**Female	99	66%**
	No Response	15	2%		No Response	6	4%
<u>Living Arrangements:</u>				<u>Living Arrangements:</u>			
	With Spouse	349	36%		With Spouse	41	28%
	With Relative	36	4%		With Relative	12	8%
	Other	12	1%		Other	3	2%
	**Alone	543	56%**		**Alone	92	62%**
	No Response	28	3%		No Response	1	.6%
<u>Age:</u>				<u>Age:</u>			
	Below Age 60	31	3%		Below Age 60	3	2%
	60 - 75	405	42%		60 - 75	38	26%
	**75 and Over	513	53%**		**75 and Over	106	71%**
	No Response	19	2%		No Response	2	1%
<u>Income - Single:</u>				<u>Income - Single:</u>			
	**\$390 or Less	202	33%**		**\$390 or Less	35	33%**
	\$390 - \$487	146	24%		\$390 - \$487	33	31%
	\$487 - \$637	110	18%		\$487 - \$637	22	21%
	Over \$637	109	18%		Over \$637	13	12%
	No Response	42	7%		No Response	4	4%
<u>Income - Couple:</u>				<u>Income - Couple:</u>			
	\$518 or Less	40	11%		\$518 or Less	13	30%
	\$518 - \$648	72	20%		**\$518 - \$648	16	37%**
	\$648 - \$833	78	22%		\$648 - \$833	8	19%
	**Over \$833	133	37%**		Over \$833	5	12%
	No Response	36	10%		No Response	1	2%

Over half of the participants live alone and are 75 years or older. Of those living alone, about 65% earn less than \$487 per month or \$6,000 per year.

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the elderly population in general. The nutrition site participants are not a representative random sample of the elderly. Indeed, they represent an "extreme" of the elderly population in that the participants, relative to other elderly, consist of: (1) a greater ratio of women to men (2-1) than the general elderly population (3-2), (2) a larger number of those living alone, (3) a larger proportion over 65 (near 90% of nutrition site participants are over 65 and 53% are over 75 years), and (4) a larger number of those (75%) with income below the median income level. Given the proportion of those participants over 75, it is probable that this target group had less education than the elderly population in general. Having less money and less education has perhaps given them less of an opportunity to save, or take an interest in saving money.

Each nutrition site is managed by a site director or manager, who works closely with the AAA and its field representatives. The AAA field representatives deliver information to the site managers including the placemats used in the educational projects.

The original test instrument developed for use with college students was modified for the project. First it needed to be enlarged to an 11" by 14" placemat size and to have the print enlarged for the elderly to be able to read. Secondly, the wording was edited slightly for the elderly reader and the choices highlighted to stress the differences in what was being compared. Third, the confidence score with six numbers was changed to three with the words "not sure", "fairly sure", and "very sure" repeated for each question. Finally, the placemat was printed with black

lettering on yellow paper for contrast (Appendix A).

### Pre-test

A pre-test was conducted by the author in June of 1984 at the two senior centers in Manhattan, Kansas: the Senior Center and the Douglass Center. The placemats were arranged on the table along with the table service. The participants at the Senior Center, approximately 40 that day, were asked to read and complete the questionnaire prior to or during the meal. Most of the participants, approximately two-thirds did not complete the questionnaire. The results were similiar at the Douglass Center. Although there appeared to be greater interest and more attempts at completing the questionnaire, still only approximately one-third of these returned placemats were useable. The exact reason for the low participation rate is unknown; however, the following problems were learned from the pre-test: (1) the test instrument was too busy, (2) the questions could be better composed in the placemat, (3) management was not enthusiastic about the idea of giving a test, and (4) the participants were reluctant to take a test. Many of the participants did not want to be bothered with filling out the questionnaires. They had come to the site for a meal and to socialize for an hour over lunch and then go home. For many, the survey may have seemed an intrusion into their privacy and they showed this (in a nice enough way) by not participating in the study.

These problems were met by: (1) deleting the pictures of savings advertisements, (2) enlarging the print even further, (3) rewording the instructions into a more direct language, and (4)

changing the placemat color from yellow to tan (Appendix B). The need to develop more enthusiasm and excitement about the project on the part of the site director was recognized by offering a prize to the site manager with the highest participation rate. To build the self confidence of the site managers, who undoubtedly felt insecure in asking participants to answer test questions which even he or she had difficulty in answering, the following instruction booklet was developed. The booklet was designed to provide guidance for the site manager by giving instructions to be read aloud in introducing the test. How closely the booklets were followed, if at all, is unknown. The 10-page folded booklet, "Nutrition Site Director's Guide Book for Interest Rate Quiz" follows.

NUTRITION

SITE

DIRECTOR'S

GUIDE BOOK

for

INTEREST RATE QUIZ

DIRECTOR'S PRIZE AWARD

A \$20 saving account will be  
opened in the name of the director  
with the highest returns

(see back page for details)

INTEREST

CAN

BE

INTERESTING

and

# INTEREST RATES

? ? ? ? ?  
 ? ? CAN BE ?  
 ? ? CONFUSING ?

18 MONTH FIXED RATE CERTIFICATE  
**10.250%\***

compounded daily

Fixed Rate

effective annual yield

**6 MONTHS**

Current Rate Annual Yield

## SAVINGS RATES

\$10,000 Min.

\$500.00 MIN.

365-day

monthly

7.815%

**save**

8.125%

DAILY RATE

18 MONTH FIXED RATE CERTIFICATE  
**11.000%\***

effective annual yield  
**10.792%**

360-day basis

10.0%

or  
MADE SIMPLE  
like

Cents/ \$100 / Day

Here is where  
we need your help!

to know which is easier for you

!! H E L P !!

We have 9 pairs of questions

Tell us which seems  
to you to  
be the better choice

## LET'S GET STARTED -----

Would you prefer your  
interest to be compounded

Monthly  
or  
Daily

circle a  
or  
circle b

How sure are you about this?

	Not	Fairly	Very
	Sure	Sure	Sure
circle			
your			
choice	1	2	3

NOW LET'S  
LOOK AT QUESTION #2

Would you prefer to earn

2.876¢ a day?

circle a

or

or

2.864¢ a day?

circle b

How sure are you?

not  
sure

fairly  
sure

very  
sure

1

2

3

DIRECTOR:

Continue to lead them  
through the other 9 questions

---

For the last 5 questions  
all we want is your best guess

No fancy calculations

If in doubt,

circle an answer

then circle Not Sure

Thank-you for your cooperation.

Donna Edwards

Project Director

## PRIZE AWARD

\*Award will be based on the number of usable returns in relation to the number of meals served. In case of a tie in percent return, the largest number will be the winner.

Judges will be from the Kansas Citizens Council on Aging, Inc. and their decision will be final.

RETURN SHEET  
FINAL INSTRUCTIONS

10

1. How many were at the site? \_\_\_\_\_
2. How many completed the questions? \_\_\_\_\_
3. Name of nutrition site \_\_\_\_\_

Your Name \_\_\_\_\_

Address \_\_\_\_\_

Name of savings institution that you want  
your account in should you be the winner

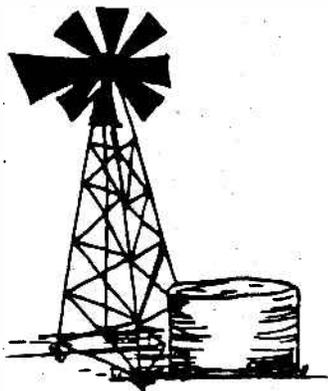
Please mail the completed forms  
in the self addressed envelope with  
this sheet.

RETURN SHEET

### Data Collection

The brochure and placemats were delivered to 30 nutrition sites by the field representatives of the AAA together with a letter from Elaine Johannes (see p. 40). Self-addressed envelopes were provided for the return of the questionnaires to the Family Economics Department. It was up to the discretion of the Site Manager whether to take part in the study. The author realizes that a threat to external validity does exist because of the experimenter effect. The difference in the way the site managers presented the instructions in the brochure would affect the participation rate and how well the participants did.

Of the 30 sites in the study, 13 participated. A total of 331 placemats were returned from the 13 sites, and of those 269 were useable as shown in Table 1.



# North Central - Flint Hills Area Agency on Aging

MID KANSAS SENIOR SERVICES FELLOWSHIP MEALS  
CONSUMER ASSISTANCE AND INFORMATION

2601 Anderson Avenue, Manhattan, Kansas 66502 (913) 776-9294

## \*M E M O R A N D U M\*

TO: Site Managers/Center Directors

FROM: Elaine M. Johannes, Director *EMJ*  
Consumer Assistance & Information

RE: Interest rate placemat

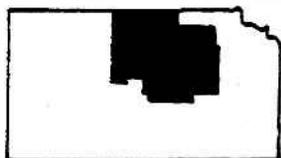
DATE: June, 1984

In cooperation with the Department of Family Economics at Kansas State University, Consumer Assistance and Information is sponsoring the Interest rate survey quiz placemat. The placemat is a way for the departments' faculty to gather data on what older adults know about interest rates, and your cooperation is appreciated in this research effort.

If you want your center to participate, please have the participants complete the placemat quiz to the best of their ability with your direction provided by the attached quiz guide book.

After your participants complete the placemat, please mail it in the attached envelope with a 20 cent stamp (the Family Economics Department will pick up any postage due.)

Again, your participation in this research is purely voluntary, but your cooperation is appreciated.



*Serving the Heartland of Kansas*

Chase - Clay - Cloud - Dickinson - Ellsworth - Geary  
Jewell - Lincoln - Lyon - Marion - Mitchell - Morris  
Ottawa - Pottawatomie - Republic - Riley - Saline - Wabaunsee

Table 1. Response rates of the 13 participating nutrition sites

Site	Number at site	Number of completed test	Number of useable returns
1.	86	66	56
2.	43	41	38
3.	50	36	28
4.	66	36	35
5.	48	37	15
6.	32	23	15
7.	23	12	11
8.	21	8	8
9.	39	25	20
10.	47	16	16
11.	36	18	16
12.	12	8	6
13.	<u>26</u>	<u>5</u>	<u>5</u>
Total	529	331	269

\*Tests were rejected if only 3 or fewer of the first 9 questions were answered.

## RESULTS

The results of the 269 completed tests are presented in two parts reflecting the two functions being tested; the ability to compare rates and the ability to calculate interest as offered by the way the facts are presented.

### Comparison Questions

#### Cents/\$100/Day (Questions 2 and 9)

Question 2 asked the respondents to select the preferred rate: a) 2.876 or b) 2.864 with "a" correctly selected by 71%. Question 9 asked the respondents to select the preferred rate: a) 2.859 or b) 2.916. Again, 88% of the respondents answered correctly by choosing answer "b". A total of 39 did not not respond to question 2 and 29 did not answer question 9.

An average of 80% answered both questions 2 and 9 correctly.

#### Compound Frequency - Daily vs. Monthly (Questions 1 and 8)

Question 1 compared monthly vs. daily compounding at the same rate. Daily was correctly identified by 81% of the respondents.

Question 8 compared monthly vs. daily at the same 10.5% rate and included the 365 day base. Here again, 78% recognized daily as the correct response. The daily rate for 10.5% monthly compounding is 2.864 cents and the daily rate for 10.5% daily compounding is 2.876 cents per \$100 per day.

An average of 80% answered questions 1 and 8 correctly, the same percent as answered Cents/\$100/Day questions.

Day Base - 360 vs. 365 (Questions 3, 5, and 6)

Questions 3, 5 and 6 asked which rate of interest is preferred, if figured on a 360 or 365 day base. Most respondents erroneously believed the 365-day base to be preferable to a 360-day base. Only 19%, 20%, and 20% respectively, answered questions 3, 5, and 6 correctly. The reason that the 360-day base is preferable is that it pays a higher daily rate of 2.916 cents rather than 2.876 cents.

Crossover of Daily/Monthly and 360/365 (Question 7)

Question 7 compared both daily and monthly compounding with different day bases. Only 18% of the respondents correctly identified 10.5% compounded monthly on a 360-day base to be preferable to 10.5% compounded daily on a 365-day base. The loss in frequency of compounding is more than offset by the gain from the 360-day base.

Nominal rate vs. yield rate (Question 4)

Asked to select between 11.3% yield and the 10.5% compounded daily (which on a 360-day base would yield 11.23% and 11.07% on a 365-day base), 33% correctly answered 11.3% yield. An interest rate

of 10.5% compounded daily is equivalent to 2.876 cents or 2.917 cents depending on the day base, and a 11.3% yield is equal to 2.933 cents per day.

Table 2. Responses of the 269 participants to comparison questions grouped by area

Question number	Responses			Percent correct
	none	a.	b.	
<u>Daily vs. Monthly</u>				
1	17	47	<u>205</u>	81%
8	17	55	<u>197</u>	<u>78%</u>
			weighted average	80%
<u>Cents/\$100/Day</u>				
2	39	<u>163</u>	67	71%
9	29	29	<u>211</u>	<u>88%</u>
			weighted average	80%
<u>360 vs 365 Day Base</u>				
3	26	<u>47</u>	196	19%
5	23	<u>50</u>	196	20%
6	31	191	<u>47</u>	<u>20%</u>
			weighted average	20%
<u>Crossover of Daily/Monthly and 360/365</u>				
7	21	204	<u>44</u>	18%
<u>Nominal rate vs. yield rate</u>				
4	36	155	<u>78</u>	33%

\* Numbers underlined are the correct responses

### Statistical Significance

The standard error of estimate of a sample percent varies inversely with the square root of the sample size and directly with the probability level, that is,  $\sqrt{pq/n}$  where  $p$  = the percent correct and  $q$  = the percent incorrect. For questions with an expected  $p$  = 50% answer, and  $n=243$  (the average number of responses per question) the standard error of estimate is the square root of  $(.5) (.5)$  divided by 243 which is equal to .03208 or 3.2%. If the question has a  $p$  = 95%, the standard error of estimate is 2.74%.

There is approximately a 19 in 20 chance that a sample percent will fall within the limits of 1.96 times the standard error above or below the population percent ( $p$ ) correct.

For example, where  $p$  = 50% and  $n$  = 243, the standard error of 3.2 multiplied by 1.96 gives plus or minus 6.3%. Thus, for a 50/50 population, there is only a 5% chance of a percentage falling below 43.7% or above 56.3% by chance from repeated tests. And at the other extreme of the data, where  $p$  = 88% the standard error is 2.1 and the confidence level is  $88 \pm 4.1$ , that is between 83.9% and 92.1%.

All questions were significantly different from chance. Furthermore, the average of 80% correct responses to the compound frequency and Cents/\$100/Day questions was significantly higher than the responses to the other five questions.

### Calculations Problems

The percentage of respondents who did not answer the calculation problems was much higher than for those not answering the comparison questions. The calculations problems asked respondents to select the best of five choices, so each possible answer had a 20% chance selection.

#### Conventional rate expressions

The first three questions, (10-13), required calculation of the amount of interest with the facts given in conventional percentage rate terms. The response rate was slightly better than 20% chance (22%, 30%, and 21%) with an average of 24%.

#### Cents/\$100/Day

Questions 13 and 14 asked the same type of question expressed in the Cents/\$100/Day format. Most respondents (71%) gave 6 Cents as the correct answer to question 13. Only 35% answered question 14 correctly (over \$6). It required recognition of the power of compounding interest. If the simple interest answer (\$6) is accepted as correct, the number of correct answers is 117 or 63%. In either case, the respondents evidenced greater ability to handle Cents/\$100/Day than conventionally expressed rates in calculating interest.

Table 3. Responses of 269 participants to computation problems grouped by areas.

Question number	Responses						Percent correct
	None	(1)	(2)	(3)	(4)	(5)	
<u>Conventional Rates</u>							
10.	81	31	<u>41</u>	32	39	45	22%
11.	80	16	24	26	<u>57</u>	66	30%
12.	91	20	29	<u>38</u>	45	46	21%
<u>Cents/\$100/Day</u>							
13.	80	3	21	12	17	<u>133</u>	71%
14.	83	9	16	43	52	<u>65</u>	35%
14. (4 and 5)						117	63%

\*Number underlined are the correct responses

## SUMMARY

When asked to identify the correct choice with facts presented in Cents/\$100/Day and conventional interest rate terms, the elderly nutrition site participants chose the correct answer to questions expressed in Cents/\$100/Day as often as in the familiar daily and monthly compounding terms. That is, both pairs of questions were answered correctly by 80% of the respondents. The other questions expressed in conventional terms, were answered correctly by only 18% to 33% of the participants, much lower than chance (50/50) selection.

These results discredit the prediction that interest rates, if expressed in Cents/\$100/Day, would be confusing to consumers. The low percentage of correct answers to the questions expressed in conventional terms indicates that the current forms of predicting interest are confusing to consumers.

## DISCUSSION

The literature revealed the significance of savings to the elderly population in general and would suggest that the elderly nutrition site participants would have had at least limited experience with savings accounts. This would explain their awareness and accuracy in answering the daily vs. monthly compounding questions.

Yet the demographic characteristics of age, income and educational level of the nutrition site participants suggest that they may not have had the opportunity for or interest in savings, that the elderly population at random may have had. This in part may have contributed to the low response rate or lack of interest in the test. In addition, the theories discussed in the literature review, namely the error of omission or cautiousness theory, may account for the fall off in response to the last five questions.

Some comments heard during the pilot study and others written on the returned questionnaires/placemats give insight into the elderly's attitude toward money and saving:

1. "I let my banker take care of this";
2. "I don't have enough to worry about";
3. "No taxable income";
4. "None of your business";
5. "I leave this up to my CPA"; and

## 6. "Ask Reagan"!

The participants at one site became so interested in the questions that one of them volunteered to take the placemat to a local banker to get his answers to the questions. The banker's test was returned by the site manager along with those of the respondents; he had missed four questions. This may reflect that banker's ability, but it also reflects the state of confusion about interest rates and the ways interest rates are currently expressed.

Furthermore, it is likely that many of the elderly in this group were not familiar with compound interest. The banking industry was much less complicated 40-45 years ago when this population was at its prime in earning and savings capacity. The neighborhood banker may have been revered like the family doctor; i.e. he could be trusted and did not need to be tested. However, over the years this loyalty and trust has been replaced with skepticism as banking institutions have become more sophisticated and dependent on computers.

## CONCLUSIONS

The conclusions of this study are that: (1) The elderly nutrition site participants did not find the Cents/\$100/Day format of interest rate disclosure confusing. (2) When asked to identify the correct choice between interest rates expressed in Cents/\$100/Day and conventional interest rate terms of daily and monthly compounding, the elderly chose correctly the better rate

equally well (80%) whether expressed in Cents/\$100/Day , or in choosing between the familiar daily over monthly compounding. (3) Correct choices between rates using the less familiar conventional terms fell to the low levels of 18% and 20%. (4) The calculation questions demonstrated a far greater ability of these elderly to answer the questions correctly with the facts given in Cents/\$100/Day (71% correct) than in conventional terms (18%-33% correct).

One clear implication from this study is that: If this non-affluent elderly population was not confused by the Cents/\$100/Day form of rate expression, then neither would a random sample of the population at large be confused by Cents/\$100/Day .

## ACKNOWLEDGMENTS

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APPENDIX A

# WHICH WOULD YOU PREFER TO GET---

How confident are you?

Preference Not Fairly Very  
(Circle) Sure Sure Sure

**CONFUSED ABOUT SAVINGS RATES**

compounded daily  
Fixed Rate  
Annual Yield  
8.125% 10.0% 7.813%

6 MONTHS  
DAILY RATE  
365-day basis  
monthly

1.	interest compounded monthly at the same rate	a.	1	2	3
	interest compounded daily at the same rate	b.			
2.	2.876¢ per \$100 per day	a.	1	2	3
	2.864¢ per \$100 per day	b.			
3.	interest figured daily on a 360-day basis	a.	1	2	3
	interest figured daily on a 365-day basis	b.			
4.	10.50% compounded daily	a.	1	2	3
	11.3% annual yield	b.			
5.	10.5% compounded daily on a 360-day basis	a.	1	2	3
	10.5% compounded daily on a 365-day basis	b.			
6.	10.6% compounded daily on a 365-day basis	a.	1	2	3
	10.5% compounded daily on a 360-day basis	b.			
7.	10.5% compounded monthly on a 360-day basis	a.	1	2	3
	10.5% compounded daily on a 365-day basis	b.			
8.	10.5% compounded monthly on a 365-day basis	a.	1	2	3
	10.5% compounded daily on a 365-day basis	b.			
9.	2.859¢ per \$100 per day	a.	1	2	3
	2.916¢ per \$100 per day	b.			

Sample Advertisements

18 MONTH FIXED RATE CERTIFICATE  
**10.250%**  
effective annual yield  
**10.792%**

30 MONTH FIXED RATE CERTIFICATE  
**10.750%**  
effective annual yield  
**11.347%**

48 MONTH FIXED RATE CERTIFICATE  
**11.000%**  
effective annual yield  
**11.625%**



Shawnee Federal Savings

A

# GUESS THE AMOUNT OF INTEREST YOU WOULD GET---

(Circle)

10.	-on \$100 deposited 2 days before the end of month in your 5½% NOW account:							
	Circle:	1¢	3¢	5¢	5½¢	10¢	1	2 3
11.	-on \$100 deposited the first day of the month so it earned for 30 days at 5½%:							
	Circle:	5¢	15¢	30¢	45¢	60¢	1	2 3
12.	-on \$100 for 3 days in an account paying 10.5%, compounded daily:							
	Circle:	3¢	6¢	9¢	10.5¢	12¢	1	2 3
13.	-on \$200 for 1 day in an account paying 3¢ per \$100 per day, compounded daily:							
	Circle:	1¢	3¢	4¢	5¢	6¢	1	2 3
14.	-on \$200 for 100 days in an account paying 3¢ per \$100 per day, compounded daily:							
	Circle:	Under \$3	\$3	Between \$3 & \$6	\$6	Over \$6	1	2 3

18 MONTH FIXED RATE CERTIFICATE  
ON **2.80¢**  
Cents per \$100 per day  
Daily Compounded

30 MONTH FIXED RATE CERTIFICATE  
ON **2.94¢**  
Cents per \$100 per day  
Daily Compounded

48 MONTH FIXED RATE CERTIFICATE  
ON **3.01¢**  
Cents per \$100 per day  
Daily Compounded



Shawnee Federal Savings

B

Which is easier to understand?

A or B

**APPENDIX B**

# WHICH WOULD YOU PREFER?

Circle what you think or guess is the right or better answer. Then tell us how confident you are of your answer by circling

	CIRCLE		Not Sure	Fairly Sure	Very Sure
	a. monthly	b. daily			
1. to get interest compounded <sup>monthly</sup> daily at the same rate					
2. to get $\frac{2.876\epsilon}{2.864\epsilon}$ per \$100 per day	a. 2.876 $\epsilon$	b. 2.864 $\epsilon$			
3. to get interest figured daily on a $\frac{360\text{-day}}{365\text{-day}}$ basis	a. 360-day	b. 365-day			
4. to get 10.5% compounded daily <u>or</u> to get 11.3% annual yield	a. 10.5% compounded daily	b. 11.3% annual yield			
5. to get 10.5% compounded daily on a $\frac{360\text{-day}}{365\text{-day}}$ basis	a. 360-day	b. 365-day			
6. to get $\frac{10.6\%}{10.5\%}$ compounded daily on a $\frac{365\text{-day}}{360\text{-day}}$ basis	a. 10.6% 365-day	b. 10.5% 360-day			
7. to get 10.5% compounded <sup>monthly</sup> daily on a $\frac{360\text{-day}}{365\text{-day}}$ basis	a. monthly 360-day	b. daily 365-day			
8. to get 10.5% compounded <sup>monthly</sup> daily on a 365-day basis	a. monthly	b. daily			
9. to get $\frac{2.859\epsilon}{2.916\epsilon}$ per \$100 per day	a. 2.859 $\epsilon$	b. 2.916 $\epsilon$			

## GUESS THE AMOUNT OF INTEREST YOU WOULD GET---

10. -on \$100 deposited 2 days before the end of month in your 5½% NOW account: Circle:            1 $\epsilon$ 3 $\epsilon$ 5 $\epsilon$ 5½ $\epsilon$ 10 $\epsilon$	Not Sure	Fairly Sure	Very Sure
11. -on \$100 deposited the first day of the month so it earned for 30 days at 5½%: Circle:            5 $\epsilon$ 15 $\epsilon$ 30 $\epsilon$ 45 $\epsilon$ 60 $\epsilon$	Not Sure	Fairly Sure	Very Sure
12. -on \$100 for 3 days in an account paying 10.5%, compounded daily: Circle:            3 $\epsilon$ 6 $\epsilon$ 9 $\epsilon$ 10.5 $\epsilon$ 12 $\epsilon$	Not Sure	Fairly Sure	Very Sure
13. -on \$200 for 1 day in an account paying <u>3<math>\epsilon</math> per \$100 per day</u> , compounded daily: Circle:            1 $\epsilon$ 3 $\epsilon$ 4 $\epsilon$ 5 $\epsilon$ 6 $\epsilon$	Not Sure	Fairly Sure	Very Sure
14. -on \$200 for 100 days in an account paying <u>3<math>\epsilon</math> per \$100 per day</u> , compounded daily: Circle:            Under                    Between                    Over \$3                    \$3 & \$6                    \$6	Not Sure	Fairly Sure	Very Sure

ELDERLY'S PERCEPTION OF  
INTEREST RATE QUOTATIONS ON SAVINGS

by

DONNA ORMSBY EDWARDS

B.S., University of Arizona, 1983

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AN ABSTRACT OF A MASTER'S THESIS

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Deregulation of interest rates paid by financial institutions on savings accounts has accented the need of a standard method of computing and quoting interest rates on savings. Presently, consumers are unable to accurately compare interest rates and verify interest paid on savings instruments.

Early legislative efforts to address this need have been in the form of Truth in Lending, requiring disclosure of the Annual Percentage Rate, Periodic Percentage Rate and the Annual Percentage Yield. However, if it is assumed that consumers expect to be paid interest daily on all their money, then the daily rate is sufficient and can replace the three rates. Dr. Richard Morse of Kansas State University proposed that the daily rate be expressed in Cents/\$100/Day format. To test whether or not this method of rate disclosure would be more or less confusing to consumers than traditional conventional rate disclosures, he designed a test of paired quotations, and administered the test to over 2000 college students. The results clearly indicate that rate information expressed in Cents/\$100/Day is more easily understood than rates expressed in traditional terms.

The question was raised whether non-students, particularly the elderly would be confused by such a new way of stating interest rates. Therefore, the purpose of this study was to extend the test to an elderly population, specifically to determine if the elderly consumers make correct responses more frequently when comparing

interest rates and computing interest amounts with the facts disclosed in Cents/\$100/Day or expressed in conventional savings terms.

The data were obtained by administering tests to 287 elderly participants in 13 Nutrition Sites (Senior Centers) in Northeast Kansas. The results are less precise than those from the college students, but are very similiar. The nutrition site participants answers were significantly higher from chance selection, indicating that the Cents/\$100/Day format was not confusing to the elderly. As evidence of their understanding, their correct responses to Cents/\$100/Day were as high as those responses given to the commonly recognized expressions of daily over monthly compounding and decidedly higher than their responses to the other questions presented in conventional terms.

Most elderly persons have savings accounts and these accounts constitute a significant element in their financial security. The elderly, like others, are confused by changes in the savings market.

The conclusion of this study is that interest rates expressed in Cents/\$100/Day can be readily assimilated by elderly consumers and enable them to compare and compute interest rates.