

for material affluence and a strong wave of me-ism have not resulted in the anticipated improvement in individuals' assessments of the quality of their lives. We may well be rounding the turn toward an evolution of declining expectations. Early evidence exists in the shift to less costly transportation; indications that many young people are giving up on the American dream of owning their own home, at least until a later stage of life, and shifting their sights from the spacious suburban ranch style house that had come to be regarded by their parents almost as a right of any hard-working American; the increased incidence of young adults remaining in their parental homes during their early working years; and the decline in the birth rate, to the extent that economic pressures are responsible. We may be witness to the first generation of Americans whose material lives may not be better than those of their parents. If that is the case, then better that development be met with a change of life orientations and expectations than with diehard insistence that any constraint on our material level of living constitutes doomsday. The latter perspective would be detrimental to individuals and put enormous stress on our economy and society.

The future is likely to witness, on balance, increased reliance on home production, intra- and inter-household grants, and search for life satisfactions outside the commercial markets for goods and services. The quest for creative endeavors, self-fulfillment, and activities involving interpersonal relationships may contribute to that direction. If market goods and services become increasingly costly in real terms, people will quite logically turn more of their energies toward home production activities. Indeed, it is interesting to speculate whether, as energy and other resources become more scarce and high-priced, and as the real incomes that can be earned at market are squeezed, the market might lose a sufficient amount of its advantage over the household as a production unit by virtue of specialization and economies of scale, that some of its current comparative advantage might shift to the household.

Market transactions are likely to experience a trend toward relatively more services, compared with goods. Communication, information, and education seem to be prime areas for expansion, particularly in view of the fact that they are not exhausted nor necessarily diminished by use, and that modern technology permits dissemination of ideas at relatively modest cost.

Unless we adopt new economic and social policies to create a greater sense of security regarding income flows, conditions are likely to make consumers somewhat more cautious than in times past. Such a development would have substantial implications; consumers would not again stave off a recession by continued spending at high levels in the face of inflation, as they have in recent periods when the stimulus for the spending was fear of facing even higher prices in the future.

Consumers in the economic climate of the future will be increasingly insistent upon satisfactory

returns for their outlays, and upon satisfaction of grievances. People will be more sophisticated and effective in their role as consumers, will put greater emphasis on quality and durability and seek functional value in purchases. They will be increasingly conscious of operating and repair costs, be more willing to make greater initial outlays to reduce such costs, and keep and use things longer. They will seek efficiencies in the consumption process, demanding improved information as a basis for consumer choice, rather than having to rely upon guesswork or the superlatives of product promotion. Economies will be sought through increased formation of cooperatives and buying clubs, and through multiple-household ownership of expensive, infrequently-used goods. There is likely to be more interest in, and support for, consumer education programs in the formal school system, adult education programs, and mass media programming. And the consumer movement will likely find somewhat greater strength in local consumer organizations, many of them focused on one or a few issues. Indications are that sensitivity to consumer interests has become embedded in the American consciousness, and that consumerism has become an institutionalized element of our societal framework.

The income side of the ledger will vie strongly for people's attention. There will be continuing concern for employment opportunities, for adequate transfer programs to sustain the otherwise needy, for greater equity in income distribution, and for reform of a tax system pock-marked with so many loopholes that nominal rates are a mockery and honest citizens are increasingly drawn to the underground economy in an effort to create what they perceive to be equity by establishing their own tax shelters. Unless corporate management and organized labor establish an on-going accord which reduces inflationary pressures, sentiment will develop for a national incomes policy. Employment, incomes, tax equity--these elements have in them the seeds of social disharmony that will make the battles over truth in packaging, product safety, meat grading, and similar consumer issues, look like Sunday-school picnics.

Meantime--and particularly during the regime of the current national administration--we increase the pressures on that most vulnerable economic unit, the household, which is exhorted to both spend more and save more, and to keep a stiff upper lip and support "staying the course" when times are tough, in a society in which our destiny is determined not merely by a strong back, a willing spirit, and the invisible hand of Adam Smith, but by the very visible hands of the President, the chairman of the Federal Reserve Board, the Congressperson, the lobbyist, the captain of industry, and the labor boss. Surely a civilized society will expect more of its government than that it sit idly by with somewhat detached interest while economic forces work their effects in unbridled manner on the powerful and the weak alike--and that, at a minimum, it not aid and abet the cause and condition of the already powerful. Hopefully the experience of recent times will give us renewed appreciation for consumption as a central element in our economic process, and hopefully we will come

eventually to recognize the essentiality of a fairly egalitarian distribution of income to the effective functioning of our system. And surely we will learn a lesson from the absurdity, futility, and inequity of recent policies whose net result has been that the people who should have paid for a larger portion of the Federal expenditure have instead wound up owning more Federal debt.

fulfill that responsibility.

While matters that affect consumers' pocketbooks directly will command their strong attention, sufficient sophistication and sensitivity toward some broader issues will also keep those on the forefront of the public's concerns. It seems likely that when the current wave of anti-government, anti-regulation, anti-tax sentiment has spent its vigor, calm reflection by our citizens regarding societal needs may well lead to renewed demand for services provided by the public sector. Certainly the public is not long going to forego decent education, health care, police and fire protection, recreation areas, and other highly desirable elements of our life condition, or to permit its public buildings, roadways, and bridges to fall into a complete state of disrepair, and opt instead for more bangles, baubles, and beads.

Such matters as conservation of nonrenewable resources and environmental quality, consumer and worker safety, trade barriers, subsidies, market structure, regulations, and corporate accountability to the society will likely receive increasing attention from the public and consumer organizations. The singular interests of corporate America will not be left unchallenged; consumers, workers, and the public have come to view themselves increasingly as stakeholders in the productive enterprise of the nation, and will continue to press for input into policies that will make the production and distribution of goods and services increasingly accountable to that balance of interests. Is it too optimistic to predict that, if efforts are made to increase material abundance through the marketplace by reversion to environmental pollution, waste of non-renewable natural resources, despoilment of our natural heritage, and reduced efforts to assure worker and consumer well-being, coalitions of consumerists, environmentalists, conservationists, and labor interests will band together to quell such a tide? To the extent that possible efforts to render such groups impotent by turning them against each other in the interests of unbridled commercialism are successful, to that extent will the societal fabric be rent, and an unhealthy environment for consumers, business, and government prevail.

Fortunately, we can do something about the economic weather--and even the climate--through the aggregate of our individual actions and the policies we put into place as a society. Our responsibility as a generation in the long sweep of history is not to be epilogue to a glorious past, but prologue to the best that the future can be. The evolving economic climate presents a challenge that will demand creativity, new orientations, new modes of conducting the affairs of society, and our very best efforts, if we are to

SAFETY AND PERFORMANCE POLICIES:
WINNERS AND LOSERS AMONG CONSUMERS

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ABSTRACT

While consumer protection policies are often thought of as shifting wealth and power from sellers to buyers, these policies can also redistribute wealth and power among consumers. This paper reviews current knowledge about how the benefits and costs of safety and performance policies are distributed among consumers. It demonstrates the multiple bases of such distributional effects as well as considers their political implications.

The aim of most consumer protection policies is to increase the rights and powers of buyers relative to those of sellers (19). And there have been some attempts to evaluate the benefits and costs to consumer of these policies (4, 5, 8, 15, 32, 34, 41). In such studies, consumers are usually treated as an undifferentiated group when, in fact, the benefits and costs of consumer protection policies are usually distributed among different types of consumers.

The uneven impact among consumers of policies which regulate prices has received some attention, especially interest rate ceilings on consumer credit (19, 14, 16, 17, 35, 36, 42) and rent controls (1, 3, 18, 24, 31). There has been little consideration, however, of the distributional impacts among consumers of policies regarding safety and performance. In distinguishing between policies with collective (undifferentiated) versus differential impacts, Nadel (27) uses health and safety policies as the quintessential examples of policies "which affect citizens at every income level nearly equally" (p. 219). This paper explores whether benefits and costs of safety policies are not only differentially distributed according to income, but according to other characteristics as well.

Much of the evidence reviewed is speculative in nature. Therefore, this paper only opens the discussion of the distributional effects of consumer safety and performance policies. Policies regarding automobiles, food additives, power lawn mowers, furniture, and home insulation are used to exemplify the distributional effects of safety policies. Performance policies are illustrated by energy efficiency standards, drug efficacy requirements, and occupational licensing. The authors welcome information regarding additional examples.

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SAFETY

The major initiatives to promote consumer safety reflect the efforts of three federal agencies: the National Highway Traffic Safety Administration, the Food and Drug Administration, and the Consumer Product Safety Commission. This discussion of the distributional effects of consumer safety policies therefore covers automobiles, food and drugs, and household products.

Automobile Safety

Numerous estimates have been made of the benefits (28, 34, 37) and costs (28, 46) of automobile safety regulations, but less is known regarding the distribution of these benefits and costs. Several assertions follow from the fact that safety regulations increase the price of new automobiles. One is that safety-related price increases represent a smaller percentage of the price of more expensive cars; another is that they represent a smaller percentage of the income of more affluent consumers (47). Both assertions suggest that the costs of automobile safety regulations are regressively distributed. The observation that safety-related price increases force less affluent consumers to postpone new car purchases or shift from the new to the used market leads to the same conclusions (11).

Assertions such as those above reflect the tendency to conceptualize distributional impacts along the dimension of income. The groundwork for a very different view is laid by Colantoni, Davis, and Swaminathan (6). They demonstrate that the impact of auto safety standards depends on an individual's (1) willingness to accept risk and (2) accuracy in perceiving risk. The authors do not pursue the implications of the first factor; they simply assume that risk aversiveness is a positive function of income. The implications of differences in the accuracy of risk perception are considered in detail, however.

First consider an individual who accurately perceives the safety risks of driving a car without safety equipment and considers these risks acceptable. Safety standards force this type of consumer to behave irrationally, that is, to buy more safety and less of something else than he/she otherwise would. Now consider an individual who accurately perceives auto risks and considers them unacceptably high. Safety standards help this consumer to the extent that mandatory safety features cost the consumer less than safety features offered as optional equipment.

Finally consider individuals who misperceive the safety risks involved in driving. If a person

substantially underestimates driving risks, safety standards can improve efficiency. In other words, if such people had been fully aware of the risks of driving, they might have purchased safety features (and foregone some other item). If driving risks are overestimated, safety standards do not change the consumer's welfare because the safety features would have been (mistakenly) demanded anyway.

Overall, then, decisions regarding automobile safety standards can be analyzed largely as a "problem of weighing the current loss of one class of consumer against the potential gain to another class" (6). Risk underestimators are helped at the expense of accurately-perceiving risk acceptors. The broader questions raised by this analysis are:

- (1) Are there systematic individual differences in the willingness to accept risks (both physical and financial)?
- (2) Are there systematic individual differences in the accuracy of risk perception?

Some recent research has examined public willingness to accept the risks of nuclear power (25), while other research addresses the more general question of what determines the intensity and accuracy of risk perception (22, 39, 43). Yet, virtually nothing is known regarding individual differences in the magnitude and accuracy of risk perception (39). Some of the more likely bases for individual differences in risk perception are educational attainment, age, and gender. To the extent that such differences can be shown, discussion of the distributional impacts of safety standards will have to consider more than differences in income.

Food and Drug Safety

The food and drug safety laws of greatest current importance are amendments to the Food, Drug, and Cosmetic Act of 1936 -- the Food Additives Amendment of 1958 (especially the "Delaney Clause") and the 1962 Amendments. We will argue that the 1962 Amendments are primarily designed to improve drug performance rather than drug safety. Consequently, the 1962 Amendments will be discussed in a later section.

The heart of the Food Additives Amendment of 1958 is the so-called Delaney Clause. The clause essentially bans from the food supply any additive that has been found to cause cancer in man or animal. As a practical matter, the Delaney Clause has rarely been invoked; and in the case of saccharin, it has been ignored. As a basis for food or drug safety policy, however, the Delaney Clause continues to generate heated debate and legislative attempts to alter it. The Delaney Clause is controversial because it represents a "no-risk" approach to safety decisions, one in which an activity must be prohibited regardless of the relative magnitude of its risks and benefits (20). Applied in the area of auto safety, the no-risk approach could lead to the banning of all cars or to requirements that made cars into slow-moving fortresses.

For our purposes, the question is: what are the distributional impacts of a no-risk approach in food and drug safety policy? Different distributional issues are raised by each of two recent subjects of controversy: sodium nitrite and saccharin.

Sodium nitrite is used to preserve cured meats and to prevent botulism in particular. In addition, sodium nitrite improves the color and taste of cured meats as well as reduces the financial costs of handling, storing, and buying cured meats. The problem with sodium nitrite is that it may combine with amines and amides to produce carcinogenic nitrosamines. There is also some evidence that nitrites are carcinogenic by themselves (20).

The proposed ban of sodium nitrite raises the following distributional issue. Suppose that in the absence of sodium nitrites cured meats would require additional effort on the parts of both sellers and buyers of cured meats and that these efforts would increase the financial and time costs of consuming cured meats. For example, people would have to buy smaller quantities of meat on a more frequent basis. Therefore, the costs of such a ban would fall most heavily not only on people with relatively low incomes, but also on people who lack the time to properly select, handle and store cured meats (e.g., single-parents or consumers in rural areas).

Lave (20) suggests an additional way of thinking about the distributional impacts of policies designed to reduce exposure to carcinogens. He points out that the "genetic heterogeneity of the population means that some people are likely to be highly resistant to a chemical or biological insult and others highly sensitive" (p. 85). While no doubt true, this insight will not be useful in policy formulation unless and until these genetic differences can be shown to correspond to characteristics such as age, race, gender, ethnically, or geographical location.

What to do regarding the artificial sweetener saccharin raises the issue of intergenerational distributional effects. It is a little known fact, but the studies which led the Food and Drug Administration's proposal to ban saccharin showed that saccharin increased the incidence of cancer in the second-generation male rats tested (12, 26). Let us assume that findings based on rats are generalizable to human beings. Then the decision on whether to ban saccharin involves balancing relatively certain benefits to current consumers (e.g. weight control) against the less certain health risks to their male offspring. Saccharin thereby exemplifies the larger set of issues involving mutagens (substances capable of genetic alteration). Given the lack of political power of future generations, it should not be surprising if questions concerning mutagens are resolved to the benefit of present consumers.

Product Safety

The Consumer Product Safety Commission is in charge of promoting the safety of consumer products not regulated by either the National Highway Traffic

Safety Administration or the Food and Drug Administration. In this capacity, the CPSC has issued regulations covering such disparate items as baby cribs, fire detectors, bicycles, home insulation, matchbooks, and swimming pool slides.

A recurring theme in the CPSC's deliberations is the contention that product safety standards raise the price of bottom-of-the-line models and brands by a greater percentage than more expensive models and brands. The corollary observation is that the costs of such standards fall with disproportionate weight on lower-income consumers (13). For example, consider the CPSC's proposal that all power lawn mowers be equipped with a device which prevents mowers from being operated in potentially dangerous positions. There is no dispute that the new device would raise the cost of power mowers, although estimates differ. The largest percentage increases would be at the lower end of the mower price range, (e.g., walk-behind mowers compared to riding mowers). So the claim has been made that the costs of the standard would "be borne by those individuals least able to afford them (21, p. 62)". In addition, one could hold that lower-income consumers would prefer that less safe but less expensive models not be removed from the market.

These arguments echo the points made with regard to automobile safety standards, namely, that the costs of safety policies are differentially distributed according to income. Other safety policies reveal additional bases for distributional effects. One such example concerns flammability standards for furniture. Reacting to the high number of upholstered furniture-related fires, the CPSC proposed the elimination of certain flammable combinations of fabric, filling materials, and construction. To understand the distributional effects of this standard, it is important to know that over half of the injuries and deaths in upholstered furniture fires can be directly traced to ignition by cigarettes. Consequently, the benefits and costs of the furniture flammability standard depend on whether a person is a smoker. Whereas smokers would receive fire protection (which they might or might not want), non-smokers would pay more for their furniture in exchange for largely unnecessary fire protection (7). Unlike the cases of automobiles and food in which the safety benefits are fairly evenly distributed, flammability standards exemplify the situation in which the most important distributional effects concern the benefits rather than the costs of the policy.

A final instance in which a CPSC safety policy has had significant distributional effects pertains to the banning of urea formaldehyde foam insulation. The Commission found that this form of insulation can cause eye irritation, respiratory problems, headaches, nausea, and possibly cancer. Banning this insulation would prevent these problems among prospective purchasers of insulation. In accomplishing this goal, however, owners of homes with urea formaldehyde insulation already in place will likely experience a decline in the value of their property. These owners have requested special subsidies to enable them to reinsulate their homes and thereby mitigate this distribution-

al outcome. To date, these requests have not been granted. Thus, the case of urea formaldehyde foam represents the situation in which bans (or standards) reduce the value of goods currently owned by some consumers. Such policies benefit prospective (for example, younger) consumers to the detriment of consumers who already own and cannot readily replace a consumer good.

Higher Prices Versus Higher Taxes

A final observation is necessary regarding the distributional impacts of policies designed to promote safety. There are many alternatives for reducing traffic-related injuries and death. Some of these alternatives entail higher consumer prices (e.g., safety features on cars) while others entail higher taxes (e.g., higher federal taxes to finance programs to set auto safety standards and to create and deliver auto safety education programs).

The choice among alternative methods of reducing injuries and deaths must consider their relative efficiency, but their equity can be considered as well. Pursuing the example of safer cars versus safety education programs, higher car prices are likely to be regressive in their impact and higher federal taxes are likely to be progressive. Similarly, stricter drug safety laws and improved medical care (whether preventative, emergency, or curative) are policy alternatives. Higher prices for drugs are likely to be regressively distributed, while higher taxes for improved medical treatment (e.g., Medicare or Medicaid) are more progressively distributed.

Policies which raise consumer prices do not always distribute costs regressively (e.g., safety standards for yachts). Nor do policies which raise taxes always distribute costs progressively (e.g., policies which raise sales taxes). Nevertheless, the possibility exists that the choice between a policy which raises consumer prices and a policy which raises taxes may have substantial distributional consequences. And to complicate matters further, a decision based on preferred distributional consequences may conflict with a decision based on economic common sense (e.g., improving highway features is less cost-effective than mandating air bags).

PERFORMANCE

Whereas safety standards are meant to reduce the risk of physical injury and death, product performance standards are designed to guarantee consumers a given level of product quality or performance. The distributional impacts of three types of performance standards will be discussed here: (1) energy efficiency standards for automobiles and appliances; (2) efficacy requirements for pharmaceuticals; and (3) licensing of occupations.

Energy Efficiency Standards

The Motor Vehicle Information and Cost Savings Act of 1972 requires that the automobile industry double the fuel economy of its fleet of new passen-

ger cars between 1974 and 1984. Specific miles-per-gallon targets are set for each model year. Similarly, the National Energy Conservation Policy Act requires the Department of Energy to set energy efficiency standards for household appliances. These appliance standards have not yet been implemented at the national level, but several states have enacted energy efficiency standards for various appliances (notably California, New York, and Minnesota).

From the point of view of someone interested in distributional effects, all these energy efficiency standards have something in common -- the rate at which energy savings compensate for higher initial purchase prices depends on how intensively the product is used. For example, a report by the Regulatory Analysis Review Group (38) states that a Wisconsin consumer who purchases a medium-sized room air conditioner meeting the proposed 1986 standards would have to wait almost 17 years before the investment in energy efficiency paid for itself. In contrast, a person living in Texas, where the need for air conditioning is greater, would have to wait less than three years for the investment to pay off. What is a forced but reasonable investment for the Texan is a burdensome tax to the Wisconsin consumer.

The individual characteristics which are related to the intensity of a product's use vary somewhat from product to product. Traveling salesmen benefit from fuel economy standards more than retired widows. Large families soil more clothes than small families, so they would benefit more from energy efficiency standards on washing machines. Thus, the distributional impacts of energy efficiency standards will depend on the product involved. The important point is that these distributional impacts need to be analyzed in terms of characteristics such as occupation, region of the country, family size, and age, not just income.

Drug Efficacy

Although passed in the wake of the thalidomide tragedy, the 1962 amendments to the Food, Drug, and Cosmetic Act were designed to prevent the marketing of ineffective drugs. Unsafe drugs were already prohibited by earlier legislation. The 1962 amendments have been criticized as being unnecessary and costly (33, 45), but no attention has been focused on their distributional impacts.

The amendments can be conceptualized as a form of information -- the efficacy of a drug is certified, thereby eliminating the need to determine efficacy from other sources of information (including personal experience). Thus conceptualized, the benefits of the amendments will go disproportionately to those consumers who are least likely to seek, understand, and use alternative sources of information. There is abundant research which shows that low educational attainment, low income, and minority racial status are associated with low information use (2, 9, 23).

The costs of the 1962 amendments may also be differentially borne. Reduced pharmaceutical innovation and delay in the marketing of new drugs have been attributed to the added testing required by the amendments. If this attribution is warranted, the costs of the amendments would be distributed according to those characteristics which determine the need for new drugs -- primarily age, present health status, and genetic predisposition to certain diseases.

Occupational Licensing

Hundreds of different occupations are subject to state licensing -- not just attorneys, accountants, physicians and teachers, but auctioneers, midwives, milk samplers and weather modifiers as well. Given the difficulty of judging the quality of services offered to the consumer, the purpose of occupational licensing is to insure the quality of services rendered. At the same time that it insures quality, occupational licensing also raises prices by restricting the supply of services. High prices may in turn lead consumers to substitute lower quality services (e.g., do-it-yourself services) for the expensive services of licensed practitioners. An exploratory study by Carroll and Gaston (5) suggests that this shift is so considerable that restrictive licensing may be associated with a lower level of service quality for consumers taken as a whole. In other words, restrictive licensing increases the quality of services for those consumers who employ licensed practitioners, but this increase in quality may be offset by the unavailability of services to other consumers. For example, if licensing of electricians forces prices up or makes electricians unavailable in rural areas, do-it-yourselfers may end up electrocuting themselves. Thus, the costs of occupational licensing may be distributed according to income as well as geographical location.

CONCLUSIONS

This paper demonstrates instances in which consumer safety and performance policies can have differential impacts on consumers, but two quite different situations can be distinguished. In one situation, all consumers are net beneficiaries from a policy, but the net benefits to some consumers are greater than those for other consumers (e.g. banning carcinogens). In a second situation, some consumers are net winners at the expense of other consumers who are net losers (e.g. occupational licensing).

The political ramifications of these two situations may be vastly different. The first situation poses the threat of consumer inaction due to the "free rider" mentality in which the relatively light beneficiaries expect the relatively heavy beneficiaries to bear the costs of political lobbying. The second situation causes the possibility of conflict and confrontation among consumer groups, a situation in which pro-consumer legislation is easily defeated (45). Such conflicts might be resolved by logrolling among groups representing different types of

consumers (e.g., different geographical regions or age groups). However, the fact that the benefits and costs of several safety policies may not be distributed according to the same consumer characteristics, reduces the chances of trading political support across issues. In any event, the differential impacts of consumer safety policies may constitute an important barrier to the mobilization of consumer pressure in the legislative and regulatory arenas.

Regardless of whether distributional effects reduce the involvement of consumer groups in the formulation of safety policies, public policy makers may wish to consider these distributional effects (among businesses as well as among consumers) so that consumer policy is congruent with general social policy. If policy makers display a willingness to consider distributional impacts, consumer researchers will be faced with a new challenge -- to express distributional effects in more precise and quantitative terms than has so far been the case.

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PRESIDENT KENNEDY'S CONSUMER MESSAGE
TO CONGRESS: A TWENTY YEAR VIEW

Elizabeth Dolan and Joel Rudd

ABSTRACT

President Kennedy's 1962 Consumer Message to Congress, in addition to outlining the "Consumer Bill of Rights", provides a consumer problems agenda. The present paper uses Kennedy's consumer problems agenda to develop a framework for analyzing consumer protection legislation and regulatory actions over the last 20 years.

More than twenty years have elapsed since President John F. Kennedy sent his Consumer Message to Congress. This Consumer Message, the first of its kind, has been identified as a key event in chronologies of the consumer movement [e.g., 3, 5, 8] and has been frequently cited by consumer researchers and policy makers to justify a line of research or a proposed policy change [e.g., 4]. Indeed, many statutes and regulatory actions were initiated by this Message.

Kennedy's Message has been remembered primarily for what has become known as the "Consumer Bill of Rights": the right to be safe, to be informed, to choose, and to be heard [1, 2, 9]. However, an examination of the Message reveals that the consumer rights passage plays a relatively small role--the thrust of the Message is programmatic rather than polemic. Kennedy identifies a number of consumer problems which were of growing concern to both citizens and politicians. We can group these concerns into a consumer problems agenda:

- (1) Food and drug safety
- (2) Transportation safety
- (3) Financial and credit protection
- (4) Information and representation at the federal level
- (5) Vigilance against monopolies
- (6) Effective regulation in other areas

Although the Kennedy Message traditionally marks the beginning of the third era of consumerism, interest in consumer problems had been growing for several years [5]. The complacency which had characterized the 1950's was dissolving. Median income was rising and the level of living increased steadily throughout the 1950's; continued economic growth was predicted for the 1960's. People felt secure about their economic future and were beginning to become concerned about marketplace abuses. Kennedy conceptualized this new attitude in his "new Camelot": the concern about better social and marketplace conditions.

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The political climate was becoming more amenable to consumer protection. Liberals in Congress were gaining power on key committees and, in 1964, a very liberal Congress was elected [11]. The consumer problems agenda outlined in the Kennedy Message became part of the political agenda.

Kennedy asked in his Message that a number of different reform measures be enacted through either legislation or regulation. Only a few were dealt with quickly. Many of his recommendations became law only after years of debate and effort.

The purpose of this paper is to examine what has been accomplished on Kennedy's consumer problems agenda in the 20 years since his Message. We use the consumer problems agenda set forth by Kennedy not because we believe him to be a consumer visionary, but because his Message set such a broad agenda for consumer activists. The Message served more as a standard for the neophyte consumer advocates in Congress and in the private sector than as an immediate catalyst for action. We will identify those federal legislative and regulatory actions which are directly related to Kennedy's agenda recommendations and those actions which we consider outgrowths of his recommendations. Only federal consumer protection regulation and legislation relevant to Kennedy's agenda are considered (Table 1). We do not attempt to identify every federal regulatory and legislative action having an impact on consumers. Most conspicuously absent are many energy and environmental problems and resulting actions which were unforeseen by Kennedy. While Kennedy's Message did mention air pollution in connection with transportation safety and health, it said little else about the environment. In addition, since Kennedy's Message dealt with what the federal government (Congress and the various regulatory agencies) could do about those consumer problems in his agenda, actions taken at the state or local level in the last 20 years are not reviewed in this paper.

Table 1 provides an overview of the consumer legislation and regulation discussed in the remainder of the paper. The table is organized to provide a summary of Kennedy's consumer problems agenda, his recommended solutions, legislative and regulatory actions related to those recommendations, and actions which follow the spirit of or expand upon those recommendations.

FOOD AND DRUG SAFETY

Kennedy prefaced his recommendations for strengthening programs in the area of food and drug safety with this statement: "Thousands of common household items now available to consumers contain potentially harmful substances. Hundreds of new

of new uses for such products as food additives, food colorings, and pesticides are found every year, adding to new potential hazards... (N)ew drugs are being placed on the market with no requirement that there be either advance proof that they will be effective in treating the diseases and conditions for which they are recommended or the prompt reporting of adverse reactions" [6, pp. 3, 6]. The main thrust of Kennedy's recommendations was to substantially increase the staff and funding available to both the Food and Drug Administration and the Department of Agriculture to enable these agencies to provide better levels of consumer protection through increased inspection and pre-market testing.

The impetus for the rapid enactment of the recommendations for drug safety and efficacy came more from the thalidomide scandal than from Kennedy's suggestions [5]. The pharmaceutical industry could not oppose the stricter legislation without appearing to endorse deformed babies. While Kennedy's call for a mechanism which would require the removal of unsafe and ineffective drugs has not been directly acted upon, the concept of removal of unsafe products from the market has been applied to toys and food additives (1966 Child Protection Act, et seq.). Product safety and health protection were further expanded by Congress in the late 1960's and throughout the 1970's (1967 Flammable Fabrics Act Amendments, et seq.). Congressional concern about hazardous products reached its zenith in 1972 with the creation of the Consumer Product Safety Commission.

TRANSPORTATION SAFETY AND HEALTH

Kennedy cited the increased use of both highways and airways by Americans as the basis for his recommendations concerning transportation safety. According to Kennedy's Message, the Federal Aviation Administration was then in the process of redesigning the air traffic control system to enhance safety and efficiency for future air traffic. Several other agencies also were working to strengthen highway safety standards. Federal agencies, as well as the automobile industry, were called upon in the Message to jointly review "those changes in automobile design and equipment which will help reduce the unconscionable toll of human life on the highways and the pollution of the air we breath" [6, p. 3].

When the automobile industry and federal agencies made no progress in developing design and air pollution standards, Congress began to pass legislation to accomplish these goals, although Ralph Nader's Unsafe At Any Speed [10], not Kennedy's Message, is often viewed as the impetus. Once the onerous task of overcoming the objections of a powerful industry was surmounted, the view of consumers as potential victims of the products they own was easily accepted. The subsequent legislation not only dealt air pollution and safety design, but also with providing information to consumers concerning automobiles (1963 Clean Air Act, et seq.). Later Congressional actions

expanded transportation safety standards to vehicles other than automobiles and provided for recall of defective automobiles (1970 Traffic and Motor Vehicle Safety Amendments, et seq.).

FINANCIAL AND CREDIT PROTECTION

Protection for consumers' finances is a third item covered in the Consumer Message. Kennedy reported that legislation recently had been passed to strengthen the insurance program of the Federal Savings and Loan Insurance Corporation and that the Securities and Exchange Commission had undertaken an investigation of the securities market which would provide the basis for later regulation and legislation. Increased enforcement of federal fraud statutes by the Postmaster General and the Justice Department was also reported. Finally, Kennedy urged that "truth-in-lending" legislation be passed which would require creditors to disclose to borrowers, in advance, the actual amount and rate of payment for credit.

It was several years before truth-in-lending became law through the herculean efforts of Senator Douglass (1968 Consumer Credit Protection Act). The format was essentially what Kennedy had recommended, i.e., a disclosure law. Once truth-in-lending became law, Congress was quick to recognize other abuses related to the consumer credit industry and in the succeeding years passed several laws to further assist consumers in their credit transactions (1970 Credit Card Act, et seq.). Additional legislation and rules provide consumers with a broad variety of protections in their financial dealings (1970 Share Insurance Amendments to the Federal Credit Union Act, et seq.).

INFORMATION AND REPRESENTATION AT THE FEDERAL LEVEL

Kennedy's Message contained a call for federal agencies to develop and make available information of use to consumers. In those cases where such information was already a part of an agency's routine research activities, an effort to make the information more readily available to consumers was requested. In addition, the Message highlighted the efforts of the executive branch to ensure that the consumer interest was considered in governmental decision making by creating a liaison between consumers and federal agencies. Specifically, the Message reported directives mandating the creation of a Consumers' Advisory Council and the appointment of a special assistant for consumer affairs in each federal agency where activities bear significantly on consumer welfare. Finally, a directive provided for a pilot program to disseminate consumer publications in post offices.

Kennedy's Consumers' Advisory Council has evolved into the Office of Consumer Affairs, now a part of the Department of Health and Human Services (1964 Executive Order 11136, Establishing the President's Committee on Consumer Interests and

the Consumer Advisory Council, et seq.). Efforts in the 1970's to create a cabinet level Department of Consumer Affairs failed.

VIGILANCE AGAINST MONOPOLIES

In his Message, Kennedy recommended that steps be taken to minimize the negative effects of anticompetitive practices by business. First, it was recommended that the Federal Trade Commission be empowered to issue temporary cease-and-desist orders against unfair competitive practices while a case is pending before the Commission. Second, firms would be required to give advance notice to the Department of Justice concerning their intentions to merge, enabling the department to advise the firms if the merger would be challenged. Over a decade passed before these recommendations were implemented (1973 Trans-Alaska Pipeline Authorization and Federal Trade Commission Improvements Act, et seq.; 1974 Anti-Trust Procedures and Penalties Act, et seq.).

EFFECTIVE REGULATION IN OTHER AREAS

Kennedy reported on the activities of several federal regulatory agencies and recommended increased funding and staffing to provide more effective consumer protection. Many of the actions Kennedy called for under this agenda item have been initiated (1978 CAB Airline Overbooking Rule; 1978-1981 CAB Charter Flight Rules, et seq.; 1962 All-Channel Receiver Act, et seq.; 1978 Public Utilities Regulation Policy Act, et seq.; 1963 FTC Sleeping Bag Advertising and Labeling Rule, et seq.; 1980 Household Goods Transportation Act). In addition, the Message reported investigations underway into "misleading, fraudulent, or unhelpful" packaging and labeling practices which often seem "designed to conceal rather than reveal the true contents of the package" [6, p. 10]. Kennedy's proposals to improve packaging and labeling, dubbed "truth-in-packaging", were incorporated in the 1966 Fair Packaging and Labeling Act.

The Truth-in-Packing concept was greatly expanded in the 20 years after Kennedy's Message (1965 Federal Cigarette Labeling and Advertising Act, et seq.). Recent actions affecting regulation have tended to delimit regulatory authority, often in the name of increased effectiveness (1980 Regulatory Reform Act, et seq.).

CONCLUSION

Kennedy's Consumer Message provided an invaluable service to consumer advocates not only by proposing a "Consumer Bill of Rights" but also by developing an agenda of consumer problems. His consumer problems agenda and proposed remedies have, for 20 years, provided a significant point of reference for consumer protection legislation and regulation. Many subsequent legislative and regulatory actions closely resembled Kennedy's recommendations, but were often enacted only after considerable debate (e.g., 1968 Consumer Credit Protection Act). Others saw fruition in a form quite different from that envisioned by Kennedy, but necessary given the tenor of the times (e.g., 1966 National Traffic and Motor Vehicle Safety Act).

Mayer [7] has suggested that during the 1970's the idea of what constitutes a consumer problem has widened. This view is supported by the large number of legislative and regulatory actions which are extensions of Kennedy's original recommendations. The focus of consumer concern has broadened and, in response, actions taken in the name of the consumer have multiplied.

The 20 year perspective provided by this paper helps illuminate what has, and has not, been accomplished since Kennedy's landmark Consumer Message. Much of what has been achieved in the name of consumer protection used Kennedy's Message and the agenda it contained as a springboard. The legislative and regulatory actions provide a useful record of the impact of Kennedy's Consumer Message and the spirit of the third era of consumerism.

TABLE 1
Selected Consumer Legislation and Regulation 1962-1982

| <u>Kennedy's Recommendations</u> | <u>Recommendations Acted Upon</u> | <u>Extensions of Recommendations</u> |
|---|--|--|
| <u>I. Food and Drug Safety</u> | | |
| Increased inspection in food processing, meat packing, and drug manufacturing | 1967 Wholesome Meat Act 1967 Clinical Laboratories Licensing Amendment 1968 Poultry Inspection Act 1970 Egg Products Inspection Act | 1962 FDA Current Good Drug Manufacturing Practice Rule 1969 FDA Current Good Food Manufacturing Practice Rule |
| Unsafe, ineffective drugs to be removed | | 1966 Child Protection Act (to remove unsafe toys) 1969 Child Protection and Toy Safety Act 1971 Lead-Based Paint Poisoning Prevention Act (to remove lead-based paint) |

Kennedy's Recommendations

Recommendations Acted Upon

Extensions of Recommendations

Drugs and devices to be tested for safety and effectiveness prior to marketing

1962 Kefauver-Harris Drug Amendment
1976 Medical Device Amendments

1974 Lead-Based Paint Poisoning Prevention Act Amendments
1978 USDA Sodium Nitrite in Bacon Rule
FDA Rules Removing Unsafe Food Additives:
1970 Cyclamates
1977 Saccharin
(1977 Saccharin Study and Labeling Act, to delay removal)
1977 Acrylonitrile Bottles
1979 Diethylstilbestrol (DES), with USDA
1980 Liquid Protein
1977 FTC Hearing Aid Rule (to require hearing test prior to purchase)
1978 FDA Good Manufacturing Practices for Medical Devices Rule
1976 FDA Cosmetic Labeling Rule

Cosmetics to be tested for safety prior to marketing

Regulate pesticides

1972 Federal Environmental Pesticide Control Act

Assignment of generic names to drugs

1962 Kefauver-Harris Drug Amendment

1972 Drug Listing Act

Control barbiturate and amphetamine distribution

1965 Drug Abuse Control Act
1966 Narcotic Addict Rehabilitation Act
1970 Controlled Substances Act
1970 Control Substances Import and Export Act
1972 Drug Abuse Prevention, Treatment and Rehabilitation Act

FTC may require drug company advertising to physicians to disclose safety and efficacy

Additional Health and Safety Related Actions:

1967 Flammable Fabrics Act Amendments
1967 National Commission on Product Safety
1968 Natural Gas Pipeline Safety Act
1968 Radiation Health and Safety Act
1969 Fire Research and Safety Act
1969 FTC Quick Freeze Aerosol Spray Products for Frosting Cocktail Glasses Disclosure Rule
1970 Poison Prevention Packaging Act
1970 Occupational Health and Safety Act
1972 Noise Control Act
1972 Consumer Product Safety Act
1972 Youth Camp Safety Investigation Act
1972 Federal Water Pollution Control Amendments
1974 Safe Drinking Water Act
1976 Solid Waste Disposal Act
1976 National Consumer Health Information and Health Promotion Act

Kennedy's Recommendations

Recommendations Acted Upon

Extensions of Recommendations

1976 Consumer Product Safety Commission Improvements Act
1977 FDA Chlorofluorocarbon Labeling Rule
1977 Toxic Substances Control Act
1978 Home Insulation Safety Act

II. Transportation Safety and Health

HEW, Commerce, and auto industry to review design changes aimed at increased safety and decreased air pollution

1963 Clean Air Act
1965 Motor Vehicle Air Pollution Control Act
1966 National Traffic and Motor Vehicle Safety Act
1966 National Highway Act
1966 Clean Air Act Amendments
1967 Air Quality Control Act
1969 National Environmental Policy Act
1970 National Highway Traffic Safety Act
1971 NHTSA Occupant Protection in Interior Impact Rule
1974 Emergency Highway Energy Conservation Act
1977 NHTSA Bumper Standard
1977 NHTSA Occupant Crash Protection Rule
1977 NHTSA Passenger Automobile Average Fuel Economy Standards
1979 NHTSA Tire Identification Rule

FAA to design an improved air traffic control system

Additional Transportation Actions:

1970 Traffic and Motor Vehicle Safety Amendments
1971 Federal Boat Safety Act
1972 Motor Vehicle Information and Cost Savings Act
1974 Motor Vehicle and School Bus Safety Amendments
1975 Auto Recall Repair Act

III. Financial and Credit Protection

SEC investigation of securities industry to serve as basis for later legislation

1970 Securities Investor Protection Act
1970 Investment Company Amendments Act
1970 Investor Protection Amendments to Securities Exchange Act of 1934
1974 Commodity Futures Trading Commission Act

Truth-in-Lending

1968 Consumer Credit Protection Act
1969 FRB Regulation Z (Truth-in-Lending rules)

1968 Interstate Land Sales Full Disclosure Act
1979 Interstate Land Sales Full Disclosure Amendments

1970 Credit Card Act
1970 Fair Credit Reporting Act
1974 Fair Credit Billing Act
1974 Equal Credit Opportunity Act
1975 FRB Regulation B (Equal Credit Opportunity rules)
1976 Equal Credit Opportunity Act Amendments
1976 Federal Deposit Insurance Act
1976 FTC Holder-in-Due-Course Rule
1976 FRB Regulation AA (on formal consumer complaints to FRB)
1977 Fair Debt Collection Practices Act
1978 FRB/FDIC Consumer Fund Transfer Rule (checking account overdraft rules)

Kennedy's Recommendations

Recommendations Acted Upon

Extensions of Recommendations

Stepped-up enforcement of mail fraud statutes

1970 Mail Fraud Act
1971 Postal Reorganization Act
(mailing of unordered merchandise)
1977 Mail Fraud Solicitation Act

1980 Truth-in-Lending Simplification and Reform Act

Additional Financial Protection Actions:

1970 Share Insurance Amendments to the Federal Credit Union Act
1973 FTC Door-to-Door Sales Rule
1974 Real Estate Settlement Procedures Act
1974 HUD Mortgage Loan Disclosure Rule (Real Estate Settlement Procedures Act rules)
1974 Employee Retirement Income Security Act
1975 Federal Credit Union Amendments
1975 Consumer Goods Pricing Act (to eliminate fair trade laws)
1975 FTC Mail Order Rule
1976 Consumer Leasing Act
1976 Real Estate Settlement Procedures Act Amendments
1977 Federal Credit Union Act Amendments
1978 Electronic Fund Transfer Act
1978 National Consumer Cooperative Bank Act
1979 FRB Regulation E (Electronic Fund Transfer rules)
1979 Revised Bankruptcy Code
1980 Depository Institutions Deregulatory and Monetary Control Act

IV. Information and Representation at the Federal Level

Make current information more available to consumers (e.g., consumer price index, cooperative extension service, etc.)

1970 Executive Order 11566, Consumer Product Information (to disseminate government information of interest to consumers)

1966 Public Information Act
1974 Freedom of Information Act
1976 Government in the Sunshine Act

Council of Economic Advisors to create a Consumer's Advisory Council

1962 President's Consumer Message to Congress (to create Consumer's Advisory Council)
1964 Executive Order 11136, Establishing the President's Committee on Consumer Interests and the Consumer Advisory Council
1967 Executive Order 11349, Amending Executive Order 11136 (administrative amendment)
1971 Executive Order 11583, Office of Consumer Affairs (to replace the President's Committee on Consumer Interests and the Consumer Advisory Council)
1973 Executive Order 11702, Relative to the Executive Office of the President (to transfer Office of Consumer Affairs to HEW; Director retains status of Special Assistant to the President)

Kennedy's Recommendations

Each federal agency to designate a special assistant for consumer affairs

Postmaster General to begin a pilot program for the dissemination of consumer information in post offices

V. Vigilance Against Monopolies

FTC to be given power to issue cease and desist orders

Companies must give notice of mergers in advance to Justice

VI. Effective Regulation

Increased funding and staffing for:

CAB, airline overbooking

FCC, television program selection and promotion of educational television

FPC, regulation of utility rates

FTC, deceptive trade practices and false advertising

Recommendations Acted Upon

1979 Executive Order 12160 Enhancement and Coordination of Federal Consumer Programs

1973 Trans-Alaska Pipeline Authorization and Federal Trade Commission Improvements Act
1975 Magnuson-Moss Warranty and Federal Trade Commission Improvements Act

1974 Anti-Trust Procedures and Penalties Act
1976 Hart-Scott-Rodino Anti-Trust Improvement Act

1978 CAB Airline Overbooking Rule

1962 All-Channel Receiver Act
1967 Public Broadcasting Act

1978 Public Utilities Regulation Policy Act
1978 Natural Gas Policy Act

1963 FTC Sleeping Bag Advertising and Labeling Rule
1965 FTC Previously Used Lubricating Oil Advertising and Labeling Rule
1969 FTC Games of Chance Rules
1970 FTC Extension Ladders Advertising and Labeling Rule
1971 FTC Advertising Substantiation Program
1971 FTC Availability of Advertised Specials Rule
1972 FTC Care Labeling of Textile Wearing Apparel Rule
1975 Magnuson-Moss Warranty and Federal Trade Commission Improvements Act
1976 FTC Pre-Sale Written Warranty Rule (Magnuson-Moss Warranty and Federal Trade Commission Improvements Act Rules)
1978 FTC Franchise and Business Opportunities Rule
1978 FTC Advertising of Ophthalmic Goods Rule
1978 FTC Vocational Schools Rule

Extensions of Recommendations

1973-1981 CAB Charter Flight Rules
1977 Air Carrier Baggage Liability Rule
1977 Timely Notification of Baggage Loss Rule
1981 Public Broadcasting Act Amendments (to allow a pilot advertising program on Public Broadcasting Service)

| <u>Kennedy's Recommendations</u> | <u>Recommendations Acted Upon</u> | <u>Extensions of Recommendations</u> |
|----------------------------------|---|--|
| ICC, household movers | 1980 Household Goods Transportation Act | |
| Truth-in-Packaging | 1966 Fair Packaging and Labeling Act | 1965 Federal Cigarette Labeling and Advertising Act 1966 Public Health Cigarette Smoking Act 1970 Cigarette Labeling and Advertising Act 1971 FTC Incandescent Lamp Disclosure Rule 1972 FTC Posting of Octane Numbers at Gasoline Pumps Rule 1973 Little Cigar Act 1973 FDA Nutrition Labeling Rule 1978 FDA Vitamin and Mineral Labeling Rule 1979 FDA Patient Package Insert Rule 1980 BATF Mail-Order Alcohol Labeling Rule |
| | | <u>Other Actions Affecting Regulation:</u> 1980 Regulatory Reform Act 1980 Federal Trade Commission Improvement Act |

List of Table Abbreviations:

| | |
|----------|---|
| BATF | Bureau of Alcohol, Tobacco and Firearms |
| CAB | Civil Aeronautics Board |
| Commerce | U.S. Department of Commerce |
| FAA | Federal Aviation Administration |
| FCC | Federal Communications Commission |
| FDA | Food and Drug Administration |
| FDIC | Federal Deposit Insurance Corporation |
| FPC | Federal Power Commission |
| FRB | Federal Reserve Board |
| FTC | Federal Trade Commission |
| HEW | U.S. Department of Health, Education and Welfare |
| HUD | U.S. Department of Housing and Urban Development |
| ICC | Interstate Commerce Commission |
| Justice | U.S. Department of Justice |
| NHTSA | National Highway Transportation Safety Administration |
| SEC | Securities and Exchange Commission |
| USDA | U.S. Department of Agriculture |

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THE PRE-RETIREMENT PENSION INFORMATION OF MARRIED WOMEN AND
IMPLICATIONS FOR CONSUMER EDUCATION

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ABSTRACT

The focus of this paper is to examine the need for consumer education in the area of retirement planning among employed, married women. To do so, the accuracy of pre-retirement pension information is studied. A multivariate analysis of factors determining pension information is employed, adjusting for possible sample selection bias. Results show that women who stand to gain the most through educational efforts are those with lower incomes, and education, no private pension coverage, and children under age 18.

INTRODUCTION

There are basically two research questions which motivate this work. The first involves behavioral assumptions employed by the social scientist, and specifically those made by economists and others studying retirement planning. In this context individuals are typically assumed to make retirement plans based on their perfect, (or at least highly correlated) knowledge of their future pension receipt. If such an hypothesis is valid, one would expect that people near retirement would be able to predict with some accuracy the amount of their benefit upon retirement. If such an assumption is not valid and individuals indeed have little knowledge of pension parameters, the interpretation of results based on such data should be made with great care.

The second question involves a policy question of whether there exists a need for consumer education in the area of retirement planning, and if so, where those efforts should be directed in order to be the most effective.

The focus of this paper will be on the latter question. Specifically, the present study examines perceptions of married women about what their future social security benefits will be given their current circumstances in some base period. Social security benefits are selected for analysis primarily for two reasons. First, data are available and can be used to impute actual benefit amounts for comparison with the respondent's expected benefits. Secondly, social security benefits represent the pension provision that most workers are covered by in the United States.

¹Assistant Professor of Family Economics. Although many people have provided useful comments throughout the course of this study, special thanks are due Jennifer Gerner, Olivia Mitchell, Ronald Ehrenberg, Keith Bryant, Ramona Heck, and Cathleen Zick. Of course, final responsibility for any remaining errors is that of the author.

DATA

The data set employed in this analysis is the Social Security Administration's Longitudinal Retirement History Study (LRHS) matched with summary data on respondent's earnings subject to Social Security taxation since 1937. The sample is a 6 year cohort between the ages of 58-63 during the first interview wave in 1969. The sample was re-interviewed every second year through (including) 1979.

For the present analysis, 1971 is designated the base year as it was the first survey year respondents were asked extensive expectation and asset questions. It is necessary that data for these variables be obtained during the same survey year as expectations in the base period (t_0) are presumably predicated on household asset levels and circumstances in that same period.

SAMPLE

The sample for this analysis consists of married women 59 years of age or older who were employed in 1971². The primary reason such an age range was selected, is that the closer the respondent is in the base period to her planned retirement, the easier it is to compute benefits. It was also necessary to choose women who were currently employed as a subsequent objective of this work was to examine actual retirement behavior. About 34 percent of all married women in this sample were employed, so of course, inferences drawn are limited to this population.

COMPARISON OF ACTUAL VERSUS EXPECTED
SOCIAL SECURITY BENEFITS

The comparison between actual and expected social security benefits may be made in a number of ways. However, this research focuses on the comparison of respondents expected pension amount in period t and what we impute they are entitled to given their past earnings history and expected future work patterns in period t . By examining this relationship we are able to abstract from future unforeseen events and focus only on differences attributable to imperfections in information. Expectations of retirement benefits are taken directly from the 1971 survey. In order to impute actual benefits, 1971 program rules are utilized assuming that is the information women had available to them in the same year. It is assumed that pension benefit acceptance and retirement occur concurrent-

²Since husbands were considered primary respondents, their age range was 60-65 in 1971. However, there were no restrictions with respect to wife's age and thus they range, in this sample, from 59-71.

ly. Thus, earnings are imputed for the time period between 1971 and the respondents' planned retirement date in order to obtain an estimate of their Average Monthly Earnings.³ It was at this stage in the analysis where restriction of the sample to women 59 years of age or older was most useful. These women were closer to their expected retirement date, than the unrestricted sample and thus fewer future earnings years had to be estimated for them. The benefit imputation thus represents how much one should expect given existing program rules and recipient characteristics.⁴

In order to make a preliminary assessment of the need for consumer education in the area of retirement planning i.e., to examine the accuracy of pension benefit information, a calculation of the simple correlation between actual and imputed annual benefits is made. This initial investigation reveals a remarkably low correlation (.13) and indicates the need for not only a closer, *ceteris paribus*, look at the data, but also identification of parameters which explain the information imperfections.

THEORETICAL MODEL OF PENSION INFORMATION ACCRUAL

It is hypothesized that information gathering will explain discrepancies between actual (imputed) social security benefits and expected benefit amounts i.e., pension information accuracy. Assuming that households engage in three uses of their time, market work, home work, and information gathering, it is possible to examine not only how time is allocated to search but to identify the opportunity costs of search. The probability one will seek pension information is a function of both

- 1) expected future benefit amounts, and
- 2) the cost of obtaining information.

Specifically, the higher the present discounted value of benefits one expects, the more likely one is to engage in information, assuming information is a normal good. Directly, the cost of obtaining pension information is a function of the value of marginal productivity in the home and market wage rate, as each of these represent the opportunity cost of engaging in the information search process. In equilibrium, individuals will equate on the margin their market wage, shadow wage, and marginal search costs. However, not only are there time costs associated with information accrual, there are also other direct and indirect factors which affect the cost of information accrual. Other factors include those information sources which are relatively less expensive to explore and whose access will induce more information being sought, *ceteris paribus*.

³ A special thanks is due Olivia Mitchell for helping develop the algorithm used in this analysis and sharing similar work in progress by her and Gary Fields. Of course final responsibility for accuracy remains that of the author.

⁴ Exact specification of the benefit algorithm is available from the author on request.

Generally, the probability one engages in search ($Pr(s)$)

$$Pr(S) = s((E(B)(1+r)^{-t}), T_e) \quad (1)$$

is a function of the expected present discounted value of future benefits ($E(B)(1+r)^{-t}$) and information accrual costs (T_e). Further assume that the more information acquired (holding the per hour quality of information constant) the more accurate will be one's pension estimate. In this research it is therefore hypothesized that the difference between respondents' expected benefit amount and their actual benefit entitlement can be explained by a set of variables which affect both the costs of information accrual and the expected benefit amount.

MODEL

In order to investigate the differential between expected and actual pension amounts, a multivariate analysis is carried out to examine factors hypothesized to affect the probability one engages in information gathering. According to the model developed previously, the parameterization of information gathering should include not only direct measures of costs and benefits (such as direct search costs and expected benefit amounts) but also measures of variables which might indirectly affect these costs and benefits. Such indirect factors are particularly important on the cost side, since different women may face different constraints or have different advantages. For example, women whose husbands currently receive social security benefits have access to pension information (via their spouse) at a lower marginal cost than would women whose husbands are not currently receiving benefits. Thus, variables hypothesized to affect pension information can be classified as either directly or indirectly affecting the costs or expected benefit associated with pension information gathering. Pension information for this part of the analysis is measured as the absolute value of the difference between respondent's expected annual benefit amount (\hat{Y}), and to what in fact she is annually entitled (Y_a). In 1971 wives were asked how much they expected to receive from social security upon retirement. Their response constitutes, \hat{Y} , one component of the dependent variable. From this is then netted their actual imputed benefit (Y_a) which serves as the benchmark for comparison with the expected amount.

For simplicity a linear relationship between the dependent and explanatory variables is assumed leading to the following estimating equation

$$|\hat{Y} - Y_a| = \beta_0 + \beta_1 Y_a + \sum_{i=1}^n \beta_i P_i + \mu \quad (2)$$

where

P_i = remaining search parameters

What follows is a description and justification for inclusion of the remaining P_i search parameters reported in this article. These variables represent combinations of both continuous and dummy variables of family characteristics hypothesized to affect either costs or expected benefits associated with information gathering and thus information accuracy. The discussion of predicted relationships between the X's and $|\hat{Y} - Y_a|$ is cast in terms of

whether exhibition of trait X: results in better (thus narrowing the gap), or poorer (thus widening the gap) benefit information. For instance, if one expects that persons who exhibit trait X: are likely to have accrued more information, the predicted sign on the coefficient X: should be negative, implying a "closing" of the gap between actual and expected benefit values.

Wife's current age is expected to related positively with accuracy of benefit expectations, because as women near retirement age they will be more likely to seek out information with respect to benefit levels. Age may also capture the effects of information obtained from peers who are in the process of retiring, an information source obtained at a relatively lower marginal cost. Further, the older one gets, the more certain are work patterns from which benefit expectations are formulated. This is important not only to the accuracy of respondent's expectations, but how accurately Y_a is calculated. The probability of measurement error in benefit imputation will be reduced as current age increases, *ceteris paribus*.

Husband's age in 1971 is hypothesized to be positively related to accuracy of pension estimates. Older husbands are more likely to have gained pension information with their wives. Further, the older a woman's husband, the greater the probability of his death, an event which usually results in a considerable loss in household human and non-human resources. The greater the likelihood of husband's death, the more likely women would be to begin information gathering in order to minimize the impact of that loss.

Assuming that households pool not only income but information, all family member's experiences with institutional transfer systems will be shared with one another and thus decrease their marginal cost to search. Therefore a woman will not only gain information about her own social security benefit by her prior experiences but will also benefit by experiences of her husband. Such sharing is expected to enhance one's information with respect to future benefit amounts and their effects will be captured by two dummy variables. The first takes the value of 1 (one) if husband currently receives social security and the second takes the value of 1 (one) if wife expects to receive other (non-social security) pension benefits.

The effect of education may be twofold. First, it has been shown that education improves not only productivity in the market, but also improves productivity in the home as well (11, p.17). One essential input to home production is management of resources. Thus, if one's managerial capabilities are enhanced by education, the family management literature suggests that by definition one's planning and implementing skills will improve (3, p.53). Applying these principles then to pension expectations, one would predict that women with higher education would be more adept at assimilating information and would know with greater accuracy what in fact their pension benefits will be. Secondly, given the intricacies of social

security program rules, greater education may enable one to better understand how benefits are formulated; both effects which could potentially reduce the time cost associated with information gathering.

Household income is defined as the sum of all sources of income received by the family in the last year. It includes wages, husband's pensions (if any), and other cash transfers. Given wife's wages are included in this measure, implying the existence of both an income and substitution effect, it is not possible to make an a priori sign prediction on the effect.

The predicted effect of children under 18 in the household is ambiguous. The presence of children increases the likelihood the household benefit entitlement will be greater since dependent children receive $\frac{1}{2}$ of either their mother's or father's benefit, whichever is greater. Further, since in 1971 such a benefit continued to be paid to children who attend college (until age 23) the potential increased expected benefit amount may be substantial. On the other hand, the cost of engaging in search increases as child care expenditures must be considered. Further, theoretically child care costs should also be netted from the measure of wife's market wage rate, but were not as no such measure was available. Assuming child care costs are variable costs associated with market work, incurring these costs would result in one engaging in more search as substitution out of work time and into search is relatively less expensive.

In the time use scenario, where individuals engage in household production, market work and search, it was established that in equilibrium a woman would equate her shadow wage, market wage and marginal gain in utility from search. Families with children however, may incur additional expenses while engaging in search as child care services must be purchased. Such expenses may be incurred for services ranging from baby sitting of the prepubescent to chauffeuring of a young teen to a sport or other social activity. As such the likelihood of engaging in pension search would be diminished, *ceteris paribus*, and less time would be spent engaging in search. Recalling then Equation (1) which implies that the probability of engaging in search is a function of both expected pension amount and search costs, two effects are observed. First, current search costs increase with the presence of dependents thus inducing women to gather less pension information while simultaneously expected benefit amounts are increasing inducing women to gather more information. The net effect will depend then on the relative weight of each effect.

PROCEDURES

When wives were asked how much they expected to receive from social security in the form of retirement benefits they reported either a specific annual amount, zero (they expected to receive no benefits), no response, or don't know. Analysis of 1971 information reveals that among married working women in this sample about 38 percent were able to provide some non-zero expected amount, 23 percent

expected to receive no benefits, 38 percent didn't know whether they would receive benefits, and fewer than 1 percent refused to answer.

The fact that some women responded that they didn't know how much their benefit would be is cause for some concern when estimating the proposed model. Sample selection bias may be introduced if there are characteristics which determine both whether women know their benefit, and what they report the size of their benefit to be. Use of such a censored sample to estimate effects of various variables on the accuracy of benefits will yield biased estimates of their effects for the population as a whole. Therefore, a sample selection procedure proposed by James Heckman (1979) is utilized. In this instance a probit equation is run where the dependent variable is a dummy variable set equal to one if the respondent was able to offer some benefit estimate, zero being a legitimate response (zero otherwise) and regressed on a set of independent variables hypothesized to affect the probability one had any pension information. From these estimates a correction factor " λ ", the inverse of Mill's ratio, is derived and entered as a regressor in the final estimating equation on the subsample of those providing benefit estimates.

RESULTS

Of the 215 usable observations, 61 percent of the respondents were able to make an estimate (including zero) of their expected social security benefits amount. The model results reported in both Tables 1 and 2 are only those variables that produced the best fit in each equation.⁵ Variables found to be most significant in the probit equation (Table 1) are wife's and husband's ages.⁶ Each are found to be positively related to the probability of a respondent being able to provide some estimate of future benefits. The estimated signs are both as expected and suggest that older spouses are more likely to have access, at a lower marginal cost, to pension information.

The variable with the largest (although insignificant) effect is husband currently receiving Social Security. If her husband is currently receiving social security benefits, the wife is nearly 20 percent more likely to offer some estimate of future benefit amounts. It happens that none of the women for whom the dependent variable equalled zero are married to men currently receiving social security benefits, which accounts for the unusually high marginal effect. The remaining variables were found to be insignificant with relatively small marginal effects.

⁵The list of other variables which were considered include number of years before both husband's and wife's planned retirement, wife's hourly wage, family assets, receipt by the household of some private pension or transfer income, family health status, and wife's "dependency" status (labor force attachment).

⁶Formulas for calculation of marginal effects for both continuous and discrete variables from estimated coefficients are available upon request.

TABLE 1. Probit Results--Dependent Variable Equals 1 if Respondent made an Estimate of Future Benefits; 0 otherwise.

| Variable | Coefficient | Marginal Effect |
|---|----------------------------|-----------------|
| Intercept | -16.46**** (3.92) | --- |
| Wife's Age | 0.94** E-01 (0.42) E-01 | .0357 |
| Husband's Age | 0.17**** (0.54) E-01 | .0630 |
| Wife's Education | 0.35 E-01 (0.29) E-01 | .0133 |
| Household Income | 0.12 E-04 (0.15) E-04 | .0466 |
| Husband Currently Receiving Social Security | 0.53 (0.45) | .2012 |

n = 215
Log Likelihood = -132.2
 $X^2 = 22.73$
d.f. = 5

**Significant at the 5 percent level
****Significant at the ½ percent level

Mean of dependent variable = 0.60

TABLE 2. Regression Results--Expected Social Security Benefits Corrected for Selectivity Bias--Dependent Variable Equals the Absolute Difference Between Actual and Expected Benefit Amounts.

| Variable | Coefficient ^a |
|---------------------------------------|----------------------------|
| Intercept | -140.22 (336.99) |
| Imputed Benefits | 0.57**** (0.83 E-01) |
| Wife's Education | 21.75 (19.41) |
| Household Income | -0.13 E-01* (0.76 E-02) |
| Wife Expects to Receive Other Pension | -483.62**** (148.78) |
| Number of Children ≤ 18 | 501.71*** (205.75) |
| Lambda | 112.08 (214.97) |

n = 130
F = 13.49****
 $R^2 = .36$

*Significant at the 10 percent level
***Significant at the 1 percent level
****Significant at the ½ percent level

^aAsymptotic standard error in parentheses

Focusing attention now to corrected estimates reported in Table 2 for the sample of married women who have benefit estimates we find these women

anticipated receiving only about 54 percent of their entitled benefit, as measured by comparing the average expected benefit to the average actual benefit. When actual benefit entitlement increased by one dollar, women's expectations only changed by \$.57. The variable which explains the most variance in the expected social security benefit equation (in terms of explained sums of squares) is whether the wife expects to receive other pension benefits. Women who anticipate other pensions perceive that their social security benefit will be higher, a fact that given on average, women underestimate their benefits makes them better predictors. For example, these results predict that an average woman who does not expect to receive a private pension, reports an annual actual-expected gap of \$876. However, women who expect a private pension report a gap of only \$393 between their actual and expected social security benefits, *ceteris paribus*. One reason such an effect is observed may in part be due to employers who provide retirement planning workshops for employees. In such sessions, company pension provisions and how they relate to other forms of investment (e.g., social security and private savings) are explored. Some sessions are even offered during regular working hours implying a negative search cost.

Other statistically significant variables include imputed social security benefits, household income, and the number of children under the age of 18. Consistent with the hypothesis that information is a normal good, a positive coefficient on household income is found. Specifically, an increase of \$1,000 in family income will result in a "closing" of the information gap by \$13.

The negative estimated coefficients on number of children indicates that the presence of dependents results in one being likely to have poorer pension information. Strictly, it implies that the effect of search costs must outweigh the effects of both higher expected benefits and lower real wages. However, since findings indicate that many women have poor or no benefit information it may be the case that women either

1. do not realize their children may be entitled to dependents benefits, or
2. underestimate substantially the additional benefit amount,

such that increased current costs associated with children and information gathering appear to diminish the likelihood that information is sought. Further, a family with young children may have a systematically different rate of time preference than families without young children. For example, future consumption may be discounted at a substantially higher rate by families with younger children while the rate of time preference for families without younger children may not vary over time.

SUMMARY OF FINDINGS

In this sample, 40 percent of married employed women have no information about their social security benefits by age 61. While average annual computed benefits are \$1,603, women's expectations on average are low--only \$866 per year.

Empirical results indicate that the wife's probability of being able to estimate her retirement benefit is primarily a function of her own and her husband's age. Such a finding indicates that family and peer information represent a relatively inexpensive source of information available to the woman.

The variable found most significant in determining the "accuracy" of wife's pension information, is whether she expects a private pension. Again, this is a variable which may represent the cheapest form of pension information available. Information is found to be a normal good as its acquisition is positively related to household income. Presence of children under age 18 results in poorer information with the additional costs to search due to presence of children, outweighing the expected discounted future returns to potential higher benefit levels, a result which may merely be reflecting further inadequate pension information with respect to dependents' allowances.

DISCUSSION

Returning full circle to the initially stated questions of interest, first: do working, married women have a need for consumer information in the area of retirement planning?--the answer must be an unequivocal, yes. Approximately 38 percent of the sample simply had no idea of how much their pension might be.⁷ Further study reveals only 21 percent of women were able to provide estimates of their pension within plus or minus 25 percent of the imputed amount. Again, it bears repeating, that the average woman's age in this sample is 61, a group one would expect to have begun considering their retirement options.

With respect to the second half of the research question: where should educational efforts be directed?--these results have several interesting implications. Firstly, at age 61 women were significantly less likely to have any pension benefit information than women just one year older. This is explained in part by the fact that social security benefit entitlement occurs for most (if fully insured) at age 62. Before age 62 either the cost of obtaining information is prohibitive, or future benefits are discounted so heavily that no information is sought. In either case, this is the group whose marginal benefit from any education effort would likely be the greatest. Results also indicate that employed, married women with any or all of the following characteristics

- children 18 years or younger at home
- low household income, and
- those who are not eligible for any private pension benefits

would be benefited by educational efforts. Certainly, financial planning for retirement before

⁷As a point of general interest 44% of all married men and 33% of all single women in the 1971 survey were also unable to provide any estimate of their expected benefit amount.

age 61 would be a worthy goal, since at that point in time there are but a few ways one can, in any meaningful manner, change the composition of her portfolio. However, these findings indicate that efforts which reach such a group will by no means be for naught, but rather would provide useful and needed information for an informed retirement choice.

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TAX CREDITS AS A FINANCIAL INCENTIVE IN HOME ENERGY MANAGEMENT

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ABSTRACT

Research results prior to this study had indicated that financial incentives in the form of tax credits were believed to be the most favored motivational force for encouraging the adoption of energy-saving measures. Findings from this study have indicated that tax credits may not be as strong an influencing variable as originally believed.

The primary concern of energy policy research since the mid-1970's has been to examine what motivates home energy management (1,2,3,4,5,9,14). Motivational techniques have been classified into three categories: 1) Behavior regulation--establishes speed limits on highways, requires thermostat settings in buildings, 2) Economic restrictions--price increases and added taxes on energy consumption products and services, and 3) Financial incentives--tax credits and government guaranteed loans (8,20). Financial incentive techniques are considered as providing the greatest motivation (13,17,22). Furthermore, tax credits are believed to be the most effective incentive for residential conservation (11,15).

Belief in the motivational force of tax credits may have encouraged the U. S. Congress's enactment of Residential Energy Conservation Tax Credit Act of 1978. The Act was intended to provide individual homeowners and renters with federal tax credits when investments in energy conservation products were made. Over eighty percent of the individual states provide additional tax credits and deductions in various forms.

Presently, the cost benefits of tax incentives are being questioned (16,18,21). The use of tax credits as energy investment incentives depends upon the homeowners' and renters' awareness of available tax credits (7,19). Furthermore, other factors, such as having knowledge about what would be the most appropriate energy saving features to add to a house, may play a more significant role in the selection of energy-saving feature than whether it qualifies for tax credits (6,12,19).

PURPOSE

The purpose of this paper was to examine the role of tax credits as a motivational force in the adoption of energy-saving measures among Arizona households. This was accomplished by: 1) deter-

mining if the households were aware of energy tax credits, 2) identifying what energy-saving measures households were using, and 3) determining if those energy-saving measures used were qualified for tax credits.

METHODOLOGY

Results in this study are based on 851 mail questionnaires returned by adult members of Arizona households during the spring of 1981. Households were selected from 1981 telephone directories using a multi-stage probability cluster sample based on current rural and urban population densities. Multiple mailout procedures were employed following the Total Design Method (10). The response rate was 63%, yielding 666 homeowners and 185 renters.

The nineteen energy saving measures and features used for this study were selected for their tax credit qualifications, range of financial cost and ease of application. The respondents were given two sets of questions. The first set of questions involved seven energy saving measures which required a change in the household's normal living routine or arrangement of living space. These measures did not qualify for tax credits. The second set of questions contained fourteen energy saving features that might be added to a residence. The respondent was asked if the various features existed when they moved in, had been added since moving in, if there were plans to add any of the features during the next two years, or if they had no plans to add during the next two years. The respondent could also indicate if the feature was not applicable to their residence or if they did not know if the feature existed.

RESULTS AND DISCUSSION

Tax Credit Awareness

The respondents' awareness of federal and state tax credits was determined by asking respondents if they were aware of federal and/or state tax credits. Awareness of federal tax credits was indicated by 70.8% of all respondents while only 66.7% were aware of state tax credits. When asked about making claims for tax credits, less than one-sixth of the respondents had claimed any credits for 1978, 1979 or 1980. Although Arizona offers tax credits for the purchase and installation of energy saving features, 2.3% of the respondents stated that there were no state credits available.

Energy Saving Measures

The seven energy management activities which do not qualify for tax credits and cost less than \$15.00 to implement or have no financial cost are

¹ Assistant Professors of Consumer Studies. Data for this paper were collected under the auspices of Western Region Project W-159, "Consequences of Energy Conservation Policies for Western Region Households".

given in Table 1. Five out of the seven measures have been adopted by 47.4% to 76.4% of the respondents. The two measures least likely to be adopted were changing room use to utilize sun-warmed and shaded areas and to have energy audits conducted. Of the seven, changing room use may be the most difficult to implement given existing housing structures and building orientation. Energy audits were not generally available in Arizona at the time of the survey except on a pilot study basis by one utility company; therefore, Arizona residents have had little opportunity to have energy audits conducted.

Table 1. Disposition of Non-Tax Credit Home Energy Saving Measures

| | N = 851 Percentage Distribution | | | |
|--|------------------------------------|-----------------------|------------------|------------------------|
| | Do Now | Plan To Do In 2 Years | Don't Plan To Do | NA or DNK ¹ |
| ENERGY-SAVING MEASURES | | | | |
| 1. Use window coverings to utilize sun and shade | 76.5 | 2.5 | 10.2 | 10.8 |
| 2. Set hot-water heater to 120°F (or less) | 66.1 | 9.6 | 18.8 | 5.5 |
| 3. Set thermometer to 78°F in summer | 56.8 | 7.9 | 17.7 | 17.6 |
| 4. Close some rooms | 56.1 | 3.8 | 23.7 | 16.4 |
| 5. Set thermometer to 65°F in winter | 47.4 | 7.9 | 37.7 | 7.0 |
| 6. Change room use to utilize sun and shade | 35.5 | 4.1 | 36.1 | 24.3 |
| 7. Conduct home energy audit | 8.5 | 13.6 | 63.6 | 14.3 |

¹ Not applicable to home, or do not know.

Energy Saving Features

The fourteen energy saving features that qualify for federal and/or state tax credits are given in Table 2. Except for ceiling and wall insulation and evaporative coolers, the remaining energy saving features existed in less than one-fourth of the housing structures when the respondent moved into the residence. Weatherstripping, the lowest monetary cost action of those eligible for any tax credits, had the highest adoption rate after the respondents moved into the housing structure. However, weatherstripping qualifies only for federal tax credits and not for Arizona state tax credits. Of the five energy saving features added by more than 10% of the respondents, three are particularly suited to desert regions. These are evaporative coolers, outdoor window shading and insulated window coverings.

Table 2. Disposition of Tax Credit Home Energy-Saving Measures.

| | n = 851 Percentage Distribution | | | | |
|--|------------------------------------|----------------------|-----------------------|----------------|---------------------|
| | Existed When Moved In | Added Since Moved In | Plan To Do In 2 Years | No Plans To Do | NA ¹ DNK |
| ENERGY-SAVING MEASURES | | | | | |
| 1. Weatherstripping & caulking on most doors & windows *** | 3.5 | 25.6 | 14.3 | 16.1 | 10.5 |
| 2. More than 4 inches of ceiling insulation * | 41.2 | 17.8 | 7.7 | 12.4 | 20.9 |
| 3. Insulation in exterior walls * | 41.9 | 8.0 | 3.9 | 21.1 | 25.0 |
| 4. Evaporative cooler** | 30.3 | 13.5 | 9.4 | 31.2 | 15.5 |
| 5. Outdoor window shades ** | 10.4 | 17.7 | 10.8 | 45.3 | 15.8 |
| 6. Thick floor insulation * | 23.3 | 4.3 | 3.0 | 28.9 | 40.5 |
| 7. Insulated window coverings * | 7.1 | 17.4 | 7.8 | 51.7 | 16.0 |
| 8. Double panes or storms on most windows *** | 13.7 | 6.9 | 11.1 | 48.2 | 20.0 |
| 9. Clock setback thermostats *** | 9.6 | 3.6 | 6.5 | 58.9 | 51.5 |
| 10. Storm doors on all entrances *** | 6.1 | 6.3 | 10.9 | 52.2 | 24.5 |
| 11. Solar hot-water heater * | 1.2 | 3.2 | 20.3 | 50.2 | 25.0 |
| 12. Solar heating * | 0.7 | 1.0 | 10.9 | 60.0 | 27.5 |

* Eligible for Federal and Arizona tax credit

** Eligible for Arizona tax credit only

*** Eligible for Federal tax credit only

¹ Not applicable to home, or do not know.

Results in Tables 1 and 2 indicate that Arizona households tended to use energy saving measures and features which have low or no financial costs, although tax credits were available for the higher cost items such as solar devices and storm windows. Furthermore, the examination of the column "Plan to do in 2 years" in Table 2 suggested that the possible adoption of the more costly energy saving measures during 1981 and 1982 would be limited.

DEMOGRAPHIC INFLUENCE

A chi-square test was used to examine relationships between the demographic characteristics of respondents and the 19 energy saving measures and features.² These characteristics included respondents' sex, age, educational level, income, type of employment, and age of the housing unit. Two variables had a consistent relationship with the use of energy saving measures and features at the .01 level of significance. These were the age of the respondent and the age of the dwelling.

² When examining for demographic influences upon energy saving measures and features adopted and used, only the 666 homeowners were examined. It was expected that renters frequently are unable and unwilling to purchase and install high cost energy saving features such as insulation, double pane windows and solar devices. Furthermore, the renters probably would not know if the landlord took the energy saving action for tax purposes or not.

Age of Respondents

Age of the respondents was significantly related to all the non-tax energy saving measures except using window coverings to utilize sun and shade. Older respondents were more likely to close off rooms and set back water heaters to 120°F, while younger respondents were more likely to set thermostats to 68° in the winter and 78° in the summer. The younger respondents were also more likely to plan to alter room usage to utilize sun and shade. When considering energy audits, those who had audits done or planned to have them done were in the 34 to 55 age group.

The respondent's age was significantly related to nine of the fourteen tax credit energy saving features. Seven of these features are given in Table 3. Weatherstripping, exterior wall and floor insulation, and outside window coverings already existed or had been added in the housing units of the older respondents. Younger respondents tended not to have these features nor did they have plans to add them. Few solar hot waters existed or had been added. Those who had plans to add the solar hot water heaters were between the ages of 35 and 54. The 35 to 54 year old respondents represented those who would most likely add clock setback thermostats. Although wood burning stoves and glass doors on fireplaces were highly significant, .0000 and .0012 respectively, they were applicable to less than 50% of the housing units, and the plans did not exist for their installation.

Table 3. Chi-Square Relationships of Energy Saving Features Eligible for Tax Credits by Respondents' Age.

| Feature | % of Respondents by Age | | | Significance |
|-----------------------------------|-------------------------|-------|------|--------------|
| | <34 | 35-54 | 55+ | |
| Weatherstripping n = 629 | | | | |
| Existed or added | 13.2 | 25.3 | 28.6 | |
| Plan to add | 4.5 | 4.9 | 6.2 | |
| Don't plan to add | 1.3 | 3.0 | 4.6 | |
| Did not know or Not Applicable | 1.1 | 1.8 | 5.6 | .0335 |
| Insulated Exterior Walls n = 628 | | | | |
| Existed or added | 10.1 | 20.9 | 27.1 | |
| Plan to add | 1.0 | 1.9 | .6 | |
| Don't plan to add | 3.7 | 7.6 | 8.1 | |
| Did not know or Not Applicable | 5.4 | 4.6 | 9.1 | .0114 |
| Floor Insulation n = 626 | | | | |
| Existed or added | 4.5 | 9.8 | 17.6 | |
| Plan to add | 1.1 | 1.3 | 1.0 | |
| Don't plan to add | 6.2 | 9.3 | 11.8 | |
| Did not know or Not Applicable | 8.1 | 14.5 | 14.7 | .0040 |
| Outdoor Window Shades n = 614 | | | | |
| Existed or added | 5.4 | 11.7 | 15.7 | |
| Plan to add | 4.2 | 4.7 | 3.3 | |
| Don't plan to add | 7.8 | 14.5 | 18.6 | |
| Did not know or Not Applicable | 3.0 | 4.4 | 6.8 | .0026 |
| Clock Setback Thermostats n = 626 | | | | |
| Existed or added | 2.2 | 4.2 | 7.5 | |
| Plan to add | 2.6 | 3.5 | 1.6 | |
| Don't plan to add | 10.7 | 19.8 | 26.8 | |
| Did not know or Not Applicable | 4.4 | 7.6 | 8.9 | .0002 |
| Solar Hot Water Heaters n = 624 | | | | |
| Existed or added | .8 | 1.9 | 2.4 | |
| Plan to add | 6.9 | 10.6 | 6.7 | |
| Don't plan to add | 7.7 | 15.2 | 25.0 | |
| Did not know or Not Applicable | 4.5 | 7.0 | 11.3 | .0001 |
| Solar Heating n = 618 | | | | |
| Existed or added | .6 | .5 | .8 | |
| Plan to add | 3.9 | 5.5 | 3.2 | |
| Don't plan to add | 10.5 | 22.0 | 27.8 | |
| Did not know or Not Applicable | 5.0 | 7.3 | 12.7 | .0033 |

Age of the Dwelling

The age of the dwelling was significant for five of the tax credit energy saving features. See Table 4. Overall, the newer the dwelling, the more likely that weatherstripping, storm windows and all three types of insulation had existed before the respondents had actually moved in. Less than 9% of the respondents had actually added the weatherstripping, storm windows or insulation. If it had been added, it was more likely to have been added by respondents living in dwellings built from 1950 thru 1969. This group was also more likely to have plans to add wall insulation in the next two years.

The age of the dwelling was not significant for any of the energy saving measures that required changes in lifestyle or rearrangement of living space.

It should be noted that Arizona housing patterns differ from that in the rest of the United States. Most Arizona housing, 72.4%, has been built after 1960. Respondents 65 years and older were as likely to be living in homes built since 1974 as were younger respondents 25 to 50 years old. Respondents who were in the 50 to 65 year old group were more evenly distributed in housing built after 1950.

Table 4. Chi-Square Relationships of Energy Saving Features Eligible for Tax Credits by Age of Dwelling.

| Feature | % of Dwellings by Age | | | Significance |
|---------------------------------|-----------------------|-----------|-----------|--------------|
| | Prior 1950 | 1950 1969 | 1970 1981 | |
| Storm Windows n = 639 | | | | |
| Existed or added | 2.1 | 3.8 | 17.9 | |
| Plan to add | 1.3 | 4.1 | 7.4 | |
| No plans to add | 5.6 | 19.5 | 21.7 | |
| Did not know or Not applicable | 2.1 | 6.9 | 8.9 | .0000 |
| Weatherstripping n = 659 | | | | |
| Existed or added | 5.4 | 21.4 | 40.1 | |
| Plan to add | 2.9 | 7.0 | 6.0 | |
| No plans to add | 1.5 | 3.4 | 3.9 | |
| Did not know or Not applicable | 1.6 | 2.7 | 4.3 | .0000 |
| Ceiling Insulation n = 655 | | | | |
| Existed or added | 6.9 | 23.6 | 39.2 | |
| Plan to add | 1.1 | 3.5 | 3.6 | |
| No plans to add | 1.8 | 4.0 | 3.4 | |
| Did not know or Not applicable | 1.7 | 2.8 | 8.4 | .0000 |
| Insulated Exterior Wall n = 654 | | | | |
| Existed or added | 5.5 | 14.9 | 37.2 | |
| Plan to add | 0.4 | 2.2 | 1.1 | |
| No plans to add | 2.9 | 9.6 | 6.8 | |
| Did not know or Not applicable | 2.8 | 7.2 | 9.3 | .0000 |
| Floor Insulation n = 650 | | | | |
| Existed or added | 2.6 | 7.3 | 22.0 | |
| Plan to add | 0.4 | 1.0 | 2.0 | |
| No plans to add | 4.8 | 12.0 | 10.6 | |
| Did not know or Not applicable | 3.6 | 13.9 | 19.9 | .0000 |