Impacts of Income and Payment Sources on Consumer Medical Expenditures

This paper investigates consumer medical expenditure patterns by an economic model. The data is from the 1987-88 National Medical Expenditure Survey. The results suggest that different income and payment components affect the expenditure in different directions. These findings have important policy implications such as initiating cost containment policies in health care reform. In addition, the economic model developed in the paper provides a useful framework for investigating consumer health seeking behavior.

Guijing Wang, Centers for Disease Control and Prevention[1]
Alan Friedlob, Centers for Disease Control and Prevention[2]
Melinda Flock, Centers for Disease Control and Prevention[3]

Use of health services in the United States largely depends on consumer affordability since expenditures on health care account for a considerable portion of family income (Taylor and Banthin, 1994). Disease control and prevention continue to be important public-health issues since about 15% of the population have no health insurance and lack access to affordable health care (Rainbolt, 1995). Heavy financial burdens of health care to the Government (Federal and State) have warranted cost containment as a major goal of health-care reform (Jones, 1992). Knowledge of factors influencing consumer health seeking behaviors is very useful for evaluating public health programs and initiating public health policies (Hakkinen, 1991).

Consumer health-seeking behaviors may be distorted for many reasons such as the availability of health insurance and nonprofit organizations. In addition, consumers have different preferences for health care services based on their socio-economic characteristics and health status. The different preferences lead to the different utility levels derived from using these services. Therefore, studying the relationship among consumer socio-economic characteristics, health status, and health-seeking behaviors has important implications for measuring public health status and evaluating public disease-prevention programs.

Income, one of the most important indicators of economic status, from different sources may have different effects on consumer utilization of health care. Moreover, use of income from social-welfare programs such as Aid to Families with Dependent Children (AFDC) and Medicaid may be restricted to specific purposes. These restrictions affect consumer consumption decisions.

Different payment sources also link consumer budget constraint and may be major determinants in seeking health care. Reviewing the literature of health care demand reveals that effects of income and payment sources on consumer utilization of medical services have not been addressed. For example, numerous studies on demand for health care have focused particularly on either the relationship between insurance status and health care use or demand for a specific health services for a specific population group.

Several studies used income as an independent variable and reported an insignificant coefficient estimate (e.g., Van De Ven and Van Der Gaag, 1982; Freiman et al., 1993; and Jones and Salkever, 1995). Van De Ven and Van Der Gaag suggested that separating earned income from unearned income might be needed, but they were unable to do further investigation because of data problems.

Many other studies analyzed the effects of consumer payment sources on health-care use (e.g., Duan et al., 1983; Nelson et al., 1984; Leibowitz et al., 1985; Moeller, 1989; and Smith, 1993). However, they only used insurance indicators (dummy variables) as independent variables. The influence of actual payment shares by consumers, insurance companies, and social health programs on health seeking behavior have never been addressed.

This research attempts to fill this gap and provides information about the impacts of income sources and actual payment shares on consumer health seeking behavior. Specifically, this paper develops an economic model and examines the effects of various income and payment sources on consumer medical expenditures using the 1987 National Medical Expenditure Survey (1987 NMES). Relationships

among consumer health status, socio-demographic characteristics, and the medical expenditures are also analyzed.

Theoretical Framework

Consumers derive utility from using health care services such as physician visits and prescriptions as well as from consuming an aggregated commodity which may include food, clothing, housing, etc. Different from other consumer goods, health care is extraordinary (Mushkin, 1962). Demand for health care depends on a person's health status and health-care use is an indicator of health deterioration (Hakkinen, 1991). A health-care service for a healthy person may simply not be a relevant good in his consumption bundle; i.e., this service cannot be classified as a normal or an inferior good. Thus, the utility function should be expressed as:

$$U = U(H|_{HS}, X) , \qquad (1)$$

where H is a set of health services available to consumers, HS is a set of health status indicators, and X is an aggregated commodity.

Assuming a representative consumer has S income sources such as salary and social welfare income, and M payment sources for medical services such as out-of-pocket and insurance coverage, the utility maximization problem can be formulated as:

$$\begin{aligned} &Max \quad U = U(H|_{HS}, X) , \\ &s.\ t. \quad H(P_h w_{h1}) + XP_x \le Y , \\ &\qquad Y = \sum_{s=1}^{S} y_s , \\ &\qquad P_h = \sum_{j=1}^{M} w_{hj} P_h , \\ &\qquad 0 \le w_{hj} \le 1 , \quad and \\ &\qquad \sum_{j=1}^{M} w_{hj} = 1 , \end{aligned} \qquad (2)$$

where P_h is the charge per unit of health service H, P_x is the price of commodity X, Y is the total income, y_s is the income from source s, and w_{hj} is the payment share from source j for the health service H and w_{h1} is out-of-pocket payment share.

A major difference between this formulation and conventional consumer utility maximization problem is the addition of medical payment components. In the budget constraint, only the out-of-pocket payment should be included. The payment shares of medical expenditures are important factors in determining consumer utility levels besides the conventional factors of income and prices.

Solutions for the consumer utility maximization problem can be represented by:

$$H = f(w_{h1}, \ldots, w_{hM}, y_1, \ldots, y_S, P_h, P_x, HS) . \qquad (3)$$

For a cross-sectional survey data, variations in charges for a health service, P_h, and the commodity price P_x, are mainly due to service quality and regional differences. They can be captured by consumer socio-demographic characteristics and regional dummy variables.

Therefore, by replacing the P_i and P_x equation (3) can be rewritten as:

$$H = f(w_{h1}, \ldots, w_{hM}, y_1, \ldots, y_S, D, HS) , \qquad (4)$$

where D is a vector of consumer socio-demographic characteristics such as age and family size and regional dummy variables.

Equation (4) shows that consumer demand for health services is a function of payment shares, income from various sources, socio-demographic characteristics, regions the consumer resides, and his/her health status. This formulation allows that payments and income from different sources affect the demand differently. Compared to without separating income into various categories and only using insurance (or copayment) indicators, this formulation is more capable of reflecting consumer preferences.

Empirical Model Specification

For empirical analysis, the demand for health care in this study is measured by total medical expenditures (Duan et al., 1983). The independent variables include four payment shares: share of out-of-pocket, share of private insurance coverage, share of social transfer programs such as Medicaid and Medicare, and share of other sources. Only three shares are included in regression estimation to avoid singularity problems. A negative relationship between medical expenditures and out-of-pocket share is expected. Consumers may be less likely to seek health-care services if a larger proportion of the fee paid from out-of-pocket, other things equal. In contrast, a larger share of payments from insurance policy and social welfare should influence medical expenditures in positive directions.

Three income sources are included as independent variables to capture the effects of consumer socio-economic status on the demand. They are (1) salary income (including tips and business earnings), (2) social welfare income (including social security), and (3) other income including veteran's payment, retirement, alimony, child support, interest, etc. It is expected that individuals with a higher wage income spend more on health care because they can afford it, other things equal. Social welfare income has a negative impact on the expenditures because it is an indicator of poverty status. Since many individuals such as children do not have any income, these income variables are derived by dividing family income by family size.

The socio-demographic variables include family size, age, race, gender, and education. The family size is used because it may be directly related to consumer health-care choices. For example, compared with small families, large families, especially those including children, may consider more things such as location, price, or specialty of health-care facilities. Age, race, and gender are used to reflect health care needs based on biological and ethnic differences. The educational levels refer to years of school completed by the reference person. It is assumed that the reference person has a substantial influence on decisions of other family members in using health-care services, especially those for children. Three regional dummy variables are used to capture the effects of regional differences of health-care quality and availability.

Another set of explanatory variables are health status measures. They are approximated by the frequency of health service use. Since health-care use is an indicator of health deterioration (Hakkinen, 1991), it is assumed that the more frequent an individual uses health services, the poorer his health condition is. Three variables are identified for this study (Freiman et al., 1993). They are ambulatory visits, total number of prescriptions purchased, and inpatient stays.

Ambulatory visits includes visits to a medical provider, a hospital outpatient department, or emergency room that did not result in an inpatient stay. Each prescription medicine event represents one purchase or refill of a medication. To ensure the flexibility of the effects of severity of illness on the expenditures, a quadratic term is included as an independent variable for the ambulatory visits and prescription drugs, respectively. Positive coefficients of the quadratic terms means that marginal utilities of health-care utilization are increasing. And it is decreasing if the coefficients are negative.

Inpatient stays are the number of hospital visits that resulted in an admission. Home health visits are included if the providers were medical or nonmedical personnel employed by formal caregiving organizations (or self-employed) who provided personal care services in the home for monetary compensation. This variable of inpatient stays is indicated by a dummy variable. Thus, a double log demand model is specified as:

$$\begin{aligned}\ln(EXP) = {} & \alpha_0 + \alpha_1 \ln(IN_1) + \alpha_2 \ln(IN_2) + \alpha_3 \ln(IN_3) + \\ & \alpha_4 \ln(PW_1) + \alpha_5 \ln(PW_2) + \alpha_6 \ln(PW_3) + \\ & \alpha_7 \ln(HS_1) + \alpha_8 \ln(HS_1)^2 + \alpha_9 \ln(HS_2) + \\ & \alpha_{10} \ln(HS_2)^2 + \alpha_{11} HS_3 + \sum_{i=1}^{n} \beta_i D_i + e \ ,\end{aligned} \qquad (5)$$

where the variable definitions are presented in Table 1, D's are socio-demographic and regional dummy variables, α's and β's are the parameters to be estimated, and e is the error term.

There are two important reasons for adopting the double-log specification. (1) The logarithmic transformation is helpful in diminishing the influence of extreme values and assuring statistical properties of the data such as normality (Duan et al., 1983; Moeller, 1989; Gerdtham et al., 1992; and Freiman et al., 1993). The normality property of the data yields more robust estimates. Many pervious studies have adopted the double-log functional specification (e.g. Nelson et al., 1984; Leibowitz et al., 1985; Gerdtham et al., 1992; and Smith, 1993). (2) It is linear in parameters, robust to model misspecification, and appearance of elasticities as parameters (LaFrance, 1986). The coefficients of the logged variables are the elasticities. For example, the coefficients of payment shares can be interpreted as the payment share elasticities of medical expenditures.

Data

The 1987 National Medical Expenditure Survey (1987 NMES), the most recent comprehensive health care information available, serves as the data base. This survey was conducted in 1987, sponsored by the Agency for Health Care Policy and Research, Public Health Service, Department of Health and Human Services. (Cohen et al. (1991) provided a detailed description of the sample design.) The survey data provides comprehensive information on consumer socio-economic status such as income, family composition and detailed medical use, expenditures, and payment sources for the period from January 1 to December 31, 1987. Table 1 shows variable definitions and their sample statistics of the data.

Table 1
Variable Definitions and Selected Sample Statistics (N=21,217)

Variables	Definitions	Means	Std Dev
EXP ($)	annual total medical expenditure	2002.23	6397.01
IN_1 ($)	income from wage, salary and tips	8205.29	1011.01
IN_2 ($)	income from social transfer programs	1318.62	2171.29
IN_3 ($)	income from other sources	3198.28	8048.05
PW_1 (%)	share of payment from out-of-pocket	47.99	0.38
PW_2 (%)	share of payment from private insurance coverage	28.35	0.35
PW_3 (%)	share of payment from social welfare programs	19.51	0.35
PW_4 (%)	share of payment from other sources	4.14	0.15
HS_1	number of ambulatory visits	9.79	23.56
HS_2	number of prescription medicine	7.09	12.96
HS_3 (0,1)	1 if an individual has inpatient stays	0.12	
FS (person)	family size	3.31	1.69
AGE (year)	age of an individual	38.57	24.68
WHT (0,1)	1 if an individual is white	0.75	
BLACK (0,1)	1 if an individual is black	0.20	
NWB (0,1)	1 if an individual is not a white or black	0.05	
MALE (0,1)	1 if an individual is male	0.45	
FEM (0,1)	1 if an individual is female	0.55	
ED_1 (0,1)	1 if reference person completed less than 9 year of school	0.19	
ED_2 (0,1)	1 if reference person completed 9 to 12 years of school	0.45	
ED_3 (0,1)	1 if reference person completed more than 12 years of school	0.37	
NEA (0,1)	1 if an individual resides in Northeast region	0.20	
MW (0,1)	1 if an individual resides in Midwest region	0.25	
SOUTH (0,1)	1 if an individual resides in South region	0.36	
WEST (0,1)	1 if an individual resides in West region	0.20	

Table 2 presents medical payment shares and health service utilization by race and educational levels. These information are important in understanding consumer health seeking behavior. For example, compared with blacks, whites use more ambulatory visits and prescription medicine, but less likely use inpatient stays. This may imply that blacks are more likely to delay their illness treatment. The percentage of out-of-pocket payment is higher for white than for blacks. The opposite holds for the percentage of social welfare payment. This fact may suggest that social health programs should focus on encouraging blacks to use more ambulatory visits.

Estimation Results

The double-log model specified previously is estimated using the 1987 NMES data, providing statistically satisfactory results (Table 3). The R^2 is 0.74 and almost all parameter estimates except two are statistically significant at the 0.05 or higher levels. Most of the significant estimates have expected signs.

Coefficients of salary income and social transfer income are statistically significant at the 0.01 level with opposite signs. This is expected and implies that incomes from different sources have different effects on consumer use of health care. Compared with low income (from wage and salary) consumers, high income individuals may be more aware of their health and able to use more health services in terms of quantity or quality. Social transfer income is negatively associated with the expenditures. This suggests that social welfare recipients have limited financial ability of using health-care services. The more income they receive from social welfare, the lower their socio-economic status is.

Income from other sources has a positive coefficient, although it is only statistically significant at the 0.15 level. Because these coefficients can be interpreted as income elasticities, the income elasticity of medical expenditures are 0.007 for wage income, -0.004 for social transfer income, and 0.001 for other incomes. The small magnitudes of the estimated income elasticities imply that consumer demand for health care is not highly sensitive to income changes. These results are consistent with those of previous studies. Several studies such as Freiman et al. (1993) and Jones and Salkever (1995) reported that income was not a significant factors in explaining the consumer demand.

All three payment shares have significant coefficient with expected signs. The higher proportion of the expenditures paid from out-of-pocket, the lower medical expenditures would be. The opposite holds for the payment share of private insurance and social welfare programs. One percent increase in payment share of out-of-pocket results in about 0.004% increase of the total expenditures. The total expenditure increases about 0.04% for one percent increase in the share of private insurance, and 0.03% for one percent increase in the share of social welfare programs. These results may imply that payment shares are a powerful means in controlling medical expenses. Because previous studies used insurance (or copayment) indicator (dummy) variables, no comparison can be made on these findings.

Increasing payment share of out-of-pocket is useful for keeping down health care costs, but may cause a lack of access to affordable quality health care for some people especially indigent people. A higher payment share of insurance policy and social welfare programs can make health care more accessible to consumers, and increase the medical expenditures. There is an optimal combination of payment shares to meet the demand for health care. At this combination level, consumers can maximize the health outcomes from using health-care services with a given level of medical expenditures or the expenditures can be minimized for a given level of health outcomes.

Health indicators are significant predictors of medical expenditures in positive direction. All the estimated coefficient for ambulatory visits, prescribed medicines and their respective quadratic terms are positive and statistically significant at the 0.01 level. This implies that the medical expenditures increase at an increasing rate as health status becomes poor. This

Table 2
Sample Means of Medical Payment Shares and Health Care Use by Race and Educational Groups

Groups	PW_1 (%)	PW_2 (%)	PW_3 (%)	HS_1 (n[a])	HS_2 (n)	HS_3 (%)
Race:						
White	51	30	16	10	7	12
Black	37	25	34	8	7	14
Other	47	25	23	7	4	10
Education:						
ED_1	46	15	35	12	11	16
ED_2	47	28	21	9	7	13
ED_3	51	36	9	9	5	9

[a]n=number of times.

is reasonable because health care services are more desirable and expensive when health status becomes poor. Marginal utility of using health care increases when more ambulatory visits and prescribed medicine services are used.

Age also has a positive coefficient and is statistically significant at the 0.01 level. This implies that elderly persons require more health care, including ambulatory visits, prescription medicines, and inpatient stays. This is consistent with commonly assumptions of the positive correlation of health status depreciation rates and age. Leibotwitz et al. (1985) and Freiman et al. (1993) reported the similar results.

Other demographic variables including educational levels, gender, and race have statistically significant coefficients at the 0.05 or higher levels. Educational level is positively associated with medical expenditures. Individuals with more years of education may use higher quality and more expensive health-care facilities than do the individuals with less years of education, other things equal. This may suggest that these people own higher human capital, and life may be more valuable to them. Education was often found to be a relevant variable determining health care demand, but the results are mixed in the literature.

Gender is also significantly associated with total medical expenditures. Although they use health services more often than do the males (Table 2), females spend less on health-care services. This fact may suggest that males are more likely to delay their disease treatment and females are using more preventive health care. White and other racial groups have a lower expenditure than blacks. This may be due to the fact that the possibility of using inpatient stays is higher for black individuals (Table 2). Coefficients of regional dummy variables are statistically significant representing the effects of regional differences of health care quality and availability on the expenditures.

Conclusions

This paper investigated the impacts of income and payment sources on consumer medical expenditures using an economic model. From the 1987 National Medical Expenditure Survey, the estimation results were statistically satisfactory and provided valuable information about consumer health seeking behaviors. A thorough comparison of the findings with those of previous studies could not be provided either because of data differences or different methods and variables used.

Income and medical payments from different sources affected consumer health seeking behaviors

Table 3
Parameter Estimation Results of Medical Expenditure

Variables	Parameters	t-ratios
$Ln(IN_1)$	0.007**	7.26
$Ln(IN_2)$	-0.004**	-4.56
$Ln(IN_3)$	0.001	1.39
$Ln(PW_1)$	-0.004*	-2.16
$Ln(PW_2)$	0.038**	29.18
$Ln(PW_3)$	0.028**	15.98
$Ln(HS_1)$	0.539**	104.91
$Ln(HS_2)$	0.154**	28.91
$Ln(HS_1)^2$	0.045**	83.33
$Ln(HS_2)^2$	0.013**	24.61
HS_3	1.969**	102.54
AGE	0.008**	24.43
ED_1	-0.033*	-1.95
ED_3	0.023	1.71
MALE	0.041**	3.43
WHT	-0.076**	-4.73
NWB	-0.069*	-2.37
FS	-0.006	-1.43
NE	-0.061**	-3.19
MW	-0.127**	-6.97
SOUTH	-0.072**	-4.15
CONT	4.866**	119.33
R-Square	0.74	

** and * denote statistically significant at the 0.01 and 0.05 significance levels, respectively.

differently. Compared with high wage income consumers, low income consumers and welfare recipients had a lower level of medical expenditure. In addition, the findings suggest that treating income as one variable as employed in some previous studies may be inappropriate. For policy implications, consumer socio-economic status should be accurately measured by incomes from different categories. Although income had a small impact on medical expenditures, the results strongly suggest that economic disadvantaged consumers behave differently in seeking health care services from others. If they are targeted in disease prevention, incomes from different sources serve as better criteria to identify them.

Shares of payment were clearly related to medical expenditures. The trade-off between public health and societal cost existed. Finding a nearly optimal combination of payment shares was essential for efficacy and efficiency of social welfare programs and enhancing public-health status. The elasticity of payment share of private insurance was the largest in magnitude among the three payment shares. Therefore, to control health-care costs, policies of private insurance companies are the most important factors. Increasing out-of-pocket payments has little affect on medical expenditures. This conclusion is also justified by the small magnitude of salary income elasticity of the expenditures.

Since expenditures increased at an increasing rate as usage of the ambulatory visits, prescribed medicine services increased, the effectiveness of using these services may decline at a certain level of the use. For example, when an individual's health status becomes so poor that he/she needs these services too often, inpatient stays may be a better means for this individual in terms of cost effectiveness. These findings suggest preventive health services may be more cost effective for individuals with better health status. The earlier the diseases are detected and prevented, the more cost-effective the preventive services are.

The relationship between demographic variables and expenditures revealed priorities for public-health policies. Other things equal, males spend more on using health services than do females. This may imply that males use health services until disease symptoms appear. If this is the case, encouraging men to use more preventive care services may be an alternative to improve the effectiveness of social health-care programs. For example, women may be currently using more preventive care services such as STD screening and testing. To further enhance the efficiency of STD prevention programs, strategies of STD screening and testing for men should also be emphasized.

Population groups of black and elderly were heavy users of health care especially inpatient care. They also had the highest social welfare payment shares. Containment of medical costs for these groups is essential for relieving societal financial burdens on health care. Encouraging them to use more ambulatory visits, prescribed medicine, and other preventive services may be the appropriate means to lower the medical cost.

References

Cohen, S., R. DiGaetano and Waksberg, J. (1991). Sample design of the 1987 household survey. (AHCPR Pub. No. 91-0037). Agency for Health Care Policy and Research, Rockville, MD: Public Health Service.

Duan, N., W. G. Manning, Jr., Morris, C. N., & Newhouse, J. B. (1983). A comparison of Alternative models for the demand for medical care. Journal of Business & Economic Statistics, 1,116-126.

Freiman, M. P., Cunningham, P. S., & Cornelius, L. J. (1993). The demand for health care for the treatment of mental problems among the elderly. Advances in Health Economics and Health Service Research, 14,17-36.

Gerdtham, Ulf-G, Sogaard, J., Anderson, F., & Jonson, B. (1992). An econometric analysis of health care expenditure: A cross-section study of OECD countries. Journal of Health Economics, 11,63-84.

Hakkinen, U. (1991). The production of health and the demand for health care in Finland. Social Science Medicine, 33,225-237.

Jones, M. G. (1992). Consumer access to health care: Basic right 21st century challenge. The Journal of Consumer Affairs. 26(2), 221-242.

Jones, A. S. & Salkever, D. S. (1995). The mix of primary care versus surgical specialist physicians: An examination of gallbladder surgery. Southern Economic Journal. 61(4),1057-1075.

LaFrance, J. T. (1986). The structure of constant elasticity demand models. American Journal of Agricultural Economics, 68,544-552.

Leibowitz, A., Manning, W. J., & Newhouse, J. P. (1985). The demand for prescription drugs as a function of cost-sharing. Social Science Medicine. 21,1063-1069.

Moeller, J. F. (1989). Impact of health insurance on annual expenditures for prescribed medicines. Paper presented at the 1989 annual meeting of the American Public Health Association. Chicago, IL: October 22-26, 1989.

Mushkin, S. J. (1962). Health as an investment. Journal of Political Economy, 70,S129-S157.

Nelson, A. A., Jr., Reeder C. E.,, & Dickson, W. M. (1984). The effect of a Medicaid drug copayment program on the utilization and cost of prescription services. Medical Care, 22,725-735.

Rainbolt, G. W. (1995). An evaluation of Clinton's health care proposal. In Allocating Health Care Resources, ed. by J. M. Humber and R. F. Almeder. Totowa, NJ: Humana Press.

Smith, D. G. (1993). The effects of copayments and generic substitution on the use and costs of prescription drugs. Inquiry, 30,189-198.

Taylor, A. & Banthin, J. (1994). Changes in out-of-pocket expenditures for personal health services: 1977-1987. (AHCPR Pub. No. 94-0065). National Expenditure Survey Research Finding 21, Agency for Health Care Policy and Research. Rockville, MD: Public Health Service.

Van De Ven, W. P. M. & Van Der Gaag, J. (1982). Health as an unobservable: A MIMIC-model of demand for health care. Journal of Health Economics, 1,157-183.

Endnotes

1. Health Economist, Division of STD prevention, Mail Stop E-44, 1600 Clifton Road, Atlanta, GA 30333.
2. Chief, Program Evaluation and Preventive Health Services Research Branch, Division of STD prevention, Mail Stop E-44, 1600 Clifton Road, Atlanta, GA 30333.
3. Information Specialist, Division of STD prevention, Mail Stop E-44, 1600 Clifton Road, Atlanta, GA 30333.

Consumers' Preferences for Health Care Reform

Using the 1992 Health and Retirement Study, this study examines consumers' preferences for various health care reform proposals. Young, non-whites, self-employed and those who reside in the Northeast favor national health insurance. Older males tend to favor extending Medicare to cover nursing home and home health care. Those with poor health and low-income are likely to favor having subsidized nursing home insurance. Self-employed are less likely to support tax credits for health insurance premiums

Gong-Soog Hong, Purdue University[1]
Shelley I. White-Means, The University of Memphis[2]
Julie Yu, Purdue University[3]

Introduction

Proposals for transforming the financing of our nation's health care system are more the standard than the abnormal. We are currently questioning whether to modify the radical health care financing reforms of the 1960's, Medicare and Medicaid. We continue to debate the feasibility of a universal health care plan for all persons in the nation. While there is generally a consensus that something must be done, the nature of the necessary reform is unclear.

Health insurance coverage is required if one wants to obtain reasonable access to medical services for unexpected medical crises, and for everyday health concerns. However, inordinate cost of health insurance and medical services lead to dependency on employer-provided health insurance coverage, and the federal and state Medicare and Medicaid programs. Nonetheless, increasing number of persons are finding themselves excluded from access to medical services (Posey, 1995). This is, in part, due to the inability of employers or federal and state governments to secure financial resources that shoulder the burden of financing access to rising health care costs. What options are available?

In September 1995, proponents of Medicaid reform suggested that it is possible to reduce the federal government financing obligations by $182 billion via reform of this program (Haveman, 1995). The changes suggested are to (1) give nursing homes more flexibility to discharge senior citizens without their consent from nursing homes, (2) allow states to require spouses of nursing home residents to sell their homes, cars and other assets to finance care, (3) require adult children to pay for the nursing home care of their parents, and (4) annual federal and state block grants that replace the current system of open-ended federal matching and encourage states to come up with innovative ways of providing services for low income persons.

At the same time there are efforts to reform Medicare. Dollar magnitudes such as $270 billion in savings over a seven-year period is the guesstimate for Medicare reform (Pianin & Rich, 1995). The proposed reforms consider a five-prong strategy, including (1) mitigating the growth of reimbursements to medical providers, (2) increasing the premiums for physician insurance and increasing annual deductibles of Medicare beneficiaries, (3) allowing insurees to switch to managed care plans, (4) increasing the age of eligibility from 65 to 67, and (5) income related premiums, with persons having incomes greater that $100,000 paying more.

Proposals for the complete overhaul of our health care system are a secondary consideration. Discussions of the Clinton Health Security Act (1994) and its financing costs made the nation aware of the potential tax burdens of a major health reform, estimated to range from 8 to 29 billion dollars (Long & Rogers, 1993). Many legislators came to the conclusion that we need more modest and intermediate strategies of reform, i.e., state health reform. Thus, persons in individual states are providing the test cases for the evaluation of "new" health care financing strategies, with states implementing various forms of managed care and health care rationing systems.

To what extent are consumers in support of health care reform? What factors influence their preferences for different types of health care reform? Are these questions simply answered by a response such as those with the greatest health care needs (those with limited access to care) are those who want more reform? Or, is another simple response that those who will pay

higher taxes will be less likely to support reform?

We know very little about the preferences of individual consumers regarding health care reform. In this paper we seek to understand those factors most important in influencing consumers' preferences for four types of health care reform: (1) universal coverage (national health insurance), (2) income related fees for Medicare-covered services, (3) government subsidized nursing home insurance, and (4) health insurance premium tax deductions and subsidies. We use national data from the 1992 Health and Retirement Study and ordered probit regression models to understand these issues.

Proposed Health Care Reform Proposals

Hundreds of health reform proposals have been presented before Congress in the last three years (Grossman, 1994). Some presented the ideas of (1) completely restructuring the health care financing system, (2) getting rid of the piece-meal system of financing at the federal, state, local, and household levels, and (3) providing universal care for all citizens. The Clinton plan was such a proposal. Reform of this type (supported by a progressive tax structure), facilities a door of access to care for all citizens, enforces an equitable process, yet is expensive to finance.

Alternatively, reform proposals have addressed the needs of particular populations (e.g., the elderly). The primary focus of the Pepper Commission proposal was expansion of catastrophic coverage (including nursing home care) for the Medicare insured (Pepper Commission, 1994). More recent Medicare reform proposals have focused on vertical equity by premiums and copayments for high income consumers, with out-of-pocket payments reflecting a similar share of income for all Medicare patients.

Tax incentives are a mechanism to encourage enrollment in health plans,. Nonitemized tax deductions for individual premiums were part of the Cooper, Gramm and Michel proposal (Grossman 1994). Historically, tax subsidies for employer premiums have been used to encourage employer-based insurance. Recent health proposals have placed limits on this type of employer subsidy, including the Chaffee, Cooper, an Clinton proposals (Grossman, 1994).

Methods

Data and Sample

The data for this study are from the 1992 Health and Retirement Study (HRS). It is a national longitudinal study that focuses on labor force participation, pensions and health insurance, health, retirement, housing and mobility, family structure, and economic status of 12,656 individuals from 80,000 households. The Institute for Social Research at the University of Michigan and the National Institute on Aging collected the data (Juster & Suzman, 1994). The study oversampled those aged 50-61 and Afro-Americans.

The sample is from the experimental module J, Health Risks. It is one of the ten modules that try to measure analytically important concepts such as physiological measurements of health and functioning status, parental wealth, and occupational injuries. These modules contain information on about 500 to 800 randomly selected households. The current study examined 434 households. The data were weighted for analysis to represent the general population.

The data also provide a unique opportunity to examine consumer preferences for health care reform. Respondents were asked whether they are in favor, neutral, or opposed to each of these four proposals: 1) A national health insurance program in which all Americans are covered by health insurance, with costs paid by tax dollars, 2) Extension of Medicare to cover all costs of nursing home care and home health care, with Medicare recipients the full cost as additional fees proportional to income, 3) A government subsidy from general tax revenues to make the cost of nursing home insurance more affordable to the average citizen, and 4) A plan in which health insurance premiums can be deducted from or taken as a credit against income taxes, thus increasing and decreasing tax burdens, respectively. These four proposal options capture features of many recent health reform bills.

Variables

The regression model includes five major explanatory factors: demographic, health status, health insurance, economic, and work-related. Table 1 describes variable measures. The demographic variables are age, gender, marital status, education, race, and region.

We hypothesize that ones preferences for health reform are, in pat, influenced by ones projected need for medical services. Current health status is one indicator of need. In this paper, both subjective and objective measures reflect health status. Self-reported health is a subjective indication of general health status and measured by two dummy variables, one for a rating of excellent and a second for a rating of good or very good. Responses for these ratings are compared with a health rating of poor or fair.

Table 1
Measurement of variables

Variables	Measurements
Dependent variables	
National health insurance program	1 if favor, 2 if neutral, and 3 if opposed
Medicare extension	1 if favor, 2 if neutral, and 3 if opposed
Nursing home insurance	1 if favor, 2 if neutral, and 3 if opposed
Tax credit	1 if favor, 2 if neutral, and 3 if opposed
Independent variables	
Demographic variables:	
Age	age in years
Gender	1 if male, 0 if female
Marital status	1 if married, 0 otherwise
Education	number of years of completed education
Race	1 if white, 0 otherwise
Region	1 if Northeast, 2 if Midwest, 3 if West, and 4 if South
Health status:	
Self-reported health	1 if poor, 2 if fair, 3 if good, 4 if very good, 5 if excellent
# of medical condition	total number of conditions (high blood pressure, diabetes, malignant tumor, chronic lung disease, heart problem, and arthritis)
Mental health	an index created using responses to questions regarding the level of depression, restlessness, happiness, loneliness, and sadness
Social health	an index created using responses to questions: people are unfriendly, people dislike me, and I could not gel along.
Nursing home	chances to live in a nursing home, from absolutely no chance (0) to absolutely certain (10)
Health insurance:	
Gov.-insurance	1 if covered by federal health insurance program, such as Medicare, Medicaid, CHAMPUS, VA or military program, 0 otherwise
Retirees-insurance	1 if expect to have health insurance after retirement, 0 otherwise
Private insurance	1 if covered by Medigap, supplemental coverage, or long-term care insurance purchased privately
Economic Resources:	
Income	total annual household income in 1992
Other liquid asset	sum of dollar values in checking/savings, money market funds, CDs, govern. savings bonds, and T-bills
Nonliquid asset	dollar value of vehicles, IRA and Keogh, bonds and mutual funds, and real estate excluding homes
Pension	1 if covered by pension/retirement plan, 0 otherwise
Work-related variables:	
Employment	1 if employed, 0 otherwise
Self-employed	1 if self-employed, 0 otherwise
# laid off	# times laid off previously

The objective measures of health include assessments of physical, mental, and social health.[4] The sum of diagnosed medical conditions reflects the respondents' physical health condition (see Table 1 for details). We created an index for mental well-being using information about the level of depression, restlessness, happiness, loneliness, and sadness. Social health is measured by an index that is based on responses to three survey questions: people are unfriendly, people dislike me, and I could not get along.

We also include a measure of the respondent's perception of future health needs and medical services. This is a measure reflecting a person's perception of a future need to use nursing home services, We use a self-assessed rating that ranges from zero (no chance) to 10 (absolutely certain).

Health insurance coverage is usually essential to obtaining access to medical care. Thus, we include measures of coverage to capture how current levels of medical access impact on perceptions of health reform. Three dummy variables measure health insurance coverage: (1) coverage by federal health insurance programs such as Medicare, Medicaid, CHAMPUS (Civilian Health and Medical Program for the Uniformed Services), VA or military program, (2) availability of health insurance after retirement, and (3) ownership of supplemental health insurance such as Medigap and long-term care insurance.

We include measures of other economic resources in our model. They are household income, other liquid assets, nonliquid assets, and availability of pension benefits. Household income is the total income in 1992. Other liquid assets include the dollar value of checking and savings, money market funds, CDs, government savings bonds, and T-bills. The dollar value of IRAs and Keoghs, bonds and mutual funds, and real estate excluding homes compose the measure of non-liquid assets. Pension benefits are measured by the

enrollment in pension plan(s), one if enrolled and zero otherwise. Measures of future economic earnings potential are captured in two work-related variables -- employment status and self-employed. Employment status is a dummy variable that equals one if the person is employed and zero otherwise. Self-employed is also a dummy variable, one if self-employed and zero if not.

Analysis

The dependent variables have three levels of responses; favor, neutral, and opposed. When there is an ordering to the categories associated with the dependent variable, one extension of the probit model, ordered probit, is commonly used. The ordered probit model assumes that there are cutoff points in an underlying index (Z) which define the relationship between the observed and unobserved dependent variables. The model is built around a latent regression in the same manner as the binomial probit model. The following is a specification of the ordered probit model. $Y^* = \alpha + \beta x + \epsilon$, Y^* is unobserved. What we observe is $Y = 0$ if $Y^* \leq 0$, $Y = 1$ if $0 < Y^* \leq \mu_1$, $Y = 2$ if $\mu_1 < Y^* \leq \mu_2$, then $Y = J$ if $\mu_{j-1} < Y^*$. The μs are unknown threshold parameters to be estimated with α and β (Greene, 1993; Pindyck & Rubinfeld, 1991).

Results

Sample Characteristics

The mean age for the sample is 56 and mean education is 12 years. About half of the sample is male, 60 percent are married, and over 70 percent are white. About 45 percent of the sample lived in the South. The respondents also reported at least one medical condition and the mean score for the expectation to live in a nursing home is 4.06 on a scale of zero to ten. Government provided health insurance such as Medicare, Medicaid, CHAMPUS, or VA covers over 20 percent of the sample. About a half of the sample expect to have health insurance coverage after their retirement or currently have coverage by their previous employer's insurance. Supplemental health insurance coverage, such as Medigap, covers 18 percent of the sample. Mean income is about $42,000, while the mean values of other liquid assets and non-liquid assets are about $17,000 and $100,500 respectively. About 36 percent have pension coverage, 64 percent are working for wages and salaries, and 23 percent are self-employed.

General Opinions on Four Health Reform Proposals

The distributions of the dependent variables are presented in Table 2. Approximately 50 percent of the respondents favored a national health insurance program paid by tax dollars. A majority (53 percent) also favored extended coverage for nursing hoe and home heath care with Medicare recipients paying the full cost as additional fees proportional to income. Over 70 percent of the respondents favored having a government subsidy from general tax revenues to make the cost of nursing home insurance more affordable, and also a tax credit for health insurance premiums paid.

The proposal receiving the most opposition was the extension of Medicare to cover long term care services, with partial financing by seniors. Almost one-fourth of the sample opposed this type of reform. In contrast to our recent experience of inability to obtain Congressional support for implementing the Clinton health reform proposal, the data n table 3 report that less than 20 percent of respondents opposed national health insurance.

Table 2
Distribution of the dependent variables

Variables/Choices	Favor	Neutral
National health insurance	234 (53.9)[a]	119 (27.4)
Medicare extension	230 (53.0)	96 (22.1)
Nursing home insurance	310 (71.4)	69 (15.9)
Tax deduction of insurance premium	325 (74.9)	69 (15.9)

Note: [a] Numbers in parentheses represent percentages

Factors Associated with Consumers' Opinions on Four Health Care Reforms

Results of the ordered probit models are presented in Table 3. Demographic factors and work-related variables explain preferences for national health insurance. Current health status, insurance status, and financial status were not significantly related to support for national health insurance. Older respondents were less likely than younger ones to favor national health insurance programs. Whites were less in favor of having national health insurance than nonwhites. Respondents who resided in the Northeast region were more likely and those in the Midwest were less likely than Southern residents to favor national health insurance. Hired workers were less likely than the unemployed to support national health insurance programs. Self-employed workers were more likely to favor having it.

Medicare Extension. Demographic and health factors account for differences in attitudes about extensions of Medicare. As expected, older respondents were more likely than younger ones to support extension of Medicare coverage to cover the costs of nursing home and home health care. Male respondents were more likely than females to support the extension of Medicare. As the chances of nursing home residence increase, the

Table 3
Factors Associated with Consumers' Opinion on Four Health Care Reform Proposals: Results of Ordered Probit
(n = 434)

Variables	National health insurance	Medicare extension	Nursing home insurance	Tax credit
Demographic:				
Age	-0.05 (0.02)**	0.04 (0.02)*	-0.002 (0.02)	0.02 (0.02)
Male	0.35 (0.22)	0.35 (0.21)*	-0.38 (0.25)	-0.04 (0.25)
Married	-0.09 (0.23)	-0.19 (0.23)	0.29 (0.26)	0.25 (0.28)
Education	-0.001 (0.04)	0.03 (0.04)	-0.004 (0.04)	0.04 (0.04)
White	-0.52 (0.25)**	-0.34 (0.24)	-0.33 (0.28)	0.24 (0.27)
Region				
Northeast	0.75 (0.30)***	0.02 (0.28)	0.46 (0.34)	0.40 (0.34)
Midwest	-0.40 (0.25)*	0.14 (0.25)	-0.32 (0.27)	0.17 (0.30)
West	0.37 (0.30)	0.01 (0.28)	0.15 (0.35)	-0.11 (0.37)
(South)				
Health status:				
self-rep. health				
excellent	0.55 (0.35)	0.17 (0.35)	-0.58 (0.40)	0.35 (0.44)
good	0.11 (0.28)	-0.27 (0.28)	-0.34 (0.33)	-0.21 (0.33)
(poor/fair)				
# medical cond.	0.06 (0.10)	-0.14 (0.10)	-0.13 (0.12)	-0.04 (0.12)
Mental health	0.06 (0.10)	-0.11 (0.10)	-0.14 (0.13)	-0.28 (0.13)
Social health	-0.16 (0.17)	0.03 (0.17)	0.22 (0.20)	0.16 (0.19)
Nursing home	-0.03 (0.13)	0.07 (0.03)**	0.08 (0.03)**	0.03 (0.04)
Health insurance:				
Government ins.	0.14 (0.28)	-0.14 (0.27)	0.20 (0.31)	-0.09 (0.32)
Postret. ins.	-0.17 (0.24)	-0.28 (0.23)	0.07 (0.26)	0.25 (0.28)
Supplement. ins.	0.02 (0.26)	0.36 (0.27)	0.05 (0.30)	0.43 (0.30)
Economic Resources:				
Income	1.65E-6 (3.91E-6)	3.41E-6 (4.31E-6)	-3.18E-6 (4.34E-6)	2.61E-6 (5.87E-6)
Other liquid asset	-3.15E-6 (2.43E-6)	4.18E-6 (3.21E-6)	4.46E-6 (3.05E-6)	8.55E-6 (5.84E-6)
Non-liquid asset	-3.99E-7 (4.10E-7)	-1.79E-7 (4.32E-7)	-9.04 E-7** (4.59E-7)	1.83E-7 (7.21E-7)
Pension	-0.12 (0.27)	0.18 (0.27)	0.23 (0.30)	0.15 (0.34)
Work-related:				
Employed	-0.61 (0.29)**	-0.12 (0.28)	0.09 (0.31)	0.31 (0.35)
Self-employed	0.54 (0.26)**	-0.23 (0.26)	-0.002 (0.30)	0.92 (0.33)***
Intercept 1	3.11 (1.85)	-1.85 (1.82)	1.20 (2.11)	0.01 (2.16)
Intercept 2	1.45 (0.12)	1.05 (0.09)	1.08 (0.12)	1.28 (0.15)

Note: Numbers in parentheses are standard errors.
* significant at .1, ** significant at .05, *** significant at .01

likelihood of supporting an extension of Medicare to cover nursing home and home health care also increases.

Nursing Home Insurance. The one health reform that has financial status as a significant determinant of preferences is nursing home insurance. As shown in Table 4, the likelihood of favoring a government subsidy from general tax revenues to make the cost of nursing home insurance more affordable to the average citizen increases as expectations of living in a nursing home rise. Those with high non-liquid assets were less likely to support government subsidized nursing home insurance.

Tax Credit. Only one variable was significant in the model of tax credit. Contrary to our expectation, being self-employed is negatively associated with the likelihood of supporting the tax credits for health insurance premiums.

Discussion

The current crisis in health care financing and delivery calls for both various incremental health care reforms to make it more cost-effective and equitable (Lundberg, 1991) and more radical reforms that lead to a national health insurance program (Fuchs, 1991). To enhance our understanding of consumers' preferences for changes in the health care system, this study identified profiles of consumers who favored various proposals for health care reform. Demographic factors, health status, financial status, and work-related factors shape opinions about health care reform. It was surprising to find that after controlling for these factors, health insurance status was unrelated to preferences for reform of our health care financing system. Thus, there are no differences in preferences for national health

reform between consumers who perceive their own insurance policies
are adequate and those whose policies are inadequate in meeting their personal health care needs. This finding intimates a global value system within the general community of health care consumers that requires further investigation.

The limited role of health status in shaping opinions about health care reform is also instructive. Proponents of the theory of adverse selection in insurance choice conclude that demand for health insurance is greater among those most in need of care, i.e., those whose health is greatly depleted or at significantly high risk of depletion (Phelps, 1992). We found that health status, measured by expectations of nursing home use only, significantly affects the desire for health care reform.
Extensions of Medicare and nursing home insurance are the only two types of health care reform that this measure of health status affects. Thus if consumers perceive they will need nursing home care, they favor focused reform, those that increase access to nursing home care with either full or partial federal subsidies.

It is important to emphasize the role of non-liquid assets as they relate to preferences for nursing home insurance. Persons with limited liquid or housing assets are most desirous of some type of nursing home insurance reform. The high cost of nursing home care and limited coverage by Medicare makes this service inaccessible to those with low income. Current reforms of Medicaid illustrate the risk this low income population faces. If the proposed legislation passes, this population risks loss of the families' housing to secure nursing home access.

If, as shown in Table 2, there is widespread support of national health care reform, why is reform so difficult in practice? Is the political process an obstruction to meeting community health needs? Are political representatives effective advocates for the general populace? Is the general populace inadequately informed about the implications for resource allocation when practitioners implement desired programs? Answers to these questions should clarify this apparent divergence between consumer preferences and health care reform outcomes.

References

Brook, R., Ware, J., Davis-Avery, A., Stewart, C., William, D., Williams, K. & Johnston, S. (1979). Overview of adult health status measures fielded in Rand's Health Insurance Study. Medical Care, 17(7), 1-54.

Fuchs, V. R. (1991). National health insurance revisited. Health Affairs, 10 (4), 7-17.

Greene, W. (1993). Econometric Analysis. New York, NY: Macmillan Publishing Company.

Grossman, E. (1994). Comparing the options for universal coverage. Health Affairs, 11, 283-287.

Haveman, J. (1995, September 23). House panel votes to end Medicaid: Block-Grant Plan is first step in GOP strategy to expedite passage of changes. The Washington Post, p. A01.

Juster, F. T. & Suzman, R.(1994). The health and retirement study: An overview. Health and Retirement Study Working Paper Series, Core paper No. 94-1001.

Long, C. & Rodgers, T. (1993). Managed competition estimates for policy making. Health Affairs, 12, 243-247.

Lundberg, G. (1991). National health care reform: An aura of inevitability is upon us. Journal of the American Medical Association, 265: 2566-2567.

Pepper Commission. (1994). Pepper commission health care access and reform act of 1991, H.R. 2535 S. 1177. Washington, DC: U.S. Government Printing Office.

Pianin, E. & Rich, S. (1995, September 23). Senate GOP offers plan to cut Medicare by $270 billion over seven years. The Washington Post, p. A04.

Pindyck, R. & Rubinfeld, D. (1991). Econometric Models & Economic Forecasts. New York, NY : McGraw-Hill, Inc.

Phelps, C. (1992). Health Economics. New York, NY: Harper Collins Publishers Inc.

Posey, G. (1995). Health insurance, Current Population Reports, (Series P23-189). Washington, D.C.: US Government Printing Office.

Endnotes

1. Assistant Professor, Dept. of Consumer Sciences & Retailing, Purdue University, 1262 Matthews Hall, West Lafayette, IN 47907-1262.
2. Professor, Economics.
3. Graduate Student, Consumer Sciences & Retailing.
4. See Rand Corporation's health insurance study (Brook et. al., 1979)

Long-Term Care Insurance: Is State Regulation Adequate?

Private insurance is one option to prepare for the risk of catastrophic long-term care expenses. However, the product as well as the sales and marketing practices associated with it have been highly criticized. One frequently recommended remedy is stronger state regulation. This paper examines state adoption of the National Association of Insurance Commissioners' models in long-term care insurance legislation and regulation.

Brenda J. Cude, University of Illinois[1]

In a *USA Today*/CNN/Gallup poll of 1,011 adults, 66% worried about being able to pay for long-term care for themselves or a relative (Keen & Goodavage, 1993). With nursing home costs averaging $35,000 per year (Congressional Budget Office (CBO), 1991) and even part-time home health care costs of $5,000 to $10,000 annually (Doyle, 1992), it is not surprising that people are concerned.

Private long-term care insurance (LTCI)[2] is one way to prepare for the financial risk of catastrophic LTC costs. A little-known product until the late 1980s, the number of policies in force more than doubled from 1987 to 1993 (Families USA, 1993; Van Gelder & Johnson, 1991). Yet only about 4% of the elderly have purchased LTCI (Cohen, Kumar, McGuire, & Wallack, 1991) and it pays only one to two percent of aggregate nursing home care costs (Pauly, 1990; Pepper Commission, 1990).

There may be several plausible explanations for the relatively low demand for LTCI. However, a common one is the belief that, due to restrictions and limitations, policies may not pay claims. Although states have passed regulation and/or legislation to address these concerns, critics claim that state action has been inadequate.

The purpose of this research was to determine the rate at which states have incorporated NAIC standards in legislation/regulation of LTCI between 1986 and 1995. The NAIC Long-Term Care Model Act and Regulation were chosen as the standard for comparison since they were written specifically to serve as models for states. Since reviewing the insurance legislation and regulation of every state appeared to be an insurmountable challenge, the author surveyed state insurance departments instead. This paper discusses the results of those surveys as well as the issues surrounding federal versus state regulation of LTCI.

Review of Literature

Consumers will be unlikely to buy LTCI if they believe it to be an inferior product. In the 1980s problems were identified in the product as well as how it was marketed; state regulation was considered inadequate to address problems. Criticisms of the product continue in the 1990s even though many companies changed both their policies and their sales practices.

Policy Deficiencies

A major concern of critics of LTCI has been that the policies sold are so restrictive that consumers rarely qualify to collect benefits. Rice, Thomas, and Weissert (1989) concluded that due to policy restrictions, 61% of policyholders who entered a nursing home would not collect any benefits from LTC policies marketed in 1988. Studies consistently identified significant restrictions in LTC policies marketed in the 1980s, including provisions requiring prior hospitalization, provisions requiring prior skilled care to receive other levels of care, and exclusion of coverage of Alzheimer's disease (Rice, Thomas, & Weissert, 1989; U.S. GAO, 1987; Wiener, Ehrenworth, & Spence, 1987).

A related concern about 1980s LTC policies was that they contained significant benefits limitations. Frequently-cited problems included policy maximums (for example, limiting coverage to less than four years), coverage of skilled care only, and minimal coverage for home health care. Lack of inflation adjustments and high premiums were also significant concerns (Rice, Thomas, & Weissert, 1989; U.S. GAO, 1987; Wiener, Ehrenworth, & Spence, 1987).

Sales and Marketing Abuses

In 1989, the U.S. GAO (1989) identified the complaints state received most frequently about LTCI as sales agents misrepresenting coverage, insurers' reported failure to pay claims, and false or deceptive advertising or sales practices. Critics regularly cited as major concerns post-claims underwriting (companies decide whether a person's health status disqualifies them for coverage after a claim is filed rather than when an application is processed) and cancellation of policies due to a change in health status or age (Rice, Thomas, & Weissert, 1989; U.S. GAO, 1987; Wiener, Ehrenworth, & Spence, 1987). *Consumer Reports'* ("An empty promise," 1991, p. 427) investigative reporters described LTCI agents' sale presentations as "misleading and confusing." And, in 1992, the U.S. GAO (1992) reported that, except for identifying Medicaid recipients, companies do little to prevent the sale of LTC policies to low-income elderly.

Regulation of LTCI

Critics have blamed many of the shortcomings of LTCI on inconsistent and inadequate regulation. Since insurance is regulated at the state rather than the federal level, the National Association of Insurance Commissioners (NAIC) develops model insurance legislation and regulation to facilitate a certain degree of uniformity among the states.

The NAIC first developed models for LTCI in 1986. Due to the industry's rapid growth, NAIC has continually revised its LTC models and the models have increasingly moved beyond provisions that insure consumers' basic rights in LTCI. For example, the first model provisions prohibited policy cancellations because of the policyholder's age or deteriorating health, required insurers to give policyholders an outline of coverage and a 30-day free look period in which to return the policy for a full refund, and limited to six months the period for exclusion of coverage of preexisting conditions. Only one 1986 provision sought to expand the definition of what LTCI had been up until that time -- primarily insurance that paid for stays in a skilled nursing home following hospitalization. That NAIC provision prohibited LTCI from offering coverage for skilled care only.

With each revision in the NAIC models, however, new provisions more often focus on standards related to sales abuses and expanding coverage and/or removing restrictions which limit coverage. For example, the 1990 NAIC (1990) amendments covered three areas: post-claims underwriting, home health care, and inflation protection. In 1991, NAIC (1991) added standards related to marketing LTCI.

Uniform adoption of the NAIC models into state laws and regulations throughout the U.S. could force all companies to improve their products as well as their marketing practices. However, the NAIC models are unlikely to have a significant impact on the industry if states don't adopt and enforce them. While some companies may not wait for state legislative action before revising policies to comply with the NAIC models, others no doubt would.

How rapidly have states adopted the NAIC models? The NAIC tracks state action and reported that in 1989 18 states had in place legislation that incorporated the model; another 11 had passed related legislation. By 1995, 43 states had adopted legislation based on the NAIC model; another seven had passed related legislation. Regulations have been written at a somewhat slower rate. In 1989, only eight states had regulations based on NAIC's model but five more had pending regulations. By 1995, 36 states had regulations based on NAIC's model; seven other states had regulations partially based on the model (NAIC, 1989, 1995).

Data Collection Methods

The GAO (1989) surveyed state insurance departments in May 1988 to assess the extent to which states had adopted legislation and regulation implementing the NAIC LTCI standards. The GAO's primary data sources were mailed surveys and legislative materials returned by state insurance departments. All but one state (Idaho) responded. The author requested similar data from state insurance departments in 1989-90 and again in 1991 by mailing surveys composed primarily of open-end questions. A total of 48 states responded in both survey years. To create the 1995 data, the author used data collected by the NAIC's model reporting service, supplemented by telephone surveys of state insurance department officials.

Results

Although the NAIC models contain numerous provisions, the GAO study concentrated on seven. Table 1 reports the status of state legislation/regulation on those seven provisions as determined by the GAO in 1988 and by the author in 1989-90, 1991, and 1995. Table 1 also reports for 1991 and 1995 the author's assessment of state action on three provisions added to the NAIC models in 1990.

The provision most rapidly incorporated into most states' legislation/regulation is a "free look" period. Within a year of the NAIC adding the requirement to its

Table 1
State Adoption of Selected NAIC Model Act and Regulation Provisions

NAIC Model Act and Regulation Provision and Year Approved	States Adopting Legislation/Regulation From NAIC Model							
	1988[a] (n-25)		1989-90 (n=48)		1991 (n=48)		1995 (n=51)	
	n	%	n	%	n	%	n	%
Cannot offer coverage for skilled care only (1986-87)	11	44%	28	58%	37	79%	46	90%
Must offer a 30-day "free look" period (1986-87)	19	76	37	77	46	98	46	90
May not exclude Alzheimer's Disease (1987)	7	28	29	60	39	83	48	94
Individual policies must have expected loss ratio of 60% (1987)	18	72	25	52	33	70	37	72
Individual policies must be guaranteed renewable or noncancellable (1987)	6	24	20	42	34	72	45	88
Cannot require prior hospitalization to be eligible for benefits (1988)	4[b]	16	26	54	32	68	46	90
Cannot require a higher level of nursing home care to qualify for a lower level of care (1988)	2[b]	8	24	50	31	66	39	76
Should determine the applicant's health condition before writing the policy (1990)	--	--	--	--	11	23	39	76
Must meet minimum standards for home health care (limit restrictions on eligibility) (1990)	--	--	--	--	16	34	41	80
Must offer inflation protection option (1990)	--	--	--	--	16	34	41	8

[a]Source: U.S. GAO, 1989.
[b]Not in the NAIC model at the time of the survey.

model, three-fourths of all reporting states had a requirement that consumers must have at least 30 days in which to examine a policy and return it for a full refund. Virtually all of the states (46) had adopted the provision by 1991. Acceptance of this provision may be high since this protection is included in the general insurance laws of some states.

Other provisions were not incorporated into state legislation/regulation as rapidly in the first year. In 1988, one year after the provision was added to the NAIC model, less than one-third of states specifically prohibited policies from excluding Alzheimer's disease from coverage. However, by 1991, 83% included that provision, important because estimates are that as many as 50% of nursing home residents may have Alzheimer's disease (U.S. GAO, 1987). By 1995, 48 states prohibited exclusion of Alzheimer's disease. Compared to 1988, in 1991 over five times as many states required policies to be guaranteed renewable or noncancellable. In 1989-90, just one year after the provisions were added, at least one-half of states already prohibited conditioning eligibility of benefits on prior hospitalization or eligibility for care at the intermediate or custodial level on prior receipt of skilled care. Rice, Thomas, and Weissert (1989) found that either restriction reduced a policyholder's chances of collecting benefits from a LTC policy by one-third. NAIC's restriction on prior hospitalization as an eligibility standard had been accepted in 46 states in 1995; however, only 39 states addressed conditioning eligibility of benefits on having received a higher level of institutional care.

While initial acceptance of the three 1990 NAIC model provisions was slow, most states had incorporated them by 1995. In 1991, just over one-third of states had added the 1990 NAIC provisions on home health care and inflation protection compared to 80% in 1995. Only 23% had incorporated a provision on post-claims underwriting in 1991 but the rate jumped to 76% by 1995. These first-year adoption rates are lower than those for any of the 1987 or 1988 provisions. However, one might expect more opposition within states to newer NAIC provisions since they focus on raising the standard of conduct for companies and expanding the scope of coverage of LTCI. Also, states may simply have had difficulty in changing their state legislation/regulation as rapidly as NAIC has changed its models.

Summary, Limitations, and Implications

Like most research, this paper has several limitations. It may not provide an accurate picture of the

protections available to purchasers of LTCI. Even if states *base* their legislation/regulation on the NAIC models, the final product may not include all of NAIC's provisions. For example, the Health Insurance Association of America (HIAA, 1993) reported that of the 35 states that had written home health care regulations, 27 differed in some way from the NAIC standard. Also, legislation/regulation is not effective if it is not enforced. AARP (1992b) concluded that many states have only limited capacity to regulate LTCI; they cited inadequate staff and data reporting and management information systems. In most states, it is rare that staff are identified with LTCI as their sole responsibility.

The data indicate that states have included some NAIC model provisions more rapidly than others but that the majority of states have incorporated the provisions into their state legislation/regulation within three to four years. Is that an acceptable delay? The answer no doubt depends on one's perspective. A consumer who searches in vain for a product to meet his/her needs or buys a policy that offers only limited coverage or doesn't pay legitimate claims would no doubt describe state action as too slow. Insurers who must limit the number of states in which they sell because of differences across states or who must modify their policies with each new state action would probably take a different point of view.

Clearly NAIC standards have the greatest impact when they are promptly incorporated into many states' legislation and regulation with little variation. Since the evidence suggests that is not necessarily the result, discussion of federal regulation is appropriate. Also, because Medicare supplemental insurance and LTCI are both marketed primarily to the elderly, parallels between the two are inevitable. After over 20 years during which Medicare supplemental insurance was regulated primarily at the state level, in 1991 federal legislation added significant new provisions to protect consumers from sales and marketing abuses (AARP, 1992a).

Thus, one perspective is that continued state regulation of LTCI simply postpones inevitable federal regulation. However, a forceful argument against federal legislation is that LTCI is a relatively new product; Medigap policies have been marketed for over 20 years compared to less than 10 for LTCI. If the market for LTCI is still evolving, establishing federal standards prematurely might limit the market's potential. And, compared to state regulation, federal regulation might prove more difficult to change later.

However, federal legislation to address sales and marketing abuses in LTCI may not be premature. Sales and marketing abuses have plagued the senior insurance markets through the years, no doubt dampening consumer demand. Weak and/or inconsistent state regulation of sales and marketing abuses can create an unfair advantage for some companies and cause others to leave the market or to limit the number of states in which they sell. Thus, uniform federal regulations that address such concerns as disclosure of policy information, cancellability of coverage, free look provisions, expected loss ratios, and marketing abuses may be in the best interest of both consumers and the industry. Standards for specific LTCI policy provisions such as suitability and levels of care covered could continue to be shaped through a combination of state action based on NAIC standards and product innovations by progressive insurance companies.

Appendix

The following summarizes the issues addressed in NAIC's Long-Term Care Insurance Model Regulation (641-1) and Long-Term Care Insurance Model Act (640-1). The complete models are available from NAIC, 120 W. 12th St., Suite 1100, Kansas City, MO 64105.

Long-Term Care Insurance Model Act Provisions

- Definition of long-term care insurance.
- Disclosure and performance standards for long-term care insurance.
- Cannot cancel, nonrenew or otherwise terminate on the grounds of age or health.
  - Cannot create a new waiting period if policy is converted or replaced by policy from same company.
  - Cannot provide coverage for skilled care only or significantly more coverage for skilled care than for other forms of care.
  - Waiting period for coverage of preexisting conditions cannot be longer than six months.
  - Cannot condition eligibility for benefits on prior hospitalization or receipt of a higher level of institutional care.
  - Cannot condition eligibility for benefits other than waiver of premium, post-confinement, post-acute care, or recuperative benefits on a prior institutionalization requirement; cannot require more than 30 days of institutionalized care; cannot require admission for the same or related conditions 30 days after discharge.
- Shall have the right to return the policy within 30 days for a free refund.
- Must provide an outline of coverage at time of initial solicitation.
- Must deliver a policy summary when deliver policy.

- Policy must provide for nonforfeiture benefits.
- Insurer may rescind a policy that has been in force less than six months or deny an otherwise valid claim with evidence of material misrepresentation by the consumer on the application.
- Insurer may rescind a policy or deny a claim for a policy in force more than six months but less than two years with evidence of misrepresentation both material to acceptance for coverage and pertaining to the condition for which the benefits are sought.
- Policies in force more than two years are not contestable without evidence the consumer knowingly and intentionally misrepresented relevant facts related to his/her health.
- If the insurer has paid benefits, the benefit payments may not be recovered if the policy is rescinded.

Long-Term Care Insurance Model Regulation Provisions

- Policy must be guaranteed renewable or noncancelable.
- Definition of activities of daily living, acute condition, adult day care, bathing, cognitive impairment, continence, dressing, eating, hands-on assistance, home health care services, mental or nervous disorder, personal care, skilled nursing care, toileting, transferring.
- Policy may exclude only the following: preexisting conditions; mental or nervous disorders but not including Alzheimer's Disease; alcoholism and drug addiction; illness, treatment or medical condition from war, participation in a felony, riot or insurrection, service in the armed forces, suicide or attempted suicide, aviation; treatment provided in a government facility; services provided by the immediate family; services for which there is normally no charge.
- Standards about conversion or continuation of group policies to individual coverage.
- Premium rate restrictions, including a statement that the initial premium shall not increase during the first four years a policy is in force; after that, if the insured is age 80 and over, premiums may not increase more than 10% in aggregate during any five-year period; increase is limited to 15% for insureds age 65 to 80 and 25% for those under age 65. Premiums cannot increase due to increasing age after age 65 or because of the duration the insured has been covered.
- Standards related to unintentional lapse of policy; at issue of policy, insured must identify at least one person to receive notice of lapse or termination of policy or waive that privilege; insured and designee must receive a notice at least 30 days before cancellation.
- Insured has the right to reinstate coverage after unintentional lapse if the insurer receives proof of cognitive impairment or loss of functional capacity within five months of lapse.
- Required disclosures: renewability, riders and endorsements, payment of benefits, limitations, disclosure of tax consequences, and benefit triggers.
- Prohibition against post-claims underwriting; prior to issuing a policy to an applicant age 80 or older, insurer must receive a report of a physical exam, or an assessment of functional capacity, or an attending physician's statement or copies of medical records.
- Minimum standards for home health and community care benefits: Cannot limit or exclude benefits by requiring that the insured must need skilled care, must first receive nursing services, by limiting eligible services to those provided by registered nurses or licensed practical nurses, by excluding coverage for personal care services, by requiring that the insured have an acute condition, by limiting benefits to services provided by Medicare-certified agencies or providers, or by excluding coverage for adult day care services. If provided, home health or community care services must equal at least one-half of one year's coverage available for nursing home benefits.
- Policies must offer inflation protection no less favorable than one of the following: increase benefit levels annually so that increases are compounded no less than 5%, guaranteed the right to periodically increase benefit levels without evidence of insurability by no less than the difference between the existing benefit and that benefit compounded annually at a rate of at least 5%. Inflation protection must continue without regard to age, claim status, or claim history.
- Application form must include designated questions designed to learn whether the consumer has another long-term care policy in force; if the policy replaces one in force, the agent must give the consumer a notice regarding replacement of coverage.
- Expected loss ratio should be at least 60%.
- Companies must establish fair marketing procedures; twisting, high pressure sales tactics, and cold lead advertising are prohibited.
- Standards regarding associations marketing insurance to their members.
- Insurers must develop suitability standards to determine whether the policy is appropriate for the needs of the consumer and train its agents to use the

standards. The agent must return a Long-Term Care Personal Worksheet with information about the consumer's income and assets with the application for coverage.

- Definitions of nonforfeiture benefits and how they are to be calculated when a policy lapses; the minimum must be not less than 30 times the daily nursing home benefits at the time of the lapse. The nonforfeiture benefits must start no later than the end of the third year following the issue date unless it is an attained age rating policy and then it must start by the tenth year.
- A policy shall condition payment of benefits on ability to perform activities of daily living (ADL) and cognitive impairment. Eligibility shall not be more restrictive than requiring a deficiency in three of the ADLs or cognitive impairment.
- All applicants must receive a long-term care insurance shopper's guide.

References

American Association of Retired Persons (AARP). (1992a). Medigap: Medicare supplement insurance, a consumer's guide. Washington, D.C.: Author.

AARP Public Policy Institute. (1992b, January). State variation in the regulation of long-term care insurance products. Washington, D.C.: AARP.

Cohen, M.A., Kumar, N., McGuire, T., & Wallack, S.S. (1991, January). Long-term care financing proposals: Their costs, benefits and impact on private insurance. Washington, D.C.: Health Insurance Association of America.

Congressional Budget Office (CBO). (1991, June). Policy choices for long-term care. Washington, D.C.: U.S. Government Printing Office.

An empty promise to the elderly. (1991, June). Consumer Reports, 425-442.

Doyle, K.O. (1992, July). Long-term health care, voluntary self-impoverishment, and family stress. American Behavioral Scientist, 35(6), 803-808.

Families USA Foundation. (1993, February). Nursing home insurance: Who can afford it? Washington, D.C.: Author.

Health Insurance Association of America. (1993, December). Long-term care insurance: State compliance with NAIC model. Washington, D.C.: Author.

Keen, J., & Goodavage, M. (1993, May 13). Elder care: A crushing burden. USA Today, pp. A1-A2.

National Association of Insurance Commissioners (NAIC). (1989). Long-term care insurance model act and regulation. Kansas City: Author.

NAIC. (1990). Long-term care insurance model act and regulation. Kansas City: Author.

NAIC. (1991). Long-term care insurance model act and regulation. Kansas City: Author.

NAIC. (1995). Long-term care insurance model act and regulation. Kansas City: Author.

Pauly, M.V. (1990). The rational nonpurchase of long-term care insurance. Journal of Political Economy, 98 (1), 153-168.

The Pepper Commission, U.S. Bipartisan Commission on Comprehensive Health Care. (1990, September). A call for action. Washington, D.C.: U.S. Government Printing Office.

Rice, T., Thomas, K., & Weissert, W. (1989, August). The impact of owning private long-term care insurance policies on out-of-pocket costs. Washington, D.C.: AARP Public Policy Institute.

U.S. GAO. (1987, May). Long-term care insurance: Coverage varies widely in a developing market. Washington, D.C.: Author.

U.S. GAO. (1989, April). Long-term care insurance: State regulatory requirements provide inconsistent consumer protection. Washington, D.C.: Author.

U.S. GAO. (1992, March). Long-term care insurance: Better controls needed in sales to people with limited financial resources. Washington, D.C.: Author.

Van Gelder, S., & Johnson, D. (1991, January). Long-term care insurance: A market update. Washington, D.C.: Health Insurance Association of America.

Wiener, J.M., Ehrenworth, D.A., & Spence, D.A. (1987). Private long-term care insurance: Cost, coverage, and restrictions. The Gerontologist, 27 (4), 487-493.

Endnotes

1. Professor and Extension Specialist, Department of Agricultural and Consumer Economics, 305 Mumford Hall, 1301 W. Gregory Drive, Urbana, IL 61801.
2. For this paper, the definition of LTCI does *not* include "living benefit" insurance policies which pay death benefits prior to death to individuals who become seriously or terminally ill.

Just Say Yes: The Consumer Buycott As an Organizational Initiative

A survey of the consumer research literature revealed few instances of "consumer buycotts, " i.e., efforts by consumer activists to induce shoppers to buy the products or services of selected companies in order to reward these firms for behavior consistent with the goals of the activists. The few cases did however prompt the development of a conceptual framework for understanding the place of buycotts on a consumer activist agenda.

Monroe Friedman, Eastern Michigan University[1]

The origins of this paper go back to the early postwar efforts of activists to advance the consumer interest by protesting the sharp rise in retail food prices which followed the lifting of wartime price controls (Stein, 1975). From that time until now, the most common form of organized consumer activism employed in the United States has been the consumer boycott, with literally hundreds having been initiated in the last few years (Putnam, 1993). In the light of the popularity of boycotts it may come as a surprise that recent research has revealed only modest evidence of success for these initiatives (Friedman, 1991).

What some activists see as a promising alternative to consumer boycotts is their "flip side," namely efforts called "consumer buycotts" which attempt to induce shoppers to buy the products or services of selected companies in order to reward them for behavior which is consistent with the goals of the activists. While boycotts often aim to punish firms for past misdeeds, buycotts commonly endeavor to reward them for past good deeds, and the reward approach is generally favored by behavioral theorists and practitioners (e.g., Bandura, 1969, 1987).

Although buycotts have not enjoyed the popularity of their boycott counterparts among consumer activists, given the limited success of boycotts and the behavioral science promise of buycotts, this research project had as its goal an extensive study of consumer buycotts with recommendations concerning how this tactic might be more effectively used by activists.

Project Procedures and Results

To study consumer buycotts a three-step procedure was planned consisting of identifying such initiatives through a literature review, conducting interviews with their principals, and analyzing the data generated by the interviews. Unfortunately this plan produced few instances of documented buycott campaigns. However, while the literature on buycott initiatives proved to be fragmentary, what was found, in conjunction with the much more comprehensive material available on boycotts and other consumer initiatives (e.g., Friedman, 1991; Smith. 1990), did spark the first steps in the development of a conceptual framework for buycotts which may be of interest to scholars as well as practitioners.

Perhaps the most fundamental distinction drawn by this framework is between nominal buycotts and actual buycotts. Nominal buycotts simply use published lists or seals of approval to identify available products, services and/or retail firms that the buycotters are recommending to consumers. Lists may take such forms as green pages (ecologically-oriented firms recommended by environmental groups such as Co-op America), "best buys" (product brands and models recommended for purchase by Consumer Reports and other consumer testing publications), and "cruelty-free" products (product brands and models for, say, cosmetics which have been developed by industry using a process which does not endanger the health or well-being of laboratory animals).

Seals of approval are also diverse in nature including traditional union labels, the RUGMARK seal of the National Consumers League indicating that a carpet has not been made with child labor, and various environmental seals of approval, such as Green Cross and Green Seal.

Actual buycotts go beyond such published lists and seals of approval to launch organized campaigns for the purpose of persuading consumers to purchase the one or more items identified by the buycott. The Buy American campaign is an example of such as actual buycott; this campaign generated television commercials featuring such celebrities as Bob Hope highlighting "Made in America" labels on items of clothing in a retail

Table 2
Concepts measure characteristics of policy network

* Who started the network, when, in what sequence (**anchorage**)?
* How many, and who, are in the network (**size**) at any given point in time?
* Of those that could be in the network, how many actually are (**density**)?
* Of those who are in the network at any given time, to what degree are they linked with each other (**connectedness**)?
* How long did the network last? Did the combination of actors stay the same or change (**stability**)?
* How aware were the policy network members of each other's activities (**knittedness**)?
* How did stakeholders feel about remaining and interacting in the policy network over time (**cohesiveness**)?

Anchorage

Who started the network, when, in what sequence? These are the questions related to anchorage. As regards origins, government was the first to join the EFTS policy network followed by business and then consumers (very close to each other). Consumer and business association membership never lapsed in the policy network once they entered but government departments changed quite often; they entered and left quite frequently with an average of two departments or agencies present at any one time. Interestingly, once a government department left the network, it did not reenter (except for the Department of Finance which has to be present when there is potential legislation involved).

Government had the highest incidence of being in the network followed by business and then, the consumer. When there were only two stakeholders present, it was *always* business and government. The number and identity of government departments and agencies fluctuated continually over the twenty year time span with an average of two present from a possible eight. The number of business associations eventually numbered seven, with each one joining incrementally (one at a time) and never leaving after joining. The average number of business associations in the EFTS policy network at any one point in time was four and their specific identity was quite consistent.

The g-c link was in existence every year beyond 1972 but with continually changing government departments and agencies. The c-b link began later, in 1975, and was quite cyclical in nature probably because there was only one consumer association but seven business associations. The g-b link was in existence every year of the life of the EFTS policy network but was characterized by different government agencies and different business associations.

Size

During the life of the EFTS policy network, for almost three quarters of the time, all three aggregate stakeholders were present (consumer, business and government). At the constituent level there was an average of 8.5 stakeholders in the policy network in any given year but never were all sixteen there and seldom with the same compliment of constituent stakeholders (eg. never the exact same business organizations or government departments). The policy network started out with two stakeholders, moved through a fourteen year period where the size of the network fluctuated between 8-10 members and culminated with 13 stakeholders during the last three years.

The size of the network fluctuated as it evolved but the general pattern was to increase as time passed. The pattern was to start small, basically plateau with half of the possible constituents present for a lengthy period of time, then increase towards the end of the life of the policy network with a completely different compliment of constituent stakeholders. In short, the size of the network was more stable during the last third of the life of the policy network than it was during the first two thirds, especially as regards the identity of the constituents. This fluctuation in the size of the network occurred partially due to the changing government compliment and the incremental nature of the business constituent.

Density

Density is the proportion of actual to potential dyadic relations in the network and is expressed as an indices ranging from 0-1. The closer to one the higher the density. The density of the policy network started out sparse and increased as time went by. The policy network was moderately dense most of the time with the average density being .71. In lay terms this means that, of all of the possible nine dyadic links which could have been in place, 71% percent of them existed at some point in time over the twenty year life span of the policy network. As regards the proportion of dyads which were interacting, collectively and on a yearly basis, the network density increased as time went by, starting out sparse and increasing to the point that during the last third of the life of the policy network, it was completely dense (1.00); that is, all three aggregate dyads were in

the network. The b-g link was most dense, followed by the c-g link and then the c-b link (which was the most sparse). The missing link, regardless of the network dimension being examined, is the consumer-business link. This held constant for the duration of the policy network and for every variable.

Connectedness

This concept refers to: "of those who are in the network, to what degree are they linked (strongly, unilaterally, weakly or disconnected (not linked))"? Knowing this would give some indication of how readily information and resource exchange can flow between the stakeholders. The network gained connectedness as it evolved, more so towards the end of the time frame; the network was predominately strongly connected (38% of the time). It was unilaterally connected 29% of the time (meaning that each major dyad was in contact but that not all communication was reciprocal). The remainder of the time it was either weakly connected (24% of the time) or diffuse (9% of the time). The network was weakly or unilaterally connected during the first two thirds and strongly connected during the last third of the life span of the policy network. As with other variables, the missing link in the unilateral (diffuse) years is the c-b link; again, when a link was missing at any point in time, it was almost exclusively the c-b link. Even when the policy network was weakly connected, it meant that the business stakeholder(s) did not interact with the consumer organization in any fashion during that specific year.

Stability

Stability refers to the length of time that stakeholders consistently remain in the policy network. The network was *moderately stable* most of its life span; that is to say that, there was some fluctuation in the composition of the dyadic memberships but the aggregate network (consumer-business-government) continued to exist and function, predominately with multi-dyadic links. Over a twenty year time frame, there were collectively nine years when there was incidence of the same collection of stakeholders in the policy network (43% of the time) but never consecutively. Conversely, 57% of the time, the population of the policy network was not the same.

This stability of aggregate membership and fluctuation in constituent memberships (in conjunction with predominance of multi-dyadic links) is again strong evidence of a moderately stable, dynamic network. Furthermore, the stability of the network (the length of time that stakeholders consistently remained in the policy network) increased as time evolved. The policy network was very stable during the last third of its life span and moderately stable during the first two thirds. As with other variables, the g-b link was the most stable, followed by the g-c link and finally the b-c link.

Knittedness

For the purposes of this analysis, knittedness refered to the awareness of each other's presence in the policy network and their activities. Indicators of the awareness of each others activities included sending direct communications to each other and/or referring to each others work or activities. The more relationships that exist, the more closely or tightly knitted the network and vice versa. The network was predominately tightly knitted. It fluctuated between moderately and tightly joined during the first two thirds and, finally, was consistently tightly joined during the last third of the life span of the network. This pattern (fluctuation between moderate and tight, culminating in tight) suggests that most stakeholders were very aware of each others activities in the network and increasingly so as the EFTS policy network evolved. This is the preferred mode of operation since it ensures continual exchange of resources, information, positions on issues and the like.

Cohesiveness

Cohesiveness has been defined as the desire to stay in the network. It was proposed that the fact that stakeholders were making referrals about or directly communicating with others implied that they were making an effort to maintain some degree of contact with that stakeholder; hence, they were contributing to the cohesiveness of the policy network. From an aggregate perspective (consumer, business and government), the overall cohesiveness of the network was strong 79% of the time indicating prevailing desire to stay in the network. As regards each major stakeholder, consumer and business were strongly cohesive (inclined to maintain relationships using both direct communications and referrals to other's work) while government cohesiveness was split between strong and implied (just direct communications). This could be explained by the frequent changing of actual government departments in the policy network.

Especially, the network was strongly cohesive from 1982 onward (last 10 years). The network exhibited predominately implied cohesiveness in the early years during which the policy network was evolving (54% of the time actors were making referral to others but had no direct contact). As time went by, stakeholders were more and more inclined to deal directly with each other. Compared to an overall network cohesiveness (desire to stay in the network) of 71%,

business was the one most likely to be in strongly cohesive relationships (57% of the time they made referrals to others *and* had direct contact). Consumers had the highest probability of being described as being in diffuse relationships during the evolution of the policy network (29% of the time they were not referring to or contacting anyone) Government was most inclined to make referrals only (43%). Each dyadic link had a different profile for cohesiveness with business-government being the most cohesive. While the b-g and g-c links was predominately strongly cohesive (b-g more so that g-c), the c-b link was diffuse.

Summary

The network primarily consisted of varying combinations of one consumer association, seven business associations and eight government departments or agencies. It was primarily highly dense (71%), strongly cohesive (71%), strongly connected (38%), tightly knitted (65%), and moderately stable (43%). This means, respectively, that stakeholders predominately wanted to remain in the network and continue to maintain relationships, did so in strongly connected and tightly knitted contacts (direct communications and referrals), with links characterized by fluctuation in constituent memberships but multi-dyadic in nature. Network size, density, knittedness, cohesiveness, connectedness and stability all increased noticeably in the latter half of the life of the policy network. This is indicative of a marked improvement in the reciprocal flow of information, an increased awareness of the positions of competing interests, an increased capacity and degree of activity to advance one's own interest, and an enhanced communication channel and political exchange process. Ultimately, the EFTS policy network consolidated into a triad of 13 actors (consumer, business and government) in 1992. They collectively arrived at a Voluntary Code of Conduct for EFTS of which all aggregate stakeholders were signatories ("Canadian code", 1992).

Conclusions and Implications

Using the social network approach to study the phenomena of consumer policy development has been remarkably productive. One is reminded that a network is a construct imposed on a phenomena by an investigator so as to examine relationship development and the character of changing network configurations.

This analysis has confirmed that, in spite of reservations from stakeholders who claimed that there was no network, there was a network for the EFTS policy issue and it had a unique and fluctuating character. The social network perspective provided concrete shape to a nebulous, multiple decade process. Given that an EFTS network did emerge and had a dynamic existence, an appreciation of the fluctuating reconfiguration of this network sheds insights into the policy development for other consumer issues. The interests of all participants could be advanced if they were aware of the changing properties of a policy network.

The social network perspective: (a) validates the existence of a consumer policy network; (b) affords a new way to mentally and tactically perceive the consumer policy process; (c) reduces ambiguity and adds an element of certainty; (d) confirms the necessity of managing relationships as policy develops; (e) substantiates the requirement of a consortium of tactics and strategies to deal with changing actors over time; (f) provides respect for the divergent nature of the major policy dyadic links; (g) empowers stakeholders as regards their influence in the policy process; and, (h) builds foundations for future collective actions to develop policy for other issues or as follow up for the issue at hand.

With certainty, these findings provide sustenance to the nuances of the consumer policy phenomena, previously only described anecdotally. This anecdotal stance has often been superseded by conventional attention to the attributes to the policy, the organization or the person, never the relationships or links between stakeholders. Belobaba (1985) challenged us to shift our focus so that the complexities of modern consumer policy making could be better understood; a network perspective facilitates transforming our approach to consumer policy. Venkatesh and Burger (1984) recently advocated that we gain an appreciation of the broad relationships that lie *behind* the regulatory process; a social network approach to consumer policy enables us to embrace this challenge. Indeed, once a relatively stable policy network configuration forms, it becomes a fact of political life and must be taken into account (Knoke, 1990). The social network approach allows us to 'see' the evolutionary structure of consumer policy networks. We are better equipped to appreciate that interacting stakeholders are engaging in relational exchanges that need to be managed and nutured as their roles and interests continue to change and be challenged in today's dynamic, global marketplace.

References

Barnes, J.A. (1969). Graph theory and social networks: A technical comment on connectedness and connectivity. Sociology, 3, 215-232.

Belobaba, E.P. (1985). The development of consumer protection regulation: 1945-1984. In I.Bernier & A. Lajoie (Eds.), Consumer protection, environmental law, and corporate power (pp.1-88). Toronto, ON: University of Toronto Press.

Boddewyn, J.J. (1985). Critique of the papers by Seymour, Pandya, Mattsson and Reve-Stern. In N. Dholakia & J. Arndt (Eds.), Changing the course of marketing: Alternative paradigms for widening marketing theory (pp.301-307). Greenwich, CN: JAI Press.

Brander, J.A. (1988), Government policy towards business. Toronto, ON: Butterworths.

Canadian code of practice for consumer debit card services. (1992, May 1). Ottawa, ON: Consumer and Corporate Affairs Canada, Electronic Funds Transfer Working Group.

Coleman, W., & Skogstad, G. (1990). Policy communities and public policy: A structural approach. Mississauga, ON: Copp Clark Pitman.

Consumer and Corporate Affairs Canada. (1992). The marketplace in transition: Changing roles for consumers, business and government? (Cat No. RG 23-93/1992E). Ottawa, ON: Author.

Forbes, J.D. (1987). A consumer policy framework: Recent research. In V.L. Hampton (Ed.), Proceedings of the American Council on Consumer Interests (pp.295-301). Austin, TX.

Harris, R.G., & Carman, J.M. (1983, Spring). Public regulation of marketing activity: Part I: Institutional typologies of market failure. Journal of Macromarketing, 3, 49-58.

Harris, R.G., & Carman, J.M. (1986, Spring). Public regulation of marketing activity, Part III: A typology of regulatory failures and implications for marketing and public policy. Journal of Macromarketing, 6, 51-64.

Hutt, M.D., Mokwa, M.P., & Shapiro, S.J. (1986). The politics of marketing: Analyzing the parallel political marketplace. Journal of Macromarketing, 50, 40-51.

Karlinsky, M. (1987). Changing asymmetry in marketing. In A.F. Firat, N. Dholakia & R.P. Bagozzi (Eds.), Philosophical and radical thought in marketing (pp.39-55). Toronto, ON: D.C. Heath, Lexington Books.

Knoke, D. (1990). Political networks: The structural perspective. New York: Cambridge University Press.

Knoke, D., & Kuklinski, J.H. (1982). Network analysis. London, England: Sage.

Knoke, D., & Kuklinski, J.H. (1991). Network analysis: Basic concepts. In G. Thompson, J. Frances, R. Levacic & J. Mitchell (Eds.), Markets, hierarchies and networks (pp.173-182). London: Sage.

Koopman, J. (1986). New developments in government consumer policy: A challenge for consumer organizations. Journal of Consumer Policy, 9, 269-286.

Mattsson, L-G. (1985). An application of a network approach to marketing. Defending and changing market positions. In N. Dholakia and J. Arndt (Eds.), Changing the course of marketing: Alternative paradigms for widening marketing theory (pp.263-288). Greenwich, CN: JAI Press.

McGregor, S.L.T. (1992). Consumer policy - A network/political economy perspective. Unpublished doctoral dissertation, University of Strathclyde, Scotland.

McGregor, S.L.T. (1994). A primer on the micro-economic paradigm: The traditional approach to consumer policy. Canadian Home Economics Journal, 44(1), 32-37.

Mitchell, J.C. (1969). Social networks in urban situations. Manchester, England: University of Manchester Press.

Pestoff, V.A. (1988). Exit, voice, and collective action in Swedish consumer policy. Journal of Consumer Policy, 11(1), 1-28.

Ramsay, I.D.C. (1984, December). Rationales for intervention in the consumer marketplace. London, England: Office of Fair Trading.

Ramsay, I.D.C. (1985). Framework for regulation of the consumer marketplace. Journal of Consumer Policy, 8, 353-372.

Rock, R., Biervert, B., & Fischer-Winkelmann, W.F. (1980). A critique of some fundamental theoretical and practical tenets of present consumer policy. Journal of Consumer Policy, 4(2), 93-101.

Scott, J. (1991). Social network analysis. London, England: Sage.

Shapiro, S.J. (1986). Home as an electronic marketplace: The consumer protection and public policy issues. Journal of Public Policy and Marketing, 5, 212-226.

Tichy, N.M. (1981). Networks in organizations. In P.C. Nystrom and W.H. Starbuck (Eds.), Handbook of organisational design (vol. 2) (pp. 225-249). London, England: Oxford University Press.

Venkatesh, A., & Burger, P.C. (1984). Toward an integrated theory of consumer regulation. Journal of Macromarketing, 4(1), 29-40.

Walsh, A. (1990). Statistics for the social sciences. New York: Harper & Row.

Yin, R. (1984). Case study research design and methods. London, England: Sage.

Endnote

1 Associate professor, Human Ecology Department, MSVU, 166 Bedford Highway, Halifax, NS B3M 2J6 CANADA

Who has a Negative Attitude Toward Installment Debt in the U.S.?

Approximately 35 percent of the U.S. population has negative attitudes toward buying goods through an installment plan. Logit analysis of 1989 Survey of Consumer finances revealed that the probability of having negative attitudes toward borrowing was significantly related to age, number of children, education, race, marital status, homeownership, attitudes toward expected real income, and attitudes toward risk taking.

Kaili Yieh, Purdue University[1]

Introduction

Consumer installment debt is one of the most important economic aggregates to affect economic growth and stability (Hendricks, Youmans, & Keller, 1973). Installment debt also plays an important role in household utility, investment, savings and consumption choices (Herendeen, 1974). According to the 1986 Survey of Consumer Finances, more than 80 percent of families had consumer installment debt (Avery, Elliehausen, & Kennickell, 1987). Between 1980 and 1993, consumer installment credit outstanding increased by 165 percent. The total amount outstanding in 1980 was $298.2 billion, which increased to $790.1 billion in 1993 (U.S. Bureau of Census, 1994). By the end of 1994, consumer installment credit was over $900 billion and the ratio of the aggregate debt outstanding to disposable personal income was over 80 percent (Canner, Kennickell, & Luckett, 1995).

When households have high levels of installment debt, installment payments will reduce financial resources for current expenses and savings (Courtless, 1993). Sumarwan and Hira pointed out high installment payments would make households more vulnerable when financial emergencies occurred (Courtless, 1993). Moreover, "The earlier buildup of debt and the recent resurgence have prompted questions about the financial strength of the household sector - its vulnerability to economic slowdowns and its ability to sustain spending levels that support economic growth" (Canner, Kennickell, & Luckett, 1995, p.323).

Due to the importance of consumer installment debts, studies have been carried out in an effort to identify the determinants of consumer installment debts. The significant growth of a household's credit outstanding reflects the rapid growth in the availability of consumer credit, longer time of loan maturities, more convenience users, a liberal attitude toward borrowing, and a shift of consumer preferences toward credit use (Eastwood, 1985; Luckett & August, 1985). In other words, households' ability to incur debt and their attitudes toward credit use contribute to the dramatic increase of consumer installment debt.

The existence of liquidity constraints has been at the center of recent research. Households' inability to borrow has been concluded as the major factor which contributes to the failure of the life-cycle permanent income hypothesis (Hall & Mishkin, 1982; Hayashi, 1985; Flavin, 1985). Liquidity constraints reduce household consumption as well as household debt below the desired level (Hayashi, 1985; Cox & Jappelli, 1993; Duca & Rosenthal, 1993).

Since borrowing behavior is determined by both lenders and borrowers, factors on the demand side of credit are also important. Household attitude toward the use of installment debt is the most important factor on the demand side of the market (Hendricks et al., 1973). Nevertheless, consumer attitudes toward credit use, an indicator of consumer willingness to borrow (Zhu & Meeks, 1994) has not been extensively studied.

Although Americans embrace borrowing as a way of life, it is not true that all consumers are willing to borrow. This paper will study household borrowing behavior from the point of view of which consumers have a negative attitude toward installment debt.

The purpose of this study, then, is to examine the determinants of the probability of being a household which has negative attitudes toward incurring installment debt. The achievement of this purpose will make a contribution to our understanding about household attitudes toward credit use and household borrowing behavior. The findings will give answers to some important questions such as "Will higher levels of household debt affect households' attitudes toward borrowing?" The implications are important for lending officials, financial counselors, and educators.

Review of Literature

Lutz (1991) pointed out that attitude had been the most widely used theoretical construct in marketing decision making. Using the definition given by Fishbein and Ajzen (1975), Lutz explained that attitudes were learned through information or experience. Attitudes were predispositions which gave consistently favorable or unfavorable responses to an object which could be a person, issue or behavior. Lutz concluded that attitudes led actual behavior. By this reasoning, consumer attitude was an important determinant of consumer behavior.

Consumer attitudes toward the use of credit was one of the most important factors which explained borrowing behavior on the demand side of the credit market (Hendrick et al., 1973). Using Survey Research Center panel data for 1967 and 1970, Hendrick et al. (1973) concluded that attitude had a statistically and economically significant effect on installment debt use. It was also concluded that household attitudes toward credit were very stable over time. Households who changed their attitude would behave on average the same as households who had held similar attitudes for several years.

Following Hendrick et al., (1973), Canner and Cyrnak (1986) constructed the index of consumer attitudes toward credit use by summing the number of positive responses to nine questions about possible reasons to borrow, using the 1983 Survey of Consumer Finances. The index was used as an explanatory variable in a logit model to predict the probability of being a convenience user of credit cards. The findings indicated that households who preferred borrowing were more likely to use credit cards as a source of revolving credit and more likely to accept borrowing money for luxury items. Thus, households which viewed borrowing favorably incurred more debt to finance their needs, and households which viewed borrowing unfavorably incurred less debt.

Focusing on consumer credit use in low income families, Zhu and Meeks (1994) incorporated ability and willingness variables to investigate the determinants of family outstanding credit balance using data from the 1983 and 1986 Survey of Consumer Finances. The willingness variables were represented by two indicators: general attitude toward credit and specific attitude toward the appropriateness of credit use. The findings showed that the significant determinants of credit outstanding in 1986 were: previous outstanding credit balance in 1983, employment status, age, the interaction of educational level and specific attitude, and the interaction of credit outstanding in 1983 and specific attitude. It was concluded that the ability to borrow was more likely to override the willingness to borrow for low income households.

Methods

Identifying who Has a Negative Attitude Toward Incurring Installment Debt

The sample frame for the analysis in this study is the 1989 Survey of Consumer Finances (SCF). It is the best existing data source of household assets and debts. Moreover, it contains information on consumer attitudes toward credit. Households which have negative attitudes toward installment debt are observable in this study.

The question which ascertains consumer' attitude toward credit is "In general, do you think it is a good idea or a bad idea for people to buy things on the installment plan?" The possible answers for this question are 1) good idea, 2) good in some way, bad in others, and 3) bad idea. The households who answered "bad idea" are defined as the households which have negative attitudes toward installment debt. To reduce the impact of outliers, households which have very high income are excluded. The final sample contains 3,132 out of the original 3,143 observations. Sample weights are used because of oversampling of wealthy households in 1989 SCF data.

Variables

The dependent variable is the probability of being households which have negative attitudes toward installment debt. Since households' attitudes toward installment debt reflect both their time preference of consumption and ability to repay, factors which influence household time preference of consumption and ability to repay will be included in the model. Thus, the probability of being a household which has a negative attitude toward installment debt is a function of three groups of independent variables: socio-demographic factors, economic factors, and attitudinal factors. Socio-demographic factors include age, gender, race, education, number of children, marital status, and employment status. Economic factors consist of household income, total debt, net worth, household ability to borrow, and homeownership. Attitudinal factors are attitude toward future interest rate, attitude toward future real income, attitude toward financial risk, and attitude toward saving. To capture the interactive effects between household ability to borrow and household income, an interaction term of ability to borrow and income is added to the model.

A convex curve linear relationship is expected between age and having negative attitudes toward

borrowing. Households' time preference to consume is considered to vary with the life cycle stage (Eastwood, 1985). According to the U.S. National Commission on Consumer Finance (1972), young households more readily accept borrowing as an economic tool than older households. However, young households are also more likely to believe they will be turned down and tend to have negative attitudes toward borrowing. For middle-aged households, they expect to have greater ability to repay and have stronger time preference to incur installment debt due to the responsibility of taking care the families. As a result, the middle-aged households are expected to be less likely to have negative attitudes toward installment debt than households which are in other stages of life cycle.

Female-headed households and black households are expected to be more likely to have negative attitudes toward borrowing than male-headed households and nonblack households. This is because households in these two groups have been found to have lower ability to repay their debt. Employed households have a greater ability to repay their debt and they are proposed to be less likely to have a negative attitude toward installment debts.

According to the economics of marriage, individuals will marry when total output from the marriage equals or exceeds the sum of the single output of the two individuals and the individual's share of marital output must equal or exceed his or her single output (Bryant, 1990). The economies of scale in consumption will reduce the debt demand of married households. Therefore, they will be less likely to incur debt. However, the spending for family formation may lead married households to have positive attitudes toward borrowing. The relationship between marital status and the probability of having negative attitudes toward installment debt is therefore not certain.

The increase of birth rate stimulates debt expansion (Luckett & August, 1985). This is because the arrival of a child will increase the demand for market goods and service (Bryant, 1990). Also, having children is a type of human capital investment. Based on the economics of fertility, children are able to provide social, psychological, and economic security in a couple's old age (Bryant, 1990). The rate of return on having children is believed to be greater than the market rate of interest to incur debt. Hence, a household is less likely to have negative attitudes toward borrowing when it has more children. To capture the effect of education, dummy variables are used instead of the "quasi-quantitative" variable of years of education. More educated households are assumed to be more confident of their financial management and their ability to repay than less educated households. They are expected to be less likely to have negative attitudes toward installment debt than their counterparts.

Households which have more income are supposed to have a greater ability to repay their debt. According to previous studies (Slocum and Lee, 1970), it is expected that upper income groups hold more favorable attitudes toward credit use than lower income groups. "Moreover, household survey information strongly suggests that upper-income households, which should be best equipped to handle debt, have accounted for a large part of the growth in consumer debt" (Luckett & August, 1985, p.389). Thus, there is a negative relationship between income and households' negative attitudes toward borrowing.

For households which have more net worth, their need to incur debt may be reduced; however, their ability to repay will increase their willingness to borrow. The relationship between net worth and the probability of being households which have negative attitudes toward borrowing is therefore uncertain.

To take care of the housing expenses such as furniture and maintenance, homeowners are expected to be less likely to have negative attitudes toward installment debt than those who do not own a house.

The existence of credit constraints has indirect effects on a consumer's willingness to borrow (Deaton, 1992). It is hypothesized that households which are credit constrained are more likely to have negative attitudes toward borrowing than households which are not credit constrained.

Interest rate is the price which households pay for credit. When households predict interest rate will increase, future consumption becomes cheaper relative to present consumption and borrowing becomes more expensive. The substitution effect will decrease households' willingness to borrow. The income effect also decreases households' willingness to borrow since it will decrease the real income and consumption of borrowers (Bryant, 1990). Therefore, it is expected that the net effect makes households which predict that interest rate will increase in the future more likely to have negative attitudes toward borrowing than other households.

Households which are not willing to take on any risk in investing family savings are less likely to draw down their assets to bridge current consumption and future income. Consequently, they will be more willing to borrow to finance their needs. It is hypothesized that they are less likely to have negative attitudes toward borrowing than the other households.

If households expect their future real income to increase, they also expect their ability to repay debts will

increase. Hence, households which expect their future real income to increase are hypothesized to be less likely to have negative attitudes toward incurring installment debt than the rest of the population. Households which expect their future real income will decrease are predicted to be more likely to have negative attitudes toward borrowing than the other households.

Households which do not save are less likely to hold liquid assets to smooth their consumption. Therefore, it is hypothesized that non-savers are less likely to have negative attitudes toward credit than savers.

Analysis

As the dependent variable is dichotomous and micro data are used, logit analysis of microdata (Hanushek & Jackson, 1977) was applied in this study. The dependent variable was coded as one if households have negative attitudes toward installment debt, zero otherwise.

Table 1
Logit Analysis of the Probability of Having a Negative Attitude Toward Installment Debt

VARIABLES	Coefficients
Intercept	0.0852
Age	-0.0605 ***
Agesq	0.0007 ***
Unable	0.1022
Child	0.1072 **
Edu1	-0.1443 **
Edu2	-0.2183 ***
Race	0.2675 ***
Female	0.1166
Married	0.1672 **
Work	-0.0177
Home	-0.1166 *
Income(10,000)	-0.0002
Debt(10,000)	-0.0006
Worth(10,000)	0.0002
Income1	-0.0156
Income2	-0.1040 *
Inter1	0.0099
Inter2	-0.0262
NoRisk	-0.0932 *
Nonsave	-0.0147
Unable*income	0.0196

*p < .05. **p < .01. ***p < .001.

Results

About 35 percent of all households have negative attitudes toward installment debt. Their mean age is 51. Sixteen percent of these households are not able to borrow. Two-thirds of households are married, 70 percent are employed, 7 percent are black. Half of them expect that interest rates will increase while 16 percent of them expect that it will decrease. The sample mean household total income before tax is 34,128, total debt is 33,127, and total net worth is 171,933.

Table 1 presents the results of the logit analysis of the probability of being households who have negative attitudes toward installment debt. Consistent with expectations, the estimated coefficients of age and age square significantly confirm the convex relationship between age and households' negative attitudes toward borrowing. The probability of having negative attitudes toward installment debt decreases with age early on, hits the lowest point at age 43, then increases sharply.

In addition to age, the socio-demographic factors which have significant impact on the probability of having negative attitude toward borrowing are number of children, education, race, and marital status. As expected, Black households are more likely to have negative attitudes toward installment debt than non-black households and households which have more education than high school are less likely to have negative attitudes toward borrowing than households which are high school graduated. But, households which have less education than high school are also less likely to have negative attitudes toward installment debt than households who have graduated from high school. The result shows there is a non-linear relationship between education and the probability of having negative attitudes toward installment debt.

Number of children is positively related to the probability of having negative attitudes toward installment debt. This finding is contradictory to the hypothesis.

Married households are more likely to have negative attitudes toward installment debt than non-married households. The effect of the expenses used to form a family may therefore be offset by the effect of economic scale.

The signs of the coefficients of gender and employment status are consistent with expectations. Female-headed households are more likely to have negative attitudes toward installment debt than male-headed households. Employed households are less likely to have negative attitudes toward installment debt than unemployed households. However, these two factors do not have a statistically significant impact on the

probability of having negative attitudes toward installment debt.

Economic factors defined in this study are not significantly related to the probability of having negative attitudes toward installment debt with the exception of homeownership. As expected, homeowners are less likely to have negative attitudes toward installment debt than households which do not own a house.

Coefficients for household total income before tax, total debts, and net worth are not significantly different from zero. Households' inability to borrow does not significantly influence the probability of having negative attitudes toward installment debt.

The hypothesis is supported that households which are not willing to take on any risk in investing family savings are less likely to have negative attitudes toward installment debt than households which are willing to take risk.

Interestingly, expected future interest rate is not significantly related to the probability of having negative attitudes toward installment debt. Likewise, households' saving behavior does not have significant effects on their attitudes toward credit use.

As expected, households which expect their future real income to increase are less likely to have negative attitudes toward installment debt than those which expect it to remain the same. However, households which expect their future real income will decrease are also more willing to borrow than those which expect it to remain the same. This result is contradictory to what was predicted.

Conclusions and Implications

Credit market equilibrium is determined by credit demand and credit supply. While we know that 20 percent of the U.S. population are credit constrained (Hayashi, 1985; Jappelli, 1990), approximately 35 percent of the U.S. population have negative attitudes toward installment debt. It appears that households' attitudes toward borrowing is as important as households' inability to borrow in explaining disequilibrium in the credit market.

This study has attempted to identify those factors that determine the probability of being a household which has negative attitudes toward installment. The most important determinants are age, number of children, education, race, marital status, homeownership, attitudes toward expected real income, and attitudes toward risk taking. The results suggest several important implications.

First, the probability of having negative attitudes toward installment debt is dominated by household socio-demographic factors. So-called economic factors such as income, debt, and net worth do not play an important role in household attitudes toward installment credit use. This finding is important for financial institutions in helping them to identify their potential market. It is also important for financial counselors and educators who help people to deal with their financial problems.

Second, credit expansion has generated concern about the impact of consumer indebtedness on consumer expenditures and economic growth. The findings from this study show that high debt levels will not affect their attitudes toward installment credit. According to Jappelli's (1990) study, there is no significant relationship between households' ability to borrow and household debt. It is concluded that debt level does not affect households' ability to borrow and attitudes toward borrowing. In other words, consumer indebtedness will not have significant impact on consumer expenditures and economic growth.

Third, households' ability to incur debts is not significantly related to households' attitudes toward incurring debts. The finding is not consist with Deaton's (1992) assumption that unwillingness to borrow will be strengthen by liquidity constraints.

Finally, according to Hendricks et al. (1973), the relationship between household attitudes toward installment credit use and household debt is different between high income groups and low income groups. The relationship between ability to borrow and willingness to borrow also varies among different income groups. For future studies, it is important and necessary to separate households into different income groups to study household attitudes toward credit use.

Acknowledgements

I would like to thank Dr. Richard Widdows, my major professor, for his help during this research.

References

Avery, R. B., Elliehausen, G. E., & Kennickell, A. B. (1987). Changes in consumer finance. Federal Reserve Bulletin, 73 (10), 761-778.

Bryant, W. K. (1990). The economic organization of the household. New York: Cambridge University Press.

Canner, G. B., Kennickell, A. B., & Luckett, C. A. (1995). Household sector borrowing and the burden of debt. Federal Reserve Bulletin, 81 (4), 323-338.

Canner, G. B. & Cyrnak, A. W. (1986). Determinants of consumer credit card usage patterns. Journal of Retail Banking, 8, 9-18.

Courtless, J. C. (1993). Trends in consumer credit. Family Economics Review, 6(3), 8-17.

Cox, D., & Jappelli, T. (1993). The effect of borrowing constraints on consumer liabilities. Journal of Money, Credit, and Banking, 25(2), 197-213.

Deaton A. (1992). Understanding consumption. New York: Oxford University Press.

Duca, J.V., & Rosenthal, S.S. (1993). Borrowing constraints, household debt, and racial discrimination in loan markets. Journal of Financial Intermediation, 3, 77-103.

Eastwood, D. B. (1985). The economics of consumer behavior. Boston, MA: Allyn & Bacon Inc.

Flavin, M. (1985). Excess sensitivity of consumption to current income: liquidity constraints or myopia? Canadian Journal of Economics, 18(1), 115-136.

Hall, R.E., & Mishkin, F.S. (1982). The sensitivity of consumption to transitory income estimates from panel data on households. Econometric, 50(2), 461-481.

Hanushek, E.A., & Jackson, J.E. (1977). Statistical methods for social scientists. New York: Academic Press.

Hayashi, F. (1985). The effect of liquidity constraints on consumption: a cross-section analysis. The Quarterly Journal of Economics, 100, 183-206.

Hendricks, G., Youmans, K.C., & Keller, J. (1973). Consumer durables and installment debt: a study of American households. Ann Arbor, MI: The University of Michigan.

Herendeen, J. B. (1974). The role of credit in the theory of the household. The Journal of Consumer Affairs, 8, (2), 157-181.

Jappelli, T. (1990). Who is credit constrained in the U.S. economy? The Quarterly Journal of Economics, 105, 291-234.

Luckett, C. A., & August, J. D. (1985). The growth of consumer debt. Federal Reserve Bulletin, 71 (6), 389-402.

Lutz, R. J. (1991). The role of attitude theory in marketing. In H. H. Kassarjian & T. S. Robertson (Eds.), Perspectives in consumer behavior (pp. 317-339). Englewood Cliffs, NJ: Prentice Hall.

Slocum, J. W. Jr., & Mathews, H. L. (1970). Social class and income as indicators of consumer credit behavior. Journal of Marketing, 34, 69-74.

U.S. Bureau of Census (1994, 114th ed.). Statistical Abstract of the United States. Washington, DC: U.S. Government Printing Office.

U.S. National Commission on Consumer Finance (1972). Consumer credit in the United States. Washington, DC: U.S. Government Printing Office.

Zhu, L.Y., & Meeks, C.B. (1994). Effects of low income families' ability and willingness to use consumer credit on subsequent outstanding credit balances. The Journal of Consumer Affairs, 28 (2), 403-422.

Endnotes

1. Ph.D. Student, Department of Consumer Sciences and Retailing, 1262 Matthews Hall, West Lafayette, IN 47907-1262

Factors Affecting Families' Consumer Debt Burden

The purpose was to examine the effect of several factors including family type (occupational status and number of employed spouses) on consumer debt burden. An adaptation of the systems model was analyzed with data on 1,382 couples from the 1989 Survey of Consumer Finances. The analyses revealed that income, number of children, aversion, payment behavior, and one family type (career-earner) were associated with consumer debt burden.

Feng-Ling Lin, Purdue University[1]
Sharon A. DeVaney, Purdue University[2]

Introduction

Increased labor force participation by married women has been perceived as one of the major social and economic changes in the United States. The proportion of wives in the labor force has risen substantially from 31.9% in 1960 to 60.7% in 1994 (U.S. Bureau of the Census, 1995). Couples may have increased economic security if both spouses are employed, but there may be differences in that security depending upon occupational status of the spouses. Career status in this study means mean that persons are well-educated and have more options for advancement as compared to wage-earner employees (U.S. Office of Personnel Management, 1991). Hence, those with careers may feel more certain about the future than others. A question that has not been researched is whether financial management practices (Van Raaij & Gianotten, 1990) and consumer debt burden differ when couples vary by occupational status (career or wage-earner) and one or two incomes. Information concerning the use of consumer credit by family types is limited in spite of the profound growth in use of consumer credit.

The rapid development of financial markets has stimulated the growth of consumer credit. Starting from a base of less than three billion dollars at the end of 1945, consumer debt has grown profoundly (Luckett & August, 1985). The amount of outstanding consumer debt in 1990 was three trillion dollars, compared to 1.3 trillion dollars in 1980 (Meehan et al., 1990). Although mortgage debt accounts for the largest financial obligation for most families, consumer debt is more widespread in contrast to mortgage debt (Kennickell & Shack-Marquez, 1992). The dramatic expansion in consumer indebtedness is often attributed to credit card usage. The average amount of outstanding debt on credit cards has been the most rapidly growing share of consumer credit (Bloom & Steen, 1987). In 1990, $445 billion worth of goods and services were purchased by credit card charges (Canner & Luckett, 1992). Previous research has attempted to distinguish characteristics of credit card use (Canner & Cyrnak, 1986; Choi & DeVaney, 1995; Ethridge, 1982; Danes & Hira, 1990; Mathews & Slocum, 1970; 1972). Credit card revolvers tend to be younger, have lower incomes, and have more children.

Purpose and Theoretical Framework

The purpose of the study was to examine the effect of several factors on consumer debt burden. The study was influenced by two trends: increased participation of married women in the labor force and increased use of consumer credit (Bailey, 1987). It was hypothesized that consumer debt burden would vary by families according to income, age, education, number of children, family type (number of spouses employed and occupational status of the spouses) attitude toward use of credit, and financial management practices.

According to the systems model (Deacon & Firebaugh, 1988), a family is a system composed of three units: input, throughput, and output. Input consists of resources and demands which were represented in this study by income, age, number of children, education, family type, and attitude toward credit. As family members use resources to meet demands in the throughput process, the changes in resources and demands are called outputs. The throughput process was represented by several financial management practices and output was represented by consumer debt burden. It was not known a priori whether there were direct effects from the input upon output or whether output resulted as an effect of throughput.

Methodology

Data and Sample

Data were obtained from the 1989 Survey of Consumer Finances (SCF) (Kennickell, 1992). The SCF, sponsored by the Federal Reserve Board, collects comprehensive information on family finances. The 3,143 households in the SCF were selected based on standard multistage area-probability sampling methods. Data were weighted to minimize the influence of an over sampling of wealthier households. The SCF codes the husband, if present, as the respondent. The selection criteria was that the household must consist of a husband and wife who were less than 65 years old with at least one spouse working. There were 1,382 couples who met the criteria. To overcome non-response errors in the SCF, a systematic multiple imputation was applied to provide information about unanswered questions; five imputations were given for each missing value. Results from all five data sets were examined and no important differences were found. To simplify the analysis, results are given from only the first data set.

Variables

Input Variables. Input variables consisted of income, age, education, number of children, attitudinal factors, and five family types: one- and two-wage earners, one- and two-career families, and career-wage earner families (one spouse working in a career with the other working as a wage-earner). Job status was based on the 1980 Census of Population Occupation Record (Avery & Kennickell, 1988, p. 142). Career spouses were executives or administrative, managerial, or professional specialists; all other categories were identified as wage-earners. Attitude toward credit was measured by questions which asked if buying on credit for specific items was a good idea.

Throughput Variables. Response to questions about financial practices were treated as throughput variables. Responses were categorized as follows: Financial planning period was measured from 1 to 5, a few months to longer than 10 years. Shopping effort was the amount of effort looking for the best credit terms measured from 0 to 10, none to a great deal. Risk aversion was the risk respondents were willing to take when making financial decisions measured from 1 to 4, substantial to not at all. Shopping for credit terms was measured by 12 possible responses which were recoded as 1 if shopping for credit terms was based on interest rate and 0, otherwise. Loan payment behavior was categorized as 1 equals late payment and 0 equals other. Most important reasons for saving were categorized as: precautionary (emergency or retirement), consumption, education, and cannot save.

Output Variables The output measures were (a) the ratio of outstanding credit card balance to income, and (b) the ratio of outstanding consumer loans to income. Consumer loans consisted of the amount currently owed on automobiles, household durable goods, recreation or entertainment goods, and personal loans. Thus, all financial indebtedness except for mortgages and loans for the repair of current residence and for investment were included in the output measures.

Methods of Analysis

To determine whether continuous measures varied significantly among types of families, the General Linear Model (GLM) was applied to test the differences of sample means. The Student-Newman-Keuls (SNK) procedure was used to test means that were significantly different (Miller, 1981; SAS Institute Inc., 1989). Chi-square was used to test the differences of the frequencies of the qualitative variables. When proportions were significantly different, pairwise comparisons were made to learn where differences existed (Siegel & Castellan, 1988). Since the distribution of sample means of attitudes toward credit and debt-to-income ratios departed from the normal distribution, nonparametric Kruskal-Wallis tests were employed (Neter, Wasserman, Kutner, 1990). If results of the Kruskal-Wallis tests found the means to be statistically unequal, Bonferroni correction of P value was applied to obtain the magnitude of the means during pairwise comparisons.

It was hypothesized that debt burden could be affected by the input and also the throughput variables. To determine whether the effects of input and throughput variables were direct or indirect, two standard least squares regressions in two stages were applied (Koutsoyiannis, 1977). In the first stage, Ordinary Least Squares (OLS) and logistic regression equations were used to examine determinants of the throughput variables, the financial management practices which consisted of: financial planning period, amount of effort in shopping for credit, risk aversion, choice of credit based on interest rate, and payment behavior. Because the first three dependent variables were continuous variables, OLS was used to examine the relationship between dependent and independent variables. The last two dependent variables were binomial; logistic regression was used to examine the relationship between the response probability of the dependent variable and the independent variables (Kennedy, 1992).

Credit card debt burden and consumer loan debt burden were the dependent variables for the second stage of analysis. Tobit regression was used because of the censored dependent variable (Kinsey, 1981); about 35% of each family type had no credit card debt or consumer loan debt. The estimated values of financial management practices from the OLS and logistic regressions were included as independent variables, along with socioeconomic variables, in the Tobit regression models in the second stage.

Findings and Discussion

Socioeconomic Factors

Results from GLM and SNK tests are shown in Table 1 with each column representing a type of family and each row representing a variable. A capital letter below each mean indicates the result obtained from the Student-Newman-Keuls test. Means with the same letter are not significantly different from each other.

Two-career families had the highest average income, $89,518. Husbands in one-career families were the oldest, with an average age of 43.5 years. Husband's highest level of education, on average, ranged from 15.56 to 11.56 years for two-career and one-wage-earner families, respectively. Two-wage-earner families had significantly fewer children than any other family type

Financial Management Practices

One-wage-earner families had the shortest planning period. No significant differences were found for amount of shopping for the best credit terms. Each family type indicated that they exerted a moderate effort in shopping for credit terms. Respondents in two-career and career-wage-earner families were significantly more likely than other family types to take more risk. One-wage-earner families were the most risk averse.

Only four pairwise comparisons could be made and career-wage earner families were not included in the four pairs since it was difficult to classify arbitrarily whether career-wage earner couples belonged to the career couples or the wage-earner couples. Pairwise comparisons (not included in the table) showed that one-wage-earner families were significantly less likely to choose a lender based on interest rate than were one- and two-career families. Also two-wage-earner families were less likely to choose credit based on interest rate than were one-career families.

Pairwise comparisons (not included in the table) showed that two-career families were less likely to be late with scheduled payments compared to one- and two-wage-earner families. The primary motive for savings was for precautionary (retirement and emergency) purposes. Pairwise comparisons showed differences between one-wage-earner and one- and two-career families for saving for education.

Credit Card and Consumer Loan Debt Burden

Table 2 shows the credit card and consumer loan debt burden. The proportion of families who had outstanding credit card balances ranged from 62.2% to 42.4%. Two-career families had the highest average outstanding balance ($1,958) while one-wage-earner families had the lowest ($577). Two-wage-earner families had the highest credit card debt burden, on average. Pairwise Kruskal-Wallis tests showed that one-wage-earner families had a significantly lower credit card debt burden than two-wage-earner families.

Consumer loan balances varied from $9,101 to $4,116, on average. The highest consumer loan debt burden was held by two-wage-earner families. When pairwise tests were conducted, no differences in consumer loan debt burden were found among the types of families. Pairwise comparisons (not included in the table) showed a difference only for credit card debt burden and only for one pair: one- and two-wage earners. Thus, average consumer debt burden was comparable among family types.

Results of The First Stage of Regression Analysis

Financial Planning Period. Age and education were positively associated with financial planning period. This suggests that families with respondents who were older and had more education were more likely to plan for longer periods. See Table 3. Compared to one-wage-earner families, several family types were more likely to have longer financial planning periods. Families who agreed with the use of credit for living expenses were more likely to have longer planning periods.

Amount of Effort in Shopping for Credit. There was a positive association between age and education and amount of shopping for credit terms suggesting that as age and level of education of respondents increased, families were likely to expend more effort in shopping for credit terms. However, one-career families, compared to one-wage earner families, were less likely to expend effort in shopping for credit terms. Those who agreed with the use of credit for luxuries (furs and jewelry) and education were less likely to exert effort while those who agreed with the use of credit for vacations were likely to exert more effort in shopping for credit. When the attitudinal variables were included in the second stage of analysis, the regression was unable to reach convergence. Consequently, the attitudinal variables were omitted from the final models.

Table 1
Descriptive Statistics for the Five Types of Families

	One-wage earner (n=348)	One-career (n=141)	Two-wage earners (n=431)	Two-careers (n=121)	Career-wage-earner (n=340)
Socioeconomic Factors (GLM and SNK tests)					
Income	36,656 (C) F = 9.90	70,176 (B) p = < 0.001***	38,529 (C)	89,518 (A)	56,463 (B)
Age of husband	41.21 (B) F = 7.56	43.57 (A) p = < 0.001***	38.65 (C)	41.47 (B)	39.46 (C)
No of children	1.63 (A) F = 3.38	1.60 (A) p = < 0.01**	1.36 (B)	1.63 (A)	1.60 (A)
Edu of husband	11.56 (E) F = 119.03	15.12 (B) p = < 0.001***	12.22 (D)	15.56 (A)	14.29 (C)
Financial Management Practices (GLM and SNK tests)					
Planning period	2.81 (C) F = 7.43	3.40 (A) p = < 0.001***	3.03 (B)	3.32 (A)	3.20 (AB)
Effort to find credit	6.18 (A) F = 0.51	5.96 (A) p = 0.72	6.22 (A)	6.36 (A)	6.36 (A)
Risk aversion	3.41 (A) F = 12.60	3.23 (B) p = < 0.001***	3.18 (B)	3.01 (C)	3.02 (C)
Financial Management Practices (Chi-Square)					
Interest rate	21.91% χ^2 = 13.87	37.51% p = < 0.01**	27.07%	33.32%	31.43%
Late payment	21.66% χ^2 = 13.33	16.71% p < 0.05*	26.20	12.19%	22.22%
Saving motive					
Precautionary	53.29%	58.26%	51.41%	50.11%	59.92%
Consumption	25.78%	24.73%	28.91%	21.70%	18.32%
Education	8.69%	13.91%	13.78%	23.59%	17.75%
Cannot save	12.24% χ^2 = 46.34	3.10% p < 0.001***	5.91%	4.60%	4.00%

*p < 0.05. **p < 0.01. ***p < 0.001.

Table 2
Credit Card and Consumer Loan Debt

	One-wage earner	One-career	Two-wage earner	Two-career	Career-wage-earner
Credit card debt	$577	$1,065	$1,058	$1,958	$1,180
% of all with debt	42.4%	50.8%	62.2%	57.2%	61.3%
Consumer loan debt	$4,116	$7,670	$4,355	$9,101	$5,977
% of all with debt	56.4%	58.4%	62.9%	72.2%	69.9%
(Chi-Square)					
Credit card burden	1.91%	2.79%	4.09%	3.46%	2.78%
$\chi^2 = 30.18$	$p = < 0.001$***				
Consumer loan burden	13.83%	20.47%	25.33%	14.22%	14.19%
$\chi^2 = 10.29$	$p = < 0.05$*				

*p < 0.05. **p < 0.01. ***p < 0.001.

Table 3
Results of OLS and Logistic Regression Analyses on Financial Management Practices

	Planning Period	Amount Shopping	Risk Aversion	Interest Rate	Late Payment
Intercept	1.31***	4.32***	3.52***	-3.69***	1.80*
Income	8.53E-8	-6.38E-18	-8.05E-8	1.07E-8	-4.43E-6
Age	0.01***	0.02***	0.00	0.02**	-0.05***
Education	0.06***	0.09***	-0.03***	0.10***	-0.09***
No. of children	-0.05	-0.03	0.03	0.01	0.09
Family type					
One-wage-earner	-	-	-	-	-
Two-wage-earner	0.22*	-0.01	-0.18**	0.26	0.29
One-career	0.37***	-0.67*	-0.03	0.34	0.17
Two-career	0.29	-0.27	-0.24**	0.16	-0.17
Career-earner	0.29***	-0.15	-0.26***	0.27	0.26
Attitude					
Installment plan	-0.03	0.06	0.00	0.02	0.19***
Vacation	-0.02	0.31***	0.11	0.10	-0.11
Living expense	0.05**	-0.03	0.03	0.06	-0.06
Furs/jewelry	0.05	-0.27***	-0.01	-0.03	0.08
Car	0.04	0.01	0.01	0.02	-0.13
Education	-0.01	-0.18*	0.04	-0.12	0.01
Adjusted R^2	0.05	0.02	0.05	---	---
Pseudo R^2	---	---	---	0.05	0.12

*p < 0.05. **p < 0.01. ***p < 0.001.

Risk Aversion. Compared to one-wage-earner families, three family types (two-wage-earner, two-career, and career-earner) were more likely to take financial risk, holding other variables constant. Also, respondents with less education were more likely to be risk averse.

Credit Based on Interest Rate. Age and education were positively associated with choosing credit based on interest rate suggesting that when respondents were older and had higher levels of education, those families were more likely to use interest rate as the basis for deciding on a lender.

Payment Behavior. Age and education were negatively associated with late payment behavior indicating that the probability of late loan payments increased if the respondent was younger or not as well educated. The likelihood that respondents reported making late payments was associated with using credit for installment plans.

Results of the Second Stage of Regression Analysis

The purpose of the second stage was to identify the effects of both input and throughput variables on the two output measures: credit card debt burden and consumer loan debt burden. The results are shown in Table 4.

Credit Card Debt Burden. Results of the Tobit regression indicated that income, number of children, and the predicted values of risk aversion and late payment behavior were indicators of credit card debt burden, i.e., there were direct effects for income, number of children, risk aversion, and payment behavior on credit card debt burden. Income was negatively related to credit card debt burden suggesting that lower income families were more likely to have a larger credit card debt burden. There was a positive association between number of children and credit card debt burden suggesting that families with more children have increased use of credit cards relative to income.

There was a negative association between the predicted value of risk aversion and credit card debt burden. Risk aversion was coded as 1, substantial, to 4, not at all. Results of the first stage using OLS regression suggested that, compared to one-wage earner families, three family types (two-wage earner, two-career, and career-earner families), were likely to be more risk tolerant. Also, families with a more highly educated respondent were more likely to be risk tolerant.

The predicted value of late payment behavior was associated with credit card debt burden. Families who were less likely to make payments on time were more likely to have larger credit card debt burdens. In the first stage, age and education were negatively associated with late payment behavior suggesting an indirect effect for age and education on the credit card debt burden. That is, families with a younger or less well educated respondent, are more likely to have a larger credit card debt burden.

Consumer Loan Debt Burden. Results from the Tobit regression show that income and education were negatively associated with consumer loan debt burden. Number of children was positively associated with consumer loan debt burden. These findings suggest that families with lower incomes, more children, and lower levels of education were more likely to have higher consumer loan debt burdens, all else equal. Compared to one-wage-earner families, career-earner families were likely to have lower consumer loan debt burdens.

The effect of predicted variables for financial management practices was similar to credit card debt burden except families who had not made late payments were more likely to have larger consumer loan debt burdens.

Implications

The results provide useful information to financial management educators and counselors. Results of the first stage of analysis showed that education was associated with each of the financial management practices of length of planning period, amount of shopping for credit, risk aversion, selection of interest rate, and payment behavior. Thus, it is important to target programs and materials to the educational level of individuals and families.

When educators and counselors have an opportunity to present programs, they should attempt to assess the audience through questionnaires, interviews or pre-tests to learn the background of the prospective participants. Similar efforts to assess the target audience should be made when preparing written materials on financial management.

The effect of income on debt burden in the second stage of analysis suggests that educators and counselors need to assist lower income households in evaluating the amount of credit card and consumer loan debt that is being carried. Although two-wage-earner families had about the same income level as one-wage-earner families, they carried almost twice as much credit card debt, on average. If there was an interruption in even one income, two-wage-earner families could experience serious difficulties in handling expenses. If families are uncertain about income, it should be useful to learn as much as possible about managing cash flow.

Table 4
Results of Tobit Regression Analysis on Debt Burden

	Credit Card Debt Burden	Consumer Loan Debt Burden
Intercept	0.6504***	5.9777**
Income	-3.0238E-7***	-8.80020E-7***
Age	-0.0012	-0.0065
Education	-0.0025	-0.0553*
No. of children	0.0102*	0.0505*
Family type		
One-wage-earner	-	-
Two-wage-earner	0.0366	-0.2397
One-career	0.0345	-0.0936
Two-career	0.0112	-0.2935
Career-earner	0.0078	-0.4436**
Estimated index		
Planning period	-0.0478	-0.3165
Risk aversion	-0.1553**	-1.5375***
Shopping behavior	-0.0123	-0.0362
Payment behavior	0.1515***	-0.9918*
-2 Log Likelihood	208.56	1097.12

*p < 0.05. **p < 0.01. ***p < 0.001.

Note: Because education and financial planning period were highly correlated with the probability of basing choice of a lender on interest rate, the variable for interest rate was deleted from the debt burden models.

Age was associated with each of the financial management practices in the first stage. Husbands in two-wage-earner families tended to be younger than other husbands. This suggests that two-wage-earner families may be in an early life-cycle stage where they are likely to be accumulating durable goods. Information to help these families understand short- and long-term goals and the use of a financial planning period may be needed.

Families may need information to help them understand that the use of credit cards can be a more expensive way to obtain credit since the interest rate on credit cards tends to be higher than the rate for consumer loans. The effect of the variables for payment behavior and risk aversion indicate that information on these topics should be included in educational materials and programs. Assisting families to understand the effect of late payments on future credit use could encourage them to make payments more promptly or to reduce dependence on credit.

The finding that there was little difference among family types in amount of shopping to find the best credit terms should be addressed. Although this information is available, families may be reluctant to expend the necessary effort to acquire the information. Educators need to present techniques to help families compare the cost of obtaining credit. The finding suggests that research is needed to understand why families do not appear to search for and use information on interest rates.

References

Avery, R. B., & Kennickell, A. B. (1988). 1986 survey of consumer finances: Technical manual and codebook. Washington, DC: Board of Governors of the Federal Reserve System.

Bailey, A. W. (1987). Social and economic factors affecting the financial well-being of families. Journal of Home Economics, 79(2), 14-18.

Bloom, D. E. & Steen, T. P. (1987). Living on credit. American Demographics, 9, 22-29.

Canner, G. B. & Cyrnak, A. W. (1986). Determinants of consumer credit and usage patterns. Journal of Retail Banking, 8(2), 9-18

Canner, G. B. & Luckett, C. A. (1992). Developments in the pricing of credit card services. Federal Reserve Bulletin, 78(9), 652-666.

Choi, H. & DeVaney, S. A. (1995). Determinants of bank and retail credit card use. Consumer Interests Annual, 41, 42-49.

Danes, M. & Hira, T. K. (1986). Knowledge, attitudes, and practices in the use of credit. Proceedings of the American Council on Consumer Interests, 32, 254-260.

Deacon, R. & Firebaugh, F. (1988). Family resource management: Principles and applications. 2nd Edition. Needham Heights, MA: Allyn and Bacon.

Ethridge, V. (1982). Factors related to credit card users on basis of method of repayment. Home Economics Research Journal, 11, 293-299.

Kennedy, P. E. (1992). A guide to econometrics. 3rd Edition. Cambridge: MIT Press.

Kennickell, A. (1992). 1989 Survey of consumer finance code book. Washington, DC: Board of Governors of the Federal Reserve System.

Kennickell, A., & Shack-Marquez, J. (1992). Changes in family finances from 1983 to 1989: Evidence from survey of consumer finances. Federal Reserve Bulletin, 78(1), 1-17.

Kinsey, J. (1981). Determinants of credit card accounts: An application of tobit analysis. Journal of Consumer Research, 8, 172-182.

Koutsoyiannis, A. (1977). Theory of economics: An introductory exposition of economic methods. Second edition. London: Macmillan Press.

Luckett, C. A., & August, J. D. (1985). The growth of consumer debt. Federal Reserve Bulletin, 71(6), 389-402.

Meehan. J., Spiro, L. N., Yang, G., Smith, G., & Hamilton, J. (1990, December 10). Past due! the bills for consumer debt arrives. Business Week, pp. 204-205.

Mathews, H. L. & Slocum, J. W. (1970). Social class and income as indicators of consumer credit behavior. Journal of Marketing, 34(2), 71-78.

Mathews, H. L. & Slocum, J. W. (1972). Rejoinder to social class or income? Journal of Marketing, 36(1), 69-70.

Miller, G. P. (1981). Simultaneous statistical inference. New York: Springer-Verlag.

Neter, J., Wasserman, W., & Kutner, M. H. (1990). Applied linear statistical models 3rd Edition. Boston: Irwin.

SAS Institute Inc. (1989). SAS/STAT user's guide version 6 (4th ed). Cary, NC: SAS institute Inc.

Siegel, S., & Castellan, N. J., Jr. (1988). Nonparametric statistics for the behavioral sciences (2nd ed). New York: McGraw-Hill.

U.S. Bureau of the Census. (1995, 115th ed.). Statistical abstract of the United States 1995. Washington, DC: U.S. Government Printing Office.

U.S. Office of Personnel Management. (1991). The classifier's handbook. Washington, DC: U.S. Government Printing Office.

Van Raaij, W. E., & Gianotten, H. J. (1990). Consumer confidence, expenditure, saving and credit. Journal of Economic Psychology, 11, 269-290.

Endnotes

1. M.S. student, Consumer Sciences and Retailing, 216 Matthews, West Lafayette, IN 47907.
2. Assistant Professor, Consumer Sciences and Retailing, 216 Matthews, West Lafayette, IN 47907.

Profiling the Consumer Debt Portfolio of American Households: Differences by Income

Data from the Survey of Consumer Finances were used to profile the consumer debt portfolio of 3143 American households. Households were divided into income quintiles for purpose of analysis. Descriptive statistics and LSMeans multiple comparison tests were used to profile debt portfolio data and make comparison between income groups. The three middle income groups showed least significant differences across portfolio variables. The lowest income quintile had a debt to income ratio of 0.52.

Carole G. Prather, University of Missouri[1]
Jamie Huyer, University of Missouri[2]

Introduction

Consumer debt in the U.S. has been growing at an alarming rate. Consumer debt, as a specific category of credit, grew at a faster rate in the decade of the 80's than at any other time in the history of the nation (Feinberg, 1993). During that decade, total consumer installment debt more than doubled, increasing at a mean annual rate of 8.82 percent (Board of Governors of the Federal Reserve, 1981-1991). This virtual explosion of consumer credit has had a major impact on the American economy. During the 1980's consumer credit fueled the economy by making it easier to acquire goods and services. By the end of the decade, the downside of the credit explosion had begun to impact many American households. In 1990 more than 400,000 individuals made contact with Consumer Credit Counseling agencies seeking respite from their credit problems. During this decade of unduplicated credit expansion, the rate of personal bankruptcy doubled as well (Detweiler, 1993).

Household debt is generally divided into two categories, mortgage debt and consumer debt (Canner and Luckett, 1991). Consumer debt is defined as "nonbusiness debt used by consumers for purposes other than home mortgages" (Garman & Forgue, 1994, p. 174). Consumer debt is made up of consumer loans, credit card debt, and home equity loans/lines of credit. Consumer debt may be secured by the equity in a home, by the goods being financed, or unsecured as in the case of credit cards (Canner and Luckett, 1991).

While the quantity of consumer debt has been documented, there has been little empirical analysis about the character of the consumer debt portfolio -- how consumer debt is distributed across the spectrum of credit vehicles and how this distribution varies by income. The concept of a "portfolio" has generally been applied to assets. This same idea can be applied to the liabilities of a family thus allowing for more detailed scrutiny of their current debt situation.

The objective of this study is twofold. First, this study profiles consumer debt portfolios of U.S. households showing how consumer debt varies by income level of the household both in magnitude and composition. Second, the study highlights the differences in the distribution of debt across the various consumer debt vehicles for five income groups.

With the tremendous increase in the availability and marketing of consumer credit vehicles, the results of this analysis will provide insight into the changing nature of the American family's consumer debt. This information adds to the base knowledge about consumer debt. Further, it may assist individuals having an interest in the financial well-being of families to develop and target educational programs as well as inform policy concerning the impact of credit on that financial well-being.

Background

A large proportion of consumer debt is held in credit cards. During the 1980s, consumer debt rose an average of 8.8 percent annually while credit card debt rose at the rate of 13.5 percent per year (Board of Governors of the Federal Reserve, 1981-1991). With the current proliferation of credit cards there are many more opportunities to acquire goods and services on credit than at any other time in history. According to Lawrence Lindsey, a Federal Reserve Board Governor, a major factor in the alarming increase in consumer debt is the heavy marketing of credit cards. During the first quarter of 1995, banks sent out 1.2 billion credit card solicitations, ". . .five for every man, woman, and child

in America" (Bleakley, 1995, p. A12).

Credit cards have two basic functions. They serve as a "means of payment and a source of credit" (Courtless, 1993, p. 10). Consumers who pay off their balances each month are using their cards as a "means of payment". Those who maintain balances are using their card as "a source of credit", expanding current consumption and planning to pay later (Courtless, 1993).

Home equity loans and lines of credit are no longer limited to the financing of home improvements as they once were (Family Economics Review, 1994). Consumers are being enticed to tap the equity in their home to finance everything from a new car to their children's college education. When the Tax Reform Act of 1986 phased out the tax deductibility of non-mortgage loans, consumers were encouraged to borrow through a home equity loan when needing funds for a consumer purchase. This enables most consumers to deduct the loan interest if they itemize deductions. Lenders have taken advantage of tax reform to aggressively market the home equity loan (Courtless, 1993).

Although the vehicle loan has typically been the largest component of consumer credit (Courtless, 1993), the increase of auto leasing may impact that category of consumer debt. The growth in credit card debt during the 1980s may also change the distribution of consumer debt across the debt portfolio.

In summary, not only has consumer debt increased in this country, but the types of consumer debt vehicles available to consumers and the motivation for using these different forms of credit have also increased. Documentation of this changing picture of consumer debt can provide insight into the willingness of American households to take on consumer debt and their preferences for various credit vehicles.

Methodology

The data for this study were from the 1989 Survey of Consumer Finances (SCF) a national study commissioned by the Federal Reserve Board and seven other federal agencies. The study was conducted by the Survey Research Center of the University of Michigan. The SCF contains comprehensive financial information on 3143 respondent families from the 48 contiguous states. Of the 3143 observations, 2277 were selected using standard multistage probability sampling methods with an additional 866 observations selected through the use of tax data for the purpose of over sampling wealthy households (Kennickell & Shack-Marquez, 1992). The sample was weighted to produce a nationally representative sample for this analysis. Data set one was used for this study.

Descriptive statistics were used to profile the debt portfolio of respondent families with the sample divided into income quintiles. Each quintile contained 20 percent of the total sample. The income quintiles are as follows:

Quintile 1: < $ 9,000
Quintile 2: $ 9,001 - $ 19,000
Quintile 3: $ 19,001 - $ 30,000
Quintile 4: $ 30,001 - $ 48,000
Quintile 5: > $ 48,000

In developing the portfolio of consumer debt for this analysis, consumer debt was operationalized as the sum of four components: credit card debt, vehicle loan debt, consumer loan debt, and the portion of home equity loan debt which could be reasonably considered as consumer debt. Where respondents provided two purposes for a home equity loan and only one met the consumer debt criteria, fifty percent of the home equity balance was considered as consumer debt.

There were three areas of financial obligation which might have been considered in the total consumer debt portfolio but were not included. The first is the financial obligation which comes with an automobile lease. Although automobile leases do carry a financial obligation, by strict accounting principles they are not considered as debt and therefore were not included in this analysis. SCF also provided data for outstanding loans on life insurance policies and retirement accounts. However, SCF did not have data concerning the purpose of these types of loans. There was no method for determining if the loan would meet the criteria for consumer debt so they were also not included.

As a way of profiling the consumer debt portfolio for each of the five income categories, means were calculated for total income, number of credit cards, balances on credit cards, vehicle loans, consumer loans, the consumer component of home equity loans and total consumer debt. A ratio variable was also constructed dividing total consumer debt by annual income to specify the debt to income relationship. SCF contained three cases where respondents reported zero income and a positive value for consumer debt. These cases were deleted when calculating the ratio variable.

To determine if the observed differences between any two income groups were significant for each of the consumer debt variables, multiple comparison tests were conducted using the least-squares means option of the GLM procedure. The LSMeans option provides a comparison of means when data are unbalanced. A more detailed explanation of the LSMeans option can be found in SAS/STAT User's Guide, Volume 2.

Results

Of the 3143 respondent families in SCF, 37.2 percent indicated having no consumer debt as operationalized for this study. Because over a third of the sample had no consumer debt, this analysis was done twice, once on the full sample and again on sub-samples restricted to observations where the family carried the type of debt under consideration. The sub-sample for the ratio variable was restricted to families carrying some consumer debt.

Nationally, credit cards are the fastest growing component of consumer debt. Almost 70 percent of the respondents in SCF had at least one credit card. Twenty-eight percent of the families in the lowest income quintile and 96 percent in the highest income group had at least one credit card. As income increased, both the likelihood of having credit cards and the total number of credit cards increased (Tables 1 and 2). Given the role of income in determining credit worthiness, this finding was not necessarily surprising. Perhaps of greater interest was that almost a third of respondents with incomes below $9,000 held credit cards. Median household income for 1988 was $27,225 (U.S. Department of Commerce, 1995). Households in Quintile 1 were well below this median yet 28 percent had qualified for at least one credit card. As income approached the median level for the period (Quintile 3), 77 percent of households had credit cards.

Sixty-one percent of all households had store credit cards compared to 57 percent with bank credit cards. Families in the four lowest income quintiles were more likely to have store credit cards than bank cards while those in the highest bracket were slightly more likely to have bank credit cards (Table 1). Because store credit cards tend to have lower credit limits than bank cards and often have less stringent qualifying criteria, families in the lower income groups may have found it easier to obtain merchant specific cards. The convenience and versatility of bank cards may have had more appeal to higher income households.

Total credit card debt tended to increase as income increased. While it might have been expected that higher income households would use credit cards more as a means of payment than to augment current consumption, households in the two highest income brackets were more likely to carry a balance on their credit cards than households in the lower three quintiles. When the sample was restricted to households having at least one credit card, households in the middle income quintile were the most likely to carry forward a balance on their credit cards (Table 1). In this restricted sample, upper income households were still more likely to carry a balance than lower income households. Clearly the use of credit cards to augment current consumption was not limited to lower income households.

Focusing on vehicle loans as a component of the consumer debt portfolio, the percentage of households having such debt increased as income increased (Table 1) although the difference between Quintile 4 and 5 was negligible and not significant. Historically, vehicle loans have been the largest single component of the consumer debt portfolio. In looking at the full sample, this would be true for all but the lowest income group. For Quintile 1 vehicle loans made up only one-fourth of the consumer debt burden (Table 2).

Consumer loan balances decreased slightly from Quintile 1 to Quintile 2 and then increased as income expanded (Tables 2 & 3). The category of consumer loans was the largest single component in the consumer debt portfolio of the lowest income group. It is difficult to offer a reasonable explanation for this finding. Perhaps it is more the lack of vehicle loans than exceptionally high amounts of consumer loans that give the latter category a relatively greater weight in the debt portfolio of the lowest income group.

One of the newer forms of consumer credit is the home equity loan/line of credit where the funds borrowed are used for a consumer purchase. Families might have selected this way of funding a consumer purchase because mortgage interest, including the interest on a home equity loan, was the only form of interest allowed as an itemized tax deduction after the tax reform of 1986. Even with the tax advantage offered by this type of loan, only a small percentage of households in 1989 were involved in this form of consumer debt. The majority of households having a home equity loan were found in the upper two income quintiles (Table 1). There are likely at least two reasons for the concentration of home equity loans in the higher income sector. First, given the progressive nature of the income tax system, higher income families would derive greater financial benefit from the deductibility of interest. Second, higher income families are more likely to have sizeable equity in a home to tap for such loans.

Families in Quintiles 4 and 5 were the most likely to have some consumer debt (Table 1). Only in Quintile 1 were fewer than half the families carrying some consumer debt. Families at the lower end of the income spectrum likely experienced the greatest difficulty qualifying for credit given their limited resources.

The total amount of consumer debt was positively correlated with income for both the full sample and the sub-sample (Tables 2 and 3). The mean amount of consumer debt more than doubled between

Quintiles 2 and 3 for the full sample and almost doubled between the same two groups in the restricted sample. This increase in the level of consumer debt may reflect some threshold in household income necessary to qualify for many forms of consumer credit.

While the propensity to acquire consumer debt and the quantity of such debt increased as income increased (Table 1), when consumer debt was related to income in the ratio variable, the patterns were considerably different. For the full sample, the ratio variable indicated that the burden of consumer debt was the least for households in the highest income quintile. Quintile 2 had the second lowest value for the ratio variable. Looking at the restricted sample of respondents with some consumer debt, the debt burden indicated by the ratio variable declined as income increased. For the lowest income group the consumer debt ratio equaled .52 dropping to .18 for households in Quintile 5 (Table 3). Although in absolute dollars, high income families carry a greater level of consumer debt, the ratio variable shows clearly that concern for debt level needs to be directed more toward families in the lower income brackets. To the extent that the ratio variable reflects financial fragility, the lower three income groups were in a more vulnerable position than families in the upper two income groups.

Table 4 provides a comparison between all of the income groups on the major consumer debt variables to indicate where differences were statistically significant. Quintiles 1 and 5 were most likely to stand

Table 1
Percentage of Respondents with Specific Consumer Debt Portfolio Components

VARIABLE	Q1	Q2	Q3	Q4	Q5
Have CredCards	28.2	59.3	77.0	90.3	96.0
Have Bank CardCards	16.0	38.2	61.4	77.4	89.3
Have Store CardCards	23.4	50.9	64.0	80.9	87.3
Have CrCd Balance	14.4	28.0	48.0	56.2	54.9
Have CrCd & CrCd Bal	51.0	47.2	82.7	72.3	67.2
Have VehLoan	9.6	22.2	42.1	50.5	50.9
Have ConLoan	27.0	25.7	25.5	28.6	21.7
Have Home EquityLoan	.6	3.7	2.7	6.7	10.5
Have ConDebt	40.5	51.5	69.5	77.1	75.3

Table 2
Mean Values of Consumer Debt Components for Full Sample

VARIABLE	Q1	Q2	Q3	Q4	Q5
TotIncome	5565.00	13805.00	24744.00	38416.00	95450.00
# Credit Cards	0.35	1.03	1.85	3.55	5.62
CredCard Balance	73.00	350.00	798.00	988.00	1512.00
VehicleLn Balance	235.00	1001.00	2812.00	3969.00	5063.00
Consumer LnBalance	733.00	640.00	1581.00	1611.00	3086.00
HomeEq Balance	4.00	106.00	88.00	371.00	1123.00
Total ConDebt	1045.00	2097.00	5279.00	6939.00	10785.00
Ratio (Debt/Income)	0.21	0.16	0.21	0.18	0.14

Table 3

Mean Values of Consumer Debt Components for Sub-sample Holding Debt in Specific Portfolio Categories

VARIABLE	Q1	Q2	Q3	Q4	Q5
#Credit Cards	1.24	1.75	2.40	3.94	5.85
CredCard Balance	510.00	1251.00	1660.00	1756.00	2752.00
VehicleLn Balance	2454.00	4512.00	6680.00	7865.00	9955.00
Consumer LnBalance	2711.00	2495.00	6208.00	5634.00	14203.00
HomeEq Balance	589.00	2877.00	2189.00	5543.00	10715.00
Total ConDebt	2580.00	4073.00	7599.00	9001.00	14326.00
Ratio (Debt/Income)	0.52	0.31	0.31	0.23	0.18

Table 4

Comparison between Income Groups for Consumer Debt Components

		Full Sample					Sub-sample			
VARIABLE		Q1	Q2	Q3	Q4		Q1	Q2	Q3	Q4
# Credit	Q2	D				Q2	D			
Cards	Q3	D	D			Q3	D	D		
	Q4	D	D	D		Q4	D	D	D	
	Q5	D	D	D	D	Q5	D	D	D	D
CredCard	Q2	D				Q2	D			
Balance	Q3	D	D			Q3	D	N		
	Q4	D	D	D		Q4	D	D	D	
	Q5	D	D	N	N	Q5	D	D	D	D
VehicleLn	Q2	D				Q2	N			
Balance	Q3	D	D			Q3	D	N		
	Q4	D	D	D		Q4	D	D	N	
	Q5	D	D	N	N	Q5	D	D	D	D
Consumer	Q2	N				Q2	N			
LnBalance	Q3	N	N			Q3	N	N		
	Q4	N	N	N		Q4	N	N	N	
	Q5	D	D	D	N	Q5	D	D	D	D
HomeEq	Q2	N				Q2	N			
Balance	Q3	N	N			Q3	N	N		
	Q4	D	D	N		Q4	N	N	N	
	Q5	D	D	D	D	Q5	D	D	D	D
Total	Q2	D				Q2	N			
Debt	Q3	D	D			Q3	D	N		
	Q4	D	D	D		Q4	D	D	N	
	Q5	D	D	D	D	Q5	D	D	D	D
Ratio	Q2	N				Q2	D			
(Dbt/Inc)	Q3	N	N			Q3	D	N		
	Q4	D	N	N		Q4	D	D	N	
	Q5	D	N	N	N	Q5	D	N	N	N

D = p <0.05 N = Not significant

apart as significantly different from the other income groups. The patterns of credit use were sometimes similar between the two extreme income groups, however as Table 4 indicates, these two groups were also significantly different from each other for all of the debt balance variables whether looking at the full sample or the sub-samples. Even though their patterns of usage had similarities, the reasons for use or non-use were

likely very dissimilar as reflected in the two groups being significantly different from each other on the quantifying variables.

The only variable where all income groups were significantly different from all other income groups was the number of credit cards.

When consumer debt was related to income through the ratio variable, there were fewer significant differences between the income groups. Quintile 1 was significantly different from all other income groups on the ratio variable in the sub-sample. This provides further support for concern that the consumer debt burden may be heavier for this group.

Conclusions

The results of this study yielded little in the way of surprising findings. The amount of consumer debt in most debt categories tended to increase as income increased which was anticipated given that income is a major factor in the amount of credit made available to any specific household.

The patterns of participation in the various debt categories were also related to income with the proportion of households having a specific type of debt increasing as income increased or increasing through the first four income quintiles and then dropping for the highest income group. This drop in percentage of debt holders was likely a reflection of the lack of financial need for credit in the highest income bracket.

If there was an unexpected finding it was that 37 percent of all households in this nationally representative sample had no consumer debt. The non-users of consumer credit were concentrated in the two lowest income quintiles while at least two-thirds of families in the upper three income categories had at least some consumer debt.

While Quintile 5 was significantly different from other income quintiles on the dollar amount of consumer debt, Quintile 1 was significantly different from all other income groups when debt was related to income as a ratio. Clearly, the burden of consumer debt is greater for households with limited income(Table 4).

The high value of the ratio variable (.52) for families having some consumer debt in the lowest income quintile (Table 3) certainly merits further attention. While some households within Quintile 1 might have been able to handle a large amount of consumer debt relative to their income, the mean ratio indicates that many lower income households would likely be financially vulnerable. Further study is needed of the specific characteristics, besides income, of these households and the purposes of the loans in the consumer loan category before questioning the validity of credit granting policies related to lower income borrowers.

The trend toward increased auto leasing, the heavy marketing of both credit cards and home equity loans may have resulted in changes in the consumer debt portfolio since 1989. Further study using more recent data is recommended to assess the impact of these trends on the overall picture of consumer debt.

References

Bleakley, F.R. (September 11, 1995). Consumer debt alarms some analysts. Wall Street Journal, A2.

Board of Governors of the Federal Reserve System. (1981-1991). Federal Reserve Bulletin, 67-77, Table A 1.55.

Canner, G.,& Luckett, C.(April 1991). Payment of household debts. Federal Reserve Bulletin, 77, 218-229.

Courtless, J. C. (1993). Trends in consumer credit. Family Economics Review, 6, 8-17.

Detweiler, G. (1993). The ultimate credit handbook. New York: Penguin Books USA, Inc.

Feinberg, A. (1993). Downsize your debt: How to take control of your personal finance. New York: Penguin Books USA, Inc.

Garman, E. T. & Forgue, R. E. (1994). Personal finance (4th edition). Boston:Houghton Mifflin Company.

Kennickell, A. & Shack-Marquez, J. (January 1992). Changes in family finances from 1983 to 1989: Evidence from the Survey of Consumer Finance. Federal Reserve Bulletin, 78, 1-18.

Staff. (1994). Research summary: Consumer debt and home equity borrowing. Family Economics Review, 7, 32-33.

U.S. Department of Commerce. (1995). Statistical Abstract of the United States 1995, 115th Edition. Washington, D.C: U.S. Goverment Printing Office.

Endnotes

1. Assistant Professor, Consumer and Family Economics, 162 Stanley Hall, Columbia, MO 65211.
2. Graduate Assistant, Consumer and Family Economics.

Determinants of Information Search Behavior: The Case of Saving and Borrowing Decisions

Using data from the 1989 Survey of Consumer Finances, this study examined the effects of household income, human capital/experience with financial institutions, time constraint, and tastes/preferences on the extent of information search. OLS results indicated that education, good health, and experience with financial institutions each had a positive effect on information search; on the other hand, household income, age, full-time work, presence of children, and being single each had a negative effect. The implications of the results for both consumer educators and policy makers are discussed.

Yoon G. Jang, University of Missouri-Columbia[1]

Introduction

As the financial services market for consumer credit becomes more and more complex, it has become increasingly important for consumers to engage in information search and to compare different costs by searching for price information for consumer credit--that is, which source of credit would have the lowest finance charge. Similarly, since there are many different instruments (e.g., certificates of deposit, mutual funds, stocks, bonds, retirement accounts, savings bonds) available to households for allocating their assets, saving decisions have not become easier. Accordingly, it is important for consumers to shop around for the best terms--which financial institutions offer the highest rate of return among the various saving and investment instruments.

Numerous studies have been conducted on information search behavior; however, there have been few studies of the extent of search as it relates to services such as credit and savings accounts. Since characteristics of financial services are different from those of household durable goods or other tangible goods, one might expect search behavior for a service to be different from search for tangible goods. Thus, a consumer's knowledge, demographic characteristics, and expected benefits from search could affect search behavior for financial services differently than for tangible products.

This research attempts to identify the extent of information search behavior in the case of saving and borrowing decisions and seeks to explore factors associated with the extent of information search. When consumers make decisions, it involves both the recall of information that is held in an individual's memory and the acquisition of additional knowledge about products from the external environment. Both internal and external search have been of interest to consumer researchers and educators. However, since internal search is not observable in the available dataset, the focus of this study is external search.

Knowledge of the extent of information search for financial services could provide a general overview of how U.S. families make decisions in today's complex financial markets. The findings of factors associated with the extent of information search could be useful for consumer educators. For example, more knowledge of those factors would aid them in developing educational programs for consumers who do not engage in active information search. Further, implications of the results for policy makers and financial counseling practitioners will be discussed.

Related Literature

There have been numerous studies on the determinants of external search for tangible goods (Bloch, Sherrell, & Ridgway, 1986; Bucklin, 1966; Carlson & Gieseke, 1983; Claxton, Fry, & Portis, 1974; Lehmann & Moore, 1983; Moore & Lehmann, 1980; and Stigler, 1961). Stigler's economics of information framework has been used as an intuitive description of consumer search behavior (Beals, Mazis, Salop, & Staelin, 1981; Carlson & Gieseke, 1983; Claxton, Fry, & Portis, 1974; and Punj & Staelin, 1983). Stigler's theory (1961) suggests that consumers engage in active search only if the perceived benefits of additional information outweigh the cost of acquiring it. Many factors, including demographics and prior product class experience, have been studied in an attempt to account for individual differences in consumers' responses to a given set of information (Brucks, 1985).

Much empirical evidence supports the view that prior knowledge (i.e., information held in an individual's memory) affects information search activities (Brucks, 195; Jacoby, Chestnut, & Fisher, 1978; Moore & Lehmann, 1980). There are two different views regarding the effects of prior knowledge on the amount of external search. The first view is that the more prior knowledge obtained prior to active search, the less the need for external search, and vice versa. That is, because consumers have prior knowledge/experience in the marketplace, they might have more retrievable internal information and would need to search less. The second view is that the more detailed the memory structure, the more likely it is that consumers can comprehend newly obtained information. In this way, prior knowledge/experience provides an impetus for external search. However, the findings regarding the relationship between prior knowledge/experience and the amount of information search have been inconsistent. For example, the relationship between prior knowledge and amount of search was found to be negative by Moore & Lehmann (1980), and Punj & Staelin (1983), while the relationship was positive in analyses by Brucks (1985), Jacoby, Chestnut, & Fischer (1978), and Johnson & Russo (1984).

While prior knowledge will affect search, search cost will affect the extent of search behavior. Engel, Blackwell, and Kollat (1978) included in their study such costs as time, out-of-pocket monetary expenses, psychological discomforts, the satisfaction forgone by delaying purchase, and the dangers of information overload. On the other hand, it has been contended that search cost is reflected in a person's income: i.e., those with higher incomes have a higher opportunity cost of time (Punj & Staelin, 1983).

Moore and Lehmann (1980) examined the effects of the different variables on external search. Specifically, they focused effects of individual characteristics on search behavior for food. In that study, Moore and Lehmann (1980) found that while experience was highly related to the amount of external search, time pressure was negatively related to external search.

As for other factors affecting information search, Ozanne, Brucks, and Grewal (1992) stated that consumers' information search may be influenced by the new product's similarity or dissimilarity to categories stored in memory. Bloch et al. (1986) also addressed product familiarity as a determinant of levels of prepurchase search. Carlson and Gieseke (1983) examined the relationship between the price paid for a bundle of products and the amount of search. They found that additional search leads to lower prices paid, lower prices encourage purchase of greater quantities, and more purchases provide an incentive for further search, suggesting that the amount of search, price paid, and quantities purchased are all interrelated.

As stated earlier, not many studies have investigated factors associated with information search for tangible goods such as financial product services. Chang (1990) explored factors associated with consumer search behavior for consumer credit. Using the 1983 Survey of Consumer Finances, that study measured the probability of search for credit information. The study included such explanatory variables as size of loan, income, education, age, prior experience, and time scarcity to explain credit information search behavior. The findings suggested that in general, education and size of loan had positive effect on the probability of search. The curvilinear income effect suggested that middle-income consumers are more likely to search for some credit information than lower and higher income consumers. However, age, prior experience, and time scarcity were not significantly related to the probability of search.

Conceptual Framework

Stigler's economics of information search model (1961) provides the theoretical basis for the present study. The major propositions from Stigler's theory are as follows: a) the extent of search is negatively related to the cost of search; b) the gain from search decreases with continued search; c) the larger the quantity of purchase will be, the greater the return from search; and d) the more search that a consumer undertakes, the lower will be the average price paid. According to Stigler (1961), consumers inform themselves as to what is available in the marketplace only to the point where the marginal return of gathering more information equals or exceeds the marginal cost.

Based upon Stigler's model, it can be stated that the extent of search prior to decision making regarding financial services is governed by factors which relate both to the value of the search and the cost of effort involved. However, there are many potentially relevant variables that were not identified in Stigler' model. Different people may have substantially different tastes/preferences regarding the search process; therefore, the costs as well as benefits need not be equal for all consumers. Avery (1994) stated that one limitation in applying Stigler's theory to the direct study of consumer search behavior is that the theory does not explicitly incorporate many non-economic factors identified in other disciplines as having a major impact on search behavior. Although Stigler's model is used as

the basis for the present study, four classifications of constructs that affect the extent of information search are considered in order to specify the determinants of search and to generate hypotheses about the tendency of households to engage in search. Therefore, the following search model is presented for the present study:

Information Search = f (Income, Human Capital/Experience, Time Constraint, and Tastes/Preferences). Accordingly, household income, human capital/experience, time constraint, and tastes/preferences are used to help explain why different consumers engage in different levels of search for financial services.

Method

Data and Sample Characteristics

This study used data from a public use tape collected for the 1989 Survey of Consumer Finances (SCF). The survey was sponsored by the Federal Reserve Board and several other federal agencies, and was collected by the Survey Research Center of the University of Michigan. A multiple imputation technique was used to create the 1989 data file, which included five sets of data (Kennickell, 1991). In this study, only the first set of data was used for the analyses.

In this study, the unit of analysis is household. The average reported household income was $33,915. Average age of household heads was 48, while mean value of heads' level of education was 12.4 years. Mean value of the number of financial institutions that households contacted was 2.1, whereas mean value of the number of loans that households currently owed was 0.4.

Of the total sample, approximately 75 percent reported their health status as good. About 30 percent of the sample had no credit cards. While 60 percent of the sample were homeowners, about 40 percent were either renters or had some other housing tenure status. Slightly more than half of the households had no children, and approximately 61 percent were full-time workers. Forty-two percent were single-person households, while 58 percent were married-couple households. As for race, 75.3 percent were White, 12.8 percent were Black, 7.7 percent were Hispanic, and 4.2 percent were of other race.

Dependent Variable

The dependent variable was obtained directly from the survey questionnaire. The extent of search scale ranges from zero (almost no shopping) to ten (a great deal of shopping). In the dataset from the 1989 Survey of Consumer Finances, the question that addressed the extent of search was:

> "When making major decisions about saving and borrowing, some people shop around for the very best terms, while others do not. Where would your family be on the scale?"

The mean level for information search was 5.88 based on a scale of 0 to 10, with 0 representing no search and 10 representing extensive search. Among the 3,143 households, 11.1 percent were never involved in shopping around for the best terms, while 18.5 percent engaged extensively in information search.

Selection of Independent Variables

Income. Reported total household income in 1988 is used as the income measure in the analysis. Shopping around for the best terms can be very time consuming. Regarding the search for information, as income rises, the demand for larger quantities and more types of services leads to an increase in the amount of time spent shopping. On the other hand, time will be more valuable to a person with a larger income. High-income consumers tend to have higher wage rates, so the marginal cost of information search will be higher for high income consumers. Therefore, holding other factors constant, the effect of shopper's income on the extent of search will be determined.

Human Capital/Experience. In previous studies, demographic factors such as age or education (or both) have been used to try to capture the effects of experience, knowledge, and capability. Further, in the human capital literature, health is viewed as a human stock that can improve an individual's efficiency and capability. In addition, shopper's experience with financial institutions might be captured by variables such as the number of such institutions with which the households deals, the number of loans they currently have, whether or not they have credit cards, and whether or not the households own homes.

Time Constraint. A consumer's time scarcity is negatively related to the extent of search. Shoppers with less time will search less not only because they lack time to shop around but also because their relative opportunity cost of time is high. In this study, two time constraint variables, employment status and presence of children, are included in the empirical model. If consumers are employed full-time, they have less time available for information search and will therefore search less. In this case consumers may search more only when there is a relatively large amount of money to be borrowed or saved. Similarly, the presence of children in the household might affect the level of information

search because more time would be required for household work.

Tastes/Preferences. Socio-demographic factors might help explain why different consumers engage in differing amounts of search. For example, such factors as marital status and race can influence a consumer's tastes/preferences. A household with a single adult generally does not have the opportunity to specialize as much as a household with two adults. For example, the single adult has to do all the household work from cooking to money management. When making major decisions about saving and borrowing, single adults might have higher opportunity cost of search because of the multiple roles the single householder must play. This might affect their information search behavior. On the other hand, White consumers may differ in their tastes/preferences for information search from other races because of their varying ethnic backgrounds. That is, different racial backgrounds can influence attitudes toward shopping around to find the best terms. White consumers might be more aware of the benefits of search than nonwhites, or the opposite relationship is possible.

Results

Table 1 shows results from the OLS regression analysis. The adjusted R^2 value indicates that the model explains only about six percent of the variance in the extent of search. However, the significant F-value indicates that the model itself is statistically significant.

Table 1
Predictors of Extent of Search (n=3,143)

Independent Variables	Coefficients	S.E.
Constant	6.250	(0.421)[a]
Household Income	-3.21E-6**	(1.4E-6)
Human Capital/Experience		
Age	-0.031***	(0.005)
Education	0.063***	(0.021)
Good health	0.419***	(0.152)
Num. of institution	0.174***	(0.049)
Num. of loans	-0.029	(0.074)
Card owner	0.159	(0.154)
Home owner	0.235***	(0.142)
Time Constraint		
Child present	-0.374***	(0.135)
Full-time work	-0.381**	(0.156)
Tastes/Preferences		
Single	-0.617***	(0.138)
White	0.185	(0.145)
Adj R square	0.06	
F value	15.312***	

[a]Figures in parentheses are standard errors.
** Significant at the 0.05 level.
*** Significant at the 0.01 level.

In this study, income has a significant negative effect on the extent of search in the case of households' saving and borrowing decisions. That is, as household income increases, household heads are less likely to engage in information search activity. This finding might reflect that the marginal cost of information search is higher for high income households than for low income households. It is also the case that the cost of a bad choice may be more serious for low income households.

Among the human capital factors, both age and education are statistically significant, but in different directions. That is, while the age of the household head is negatively related to the extent of information search regarding saving and borrowing decisions, the education of the household head is positively related. Further, health status is statistically significant for the level of information search. Household heads who are in good health are more likely to engage in active information acquisition.

As for the variables reflecting prior knowledge/experience in the financial market, the number of financial institutions with which households have experience positively affects the extent of information search. This finding is consistent with that of a previous study (Moore & Lehmann, 1980). The more the household deals with financial institutions, the more the household shops around for the very best terms in their saving and borrowing decisions. Further, home ownership as a proxy for experience in the financial marketplace is positively related to information search activity. That is, homeowners search more than others when they need to make major decisions about saving and borrowing. However, the number of consumer loans that households currently own and credit card ownership do not play important roles in predicting household information search behavior.

As expected, presence of children and full-time work has a negative effect on information search. Further, among the variables that are used as a proxy for household tastes and preferences, only marital status shows a significant impact on information search. Single household heads engage in less search than do married households. The race variable has no significant role in explaining household information search activity.

Conclusions and Implications

The purpose of this study is to assess underlying reasons for any differences in the extent of information search when consumers make decisions about saving and borrowing. In this study, the extent of search is measured by consumers' perceived effort

involved in search activity. The cost-benefit framework provided a basic tool for explaining consumer information search behavior for this study. One of the major limitations of this study resulted from the data that were used. Only one variable was found to provide information search activity in the 1989 SCF data. This variable captured only the self-reported scale on information search when respondents faced borrowing and saving decisions. However, there was no information regarding time frame when this information search activity happened. That is, as a measure of search, the question did not specify it was referring to the number of sources used or the time spent on the search. Further, the scale for the extent of information search also very value. That is, as a measure of search, the question did not specify it was referring to the number of sources used or the time spent on the search. This limitation might suggest directions for future research. For example, a combination of direct observation along with detailed personal interviewing might better explain information search behavior. Or, a more refined set of questionnaire items might be developed.

To explain differences in consumers' external search behavior, previous studies have included factors such as market environment (e.g., number of alternatives, complexity of alternatives, and information availability) or situation variables (e.g., urgency, financial pressure, and special purchase opportunity). These variables might better explain the differences in the extent of search among different consumers. However, all those variables were not available in the dataset. Furthermore, many studies have indicated that the opportunity cost of time is the major cost of information search. In the Stigler's model, hourly wage rate was used as a proxy for opportunity cost of time. However, the dataset used for the present study included only total household income. Thus, although this research utilized Stigler's conceptual framework, researchers were not able to obtain an accurate estimate of opportunity cost of time. The problems with measurement of search and explanatory variables could contribute to the low R-square reported in Table 1.

Given all these limitations, the findings of the study has some noteworthy implications. The study found that older consumers are less likely to engage in active information acquisition. Since older consumers may lack the mental ability to process large quantities of stored memory or may lack the physical ability to actively seek information, consumer educators need to provide them with relevant information and programs, preferably in conjunction with public efforts. Financial institutions might well provide information to older consumers that is particularly easy to comprehend.

The results of this study also indicated that households with young children, households in which the adults are employed full-time, and household headed by a single adult, were all less likely to engage in information search than other households. This would seem to indicate at least one shared characteristic: a shortage of time to devote to information search. Financial management professionals and consumer educators could consider programs targeting these groups with useful and easy-to-comprehend facts about credit and saving instruments for these households to use in pursuing their financial goals and making their saving and borrowing decisions.

In today's complex financial market, the cost of information search may be much greater for a money borrower than a goods buyer because the price of the service is not fully disclosed. This study found that previous experience in the financial market positively influenced the extent of search. This might imply that fuller information disclosure for financial products would help consumers who lack previous experience to understand better the terms and language of the financial market. Furthermore, because the language of the creditor or saving/investment medium is not always simple and clearly stated, educational programs to help consumers understand the terms and their meanings also need to be designed by the public policy. The cost of information search may be greater for the less educated consumers, who can feel overwhelmed by too many possibilities and choices, and provision of information that could be readily understood will reduce that cost. A previous study has indicated that consumers turn to popular consumer periodicals for information relevant to the basic skills needed in the marketplace (Carter, Audrus, & Hanna, 1986). Consumer educators could design programs that enhance these basic skills.

Reducing cost by borrowing from the lowest-cost lender and building financial assets by saving money in the financial institutions which offer the highest returns among the available market alternatives are important aspects of financial management. Overall, programs that minimize the cost or effort required to obtain information on which decisions may be based should be encouraged for households with time constraints, for older households, for less educated household heads, and for households headed by singles, in particular. These consumers need efficient and effective information packaging and delivery strategies, as well as the communication skills with which to seek the information they need in order to make efficient choices in the market.

References

Avery, R. J. (1994). Determinants of search for grocery items: An empirical assessment of the economics of information theory. The proceedings of the American Council on Consumer Interest, 39, 29-35.

Beals, H., Mazis, M., Salop, S., & Staelin, R. (1981). Consumer search and public policy. Journal of Consumer Research,8, 11-22.

Bloch, P. H., Sherrell, D.L., & Ridgway, N.M. (1981). Consumer search: An extended framework. Journal of Consumer Research,13, 119-126.

Brucks, M. (1985). The effects of product class knowledge on information search behavior. Journal of Consumer Research, 12, 1-16.

Bucklin, L.P.(1966). Testing propensities to shop. Journal of Marketing, 30, 22-27.

Carlson, J.A., & Gieseke, R.J.(1983). Price search in a product market. Journal of Consumer Research, 9, 357-365.

Carter, L.S., Andrus, D.M., & Hanna, S. (1986). The effects of demographic characteristics on consumer information periodical readership and financial knowledge. Journal of Consumer Studies and Home Economics, 10, 139-150.

Chang, Y.R. (1990). Consumer credit: An exploratory study of search behavior. Unpublished thesis, The Ohio State University.

Claxton, J.D., Fry, J.N., & Portis, B. (1974). A taxonomy of prepurchase information gathering patterns. Journal of Consumer Research, 1, 35-42. Engel, J.F., Blackwell, R.D. & Kollat, D.T. (1978). Consumer behavior. Hinsdale, IL: Dryden.

Goldman, A. & Johansson, J.K. (1978). Determinants of search for lower prices: An empirical assessment of the economics ofinformation theory. Journal of Consumer Research, 5, 176-186.

Jacoby, J., Chestnut, R., & Fisher, W. (1978). A behavioral process approach to information acquisition in nondurable purchasing. Journal of Marketing Research, 15, 532-544.

Johnson, E. & Russo, J.E. (1984). Product familiarity and learning new information. Journal of Consumer Research, 11,542-550.

Kennickell, A. (1991). Imputation of the 1989 Survey of Consumer Finances: Stochastic relaxation and multiple imputation. Proceedings of the Section on Survey Research Methods, American Statistical Association, 1-9.

Lehmann, D.R. & Moore, W.L. (1983). On hypotheses, measurements, and the extension of knowledge. Journal of Consumer Research, 10, 1983.

Moore, W.L. & Lehmann, D.R. (1980). Individual differences in search behavior for a nondurable. Journal of Consumer Research, 7, 296-307.

Ozanne, J.L. Brucks, M., & Grewal, D. (1992). A study of information search behavior during the categorization of new products. Journal of Consumer Research, 18, 452-463.

Punj, G.N. & Staelin, R. (1993). A model of consumer information search behavior for a new automobiles. Journal of Consumer Research, 9, 366-380.

Stigler, G.J. (1961). The economics of information. The Journal of Political Economy, 69, 213-225.

Urbany, J.E. (1986). An experimental examination of the economics of information. Journal of Consumer Research, 13, 257-271.

Xiao, J.J. (1995). Patterns of household financial asset ownership. Financial Counselling and Planning, 6, 99-106.

Endnotes

1. Post doctoral researcher, Department of Consumer and Family Economics. Stanley Hall, Columbia, Mo 65211.

The Cost of 'Free' Credit Card Benefits

This paper examines credit cards offering consumers incentives such as cash rebates, discounts on new cars, or travel bonuses. It addresses the question of whether these benefits require consumers to pay higher interest rates and annual fees. Secondary analysis of data on credit card plans reveals that many of these benefits are indeed "free." The major exception is travel benefits, such as frequent flyer mileage.

Robert N. Mayer, University of Utah, Salt Lake City[1]
Cathleen D. Zick, University of Utah, Salt Lake City[2]

Introduction

All-purpose credit cards were first introduced in September 1958, when the Bank of America sent credit cards to 60,000 unsuspecting consumers in Fresno, California (Nocera, 1994) Since that time, the use of credit cards has raised a number of public policy issues. Credit cards were first criticized as immoral for their likely effect on the virtues of thrift and delayed gratification. With each new development in the credit card industry, issues have emerged related to access, price, information, redress, and privacy. Questions like the following had to be answered: Who should be responsible if cards are lost or stolen? Should there be a ceiling on interest rates? What should happen if a consumer believes that a bill contains an error? Should unsolicited cards be sent through the mail? Should buyers who pay with cash be entitled to a discount or, conversely, should credit card users pay a surcharge?

The newest wrinkle with respect to credit cards is "co-branding." Co-branding refers to the linking of a credit card with a business trade-name offering cash rebates, points toward the purchase of goods and services, or other incentives. To date, co-branding has not been viewed from a public policy perspective, although members of the financial services industry debate its value (Auriemma, 1994; "Do Credit Card...," 1994; Nixon, 1994). The purpose of this paper is to identify some policy issues raised by co-branding, present some preliminary but intriguing empirical findings, and suggest directions for future research.

Background

One of the forerunners of today's co-branded credit cards was the Sears Discover Card. First issued in 1986, the Discover Card offered cardholders a rebate of up to 1% of their annual purchases. Note that the Discover Card differs from co-branded cards inasmuch as it competes with Visa and Mastercard and is not offered in conjunction with a traditional bank. Sears served as the issuing financial institution (although this aspect of the Discover Card has changed several times since 1990).

A second precursor of the co-branded credit card was the "affinity card." Affinity cards involve banks marketing credit cards to the constituents of various non-profit organizations (e.g., alumni of a particular university or supporters of an environmental organization). In most cases, the non-profit organization receives a percentage of purchases in exchange for lending their name (and members) to the financial institution. Like co-branding, affinity cards involve a bank partnership through which consumers receive a Visa or Mastercard, but unlike co-branding, the partner is a non-profit organization.

A final element in the direction of co-branding was the offering of the AT&T Universal Card in 1990. Here, AT&T replaced the financial institution in offering consumers a no-fee Visa or Mastercard plus 10% discounts whenever the card was used to make long-distance telephone calls. Within a year of its roll-out, there were 8 million Universal Cards in circulation. By 1995, there were 22 million cardholders (Warner, 1995).

Together, these three innovations allowed for co-branding in which a financial institution teams up with a for-profit business to offer consumers a Visa or Mastercard plus add-on benefits. The affinity cards introduced the idea of partnerships, affinity cards and the Universal Card involved Visa and Mastercard, with institutions other than banks, and the Discover Card and the Universal Card associated consumers premiums or other special bonuses.

Actually, co-branding existed prior to the 1990

release of the AT&T Universal Card. Several airlines offered credit cards in the late 1980s that allowed users to earn frequent flyer bonuses on charges, even when they were not for air travel. Co-branded cards really made an impression on public consciousness when, in September 1992, General Motors, General Electric, and GTE all launched new cards within a 19-day span. The GM card offered a credit toward the purchase or lease of a new GM car or truck, the credit equalling 5% of all charges up to a maximum of $500 per year and $3,500 total. The GM card signed up a million accounts in its first month, 5.5 million accounts in its first year, and nearly 9 million accounts by the end of seventeen months. In 1993, Kroger became the first major retailer to offer a co-branded card. That same year Nordstroms became the first national retailer to offer a co-branded card. What makes Nordstroms' action so interesting is the fact that its co-branded card directly competes with its store card.

Banks are not necessarily happy about sharing their credit card business with their co-branding partners. Some banks have fought back by offering rebates and other benefits linked to their own products. Wells Fargo Bank, for instance, offers 5% rebates applicable to the principal on Wells Fargo mortgages (Lucas, 1993). Nations Bank offers a Start card with rebates applicable to a retirement savings account. Perhaps the ultimate card was rolled out in 1994 by Mellon Bank Corporation--the CornerStone card. It offers a plan by which consumers can earn back all of the interest they've paid if they hold the card for twenty years. Whereas most co-branded cards are especially appealing to consumers who pay off their balances at the end of each month, the CornerStone card appeals to people who revolve their credit card debt (Nixon, 1994).

Consumer and Policy Issues

Are co-branded cards and other cards offering "free" benefits an unmitigated boon for consumers, or do they also present challenges for consumers, consumer educators, and consumer policy makers? At the broadest level, one might ask whether the use of these cards promotes overindebtedness. Consumer use of installment credit has accelerated in recent years, and use of revolving credit has increased faster still (Federal Reserve Bulletin, 1995). The question that is most difficult to answer, though, is how much of the increased use of revolving credit results in greater indebtedness rather than just greater credit volume?

Beyond the general question of the role of co-branded credit cards in the problem of overindebtedness, there is also question of whether these cards constitute an undesirable social subsidy, transferring wealth from the less affluent to the more affluent. In the early 1980s, Senator William Proxmire (1983) argued that cash buyers subsidized credit card users to the tune of $1 billion annually. Proxmire, along with several consumer groups and the Federal Reserve Board itself), argued for the imposition of credit card surcharges, and proposed credit card surcharges. Pressure for the surcharges was sufficiently strong that Congress passed several short-term prohibitions on surcharges.

While interesting, the role of credit cards that offer rebates, premiums, or other benefits in creating overindebtedness or skewing the distribution of income is not addressed empirically in this paper. Rather, we address the practical issue of whether these cards are really "good deals," that is, whether their benefits outweigh any costs (e.g., higher annual fees or interest rates). Several organizations have offered their advice on how to use these cards wisely, including American Express and Bankcard Holders of America (BHA).

American Express is a major issuer of credit cards, including those offering various premiums and incentives. With the exception of its Optima card, American Express' major credit cards do not allow customers to carry a month-to-month balance, so its advice involving credit revolvers can be viewed as reasonably disinterested. In its September 1994 publication, Financial Responsibility, American Express recommends that consumers: (1) select a card that offers points or premiums toward a good or service they actually plan to use; (2) avoid going over their credit limit; (3) understand that they must pay their card balance in full by the payment due date in order for new purchases to be interest free; and (4) check whether cards offering premiums charge a higher interest rate or impose other fees. Although this advice is sound, it is relatively generic and does little to help consumers choose among benefit cards.

Bankcard Holders of America (BHA) is a non-profit organization whose major educational thrust has been to identify low-interest and no-fee credit cards. With the growing popularity of rebate/premium cards, BHA has begun publishing a list of programs and a guide to evaluating these cards. The most recent publication was issued in June, 1995 ("Rebate and Frequent Flyer Credit Cards"). BHA offers much the same general advice as American Express but also develops various scenarios based on different spending and payment patterns for rebate and frequent flyer programs.

The first scenario involves a rebate program and what BHA considers a "typical" consumer. This consumer is a credit revolver with an annual charge volume of $2,750 and a monthly balance of $1,750. In

this case, consumers are far better off using a non-rebate card with a low interest rate. The second scenario is for a rebate program used by a non-revolver with $4,000 worth of annual charges, paid in full each month. Here, the benefits of the program may exceed its costs, but consumers should be aware that some rebates do not "kick in" until a minimum number of points are obtained. In virtually every case, the net benefits are small and/or likely to be redeemed in the distant future.

The next two scenarios apply to frequent flyer programs, almost all of which charge annual fees. For the typical spender/revolver, these cards are a poor deal. It will take nearly ten years to earn a "free" ticket with most of these cards. In the meantime, consumers will be paying a higher interest rate for the privilege of acquiring mileage bonuses. In the worst cases cited, consumers would double their annual interest payments, from about $200 to $400. The final scenario involves a revolver who has an annual charge volume of $25,000 and carries a monthly balance of $12,000. Again, the extra interest costs of the frequent flyer card versus a no-frills, low-interest credit card are substantial, amounting to an additional $1000 or more. The 25,000 frequent flyer miles will likely be worth far less than the additional $1000 in interest charges.

The basic thrust of BHA's publication is to emphasize that rebate and frequent flyer cards make sense only for those cardholders who are high spenders and carry no balance. BHA does a good job of explaining the costs of various programs; it does virtually nothing in terms of comparing these costs to any benefits. This comparison is particularly important in the case of frequent flyer programs in which the annual fees may be substantial and the benefits may be highly restricted or long-term. The BHA publication fails to emphasize that, even for non-revolvers, each card carries an opportunity cost--the value of the next best credit card. One must also consider the value of any cash rebates or premiums foregone on other cards.

In sum, analyzing the value of credit cards offering rebates, premiums, or other incentives requires a quantification of all the costs and benefits of using a card. For example, what is the real value of 30,000 frequent flyer miles or a $300 discount on a General Motors vehicle? Further, the analysis must consider differences among consumers, especially differences in the volume of credit activity and the amount of credit that is revolved. What may be the right card for one consumer may be a disaster for another. The next section of this paper presents a preliminary effort to address one piece of this complex puzzle.

Empirical Analysis

To the extent that consumers pay extra for credit card benefits such as cash rebates and travel bonuses, it would be through higher interest rates and annual fees than they would otherwise pay. Banks and other credit card issuers probably determine interest rates and annual fees simultaneously, that is, as part of an overall effort to balance the costs and benefits of various credit cards. Because of this simultaneity, we would ideally like to estimate the following two structural equations:

$$\text{APR} = f(\text{FEE, other cost factors, credit card benefit factors}) \quad (1)$$

$$\text{FEE} = g(\text{APR, other cost factors, credit card benefit factors}) \quad (2)$$

Other cost factors would be items such as the length of the grace period and the variable vs. fixed nature of the interest rates. Credit card benefit factors would include the availability of cash rebates, frequent flyer bonuses, automatic insurance on rental cars, and extended warranty protection on purchases.

To make this system estimable using two-stage least squares, we would need to have a minimum of one exogenous variable in each equation that is not in the other equation. This would yield hedonic price equations in which one can directly interpret the influence of each variable on APR or annual fee (e.g., the presence of a travel bonus program is associated with a 3% increase in the APR). Unfortunately, the data available to study various credit card plans do not allow us to estimate the structural equations; there are no data for a variable that would plausibly affect annual fees without also affecting APR.

In the absence of the ability to estimate the structural equations, a fallback position is to estimate the reduced form APR-FEE system. This involves restating the two equations in terms of their exogenous variables only:

$$\text{APR} = f(\text{other cost factors, credit card benefit factors}) \quad (3)$$

$$\text{FEE} = g(\text{other cost factors, credit card benefit factors}) \quad (4)$$

The major drawbacks to this approach are the inability to examine the mutual influences of APR and annual fees and, more important for our current purposes, the inability to interpret the coefficients as hedonic price effects.

The data used in this study come from the Federal Reserve System (FRS), which collects and publishes a report every six months on the terms of credit card plans offered by the nation's largest card issuers and any other financial institution that wants to be included in the report. Traditionally, this report was neither widely circulated nor well publicized. In early 1995, however, the Federal Reserve System released the report in the form of a booklet entitled, "Shop: The Card You Pick Can Save You Money." The booklet encourages consumers to comparison shop for credit cards, just as they would for other goods and services.

The data employed in this analysis come from the "Shop" booklet. The credit terms used were those in effect as of January 31, 1995. The unit of analysis is each of the 154 banks listed in the booklet. The list of banks includes the largest card issuers in the country and so can be viewed as reasonably representative of the credit card offers available to consumers nationally.

In addition to the use of a reduced form system, the analysis has a number of other limitations. First, the credit card market changes frequently, so the costs and benefits of a credit card may be less fixed than implied by the booklet. The savvy consumer may be able to find introductory interest rates that are lower than those listed in the booklet or be able to have annual fees waived. Second, the booklet is confined to credit cards that allow consumers to revolve their credit; most American Express cards would not be included, for instance. Third, the 154 banks listed vary in the actual number of cardholders they have enrolled. Thus, each program receives equal weight in the analysis that follows; a preferable approach would be to somehow derive weights for each program based on the number of consumers who carry (or actually use) the card. Fourth, a bank may offer several credit card programs, each varying in its terms. The booklet only lists one set of terms per bank. Finally, the value of the various benefits offered by cards are crudely measured. A credit card may offer a cash rebate, but the booklet does not specify the percentage. Similarly, a credit card user might be able to earn frequent flyer points, but the booklet does not differentiate between airline programs that may vary in their generosity and flexibility.

Keeping in mind the limitations of the analysis, what do the data show? Table 1 shows the variables used in the analysis, including their mean values and standard deviations. Annual percentage rate had a mean of 16.5 and a relatively small standard of deviation of 2.46. APR ranged, however, from 8.50 to 21.00. The average value of annual fees was $12.32, but this value includes the 40% of cards that have no annual fees. Among the 60% of cards with annual fees, the typical charge was $25.

Tables 2 and 3 show the results of an ordinary least squares regression with annual percentage rate (APR) as the dependent variable and a tobit analysis with the size of annual fees as the dependent variable. (The tobit analysis is necessitated by the censored nature of the fee variable, with 40% of cards having no annual fee.) In both equations, the independent variables encompass both cost and benefit factors.

Table 1: Description of Variables *(N=154)*

VARIABLES	VARIABLES DESCRIPTION	MEAN	STD. DEV.
APR	Annual Percentage Rate	16.53	2.46
FEE	Annual Fee in Dollars	12.32	11.17
APRFIXED	APR is Fixed Rather than Variable	.33	.47
GRACE	Grace Period in Days	23.12	7.14
REBATED	Rebates Offered on Purchases, (1=offered, 0=not offered)	.06	.24
WARSECD	Warranty Extension/Purchase Security, (1=offered, 0=not offered)	.22	.42
ACCIND	Travel Accident Insurance, (1=offered, 0=not offered)	.54	.50
TRAVELDD	Travel Discounts, (1=offered, 0=not offered)	.14	.34
RENTAD	Auto Rental Insurance, (1=offered, 0=not offered)	.19	.39
NONTRAD	Non-Travel Related Goods, (1=offered, 0=not offered)	.05	.21
REGISD	Credit Card Registration, (1=offered, 0=not offered)	.12	.32
OTHERD	Other Card Benefits, (1=offered, 0=not offered)	.26	.44

Table 2: Ordinary Least Squares Analysis of Annual Percentage Rate

VARIABLE	COEFFICIENT	T-RATIO
Constant	15.19	22.08*
GRACE	.06	2.13*
APRFIXED	.97	2.29*
REBATED	-.17	-.21
WARSECD	.76	1.09
ACCIND	-.26	-.60
TRAVELDD	1.98	2.89*
RENTAD	-1.39	-1.97*
NONTRAD	-2.21	-2.12*
REGISD	-.95	-1.33
OTHERD	-.57	-1.20

N = 154; Adjusted R-Square = .069; F = 119.736*; * = p < .05

Considering the APR equation, two cost factors are associated with a higher APR--longer grace periods and a fixed (vs. variable) interest rate. Among the benefit factors, travel discounts are associated with a higher APR, while non-travel related goods and services and automobile rental insurance are associated with a lower APR. (The Federal Reserve System does not explain what is meant by non-travel related goods and services. Presumably, this includes credits toward items like new cars, computers, and telephone calls.)

While the association of travel benefits with a higher APR is not surprising, the association of auto rental insurance and non-travel goods with a lower APR is. One part of the explanation may lie in the fact that auto rental insurance is associated with a purchase, while travel benefits may substitute for a purchase (e.g., a free airline flight). This does not account, however, for the lower APR associated with non-travel goods. (Unfortunately, the data set does not give examples of what is included in this category.) Another possibility is that people who value auto rental insurance and credits toward non-travel goods are somehow different from credit card users who seek travel-related bonuses. If the former groups are more credit worthy and/or heavier users of revolving credit than the latter group, then credit card issuers might be willing to compete for their business through both cost (lower interest rate) and benefit (goods and services and auto insurance) incentives.

There are fewer associations in the FEE equation. As one might expect, longer grace periods and a fixed interest rate carry with them the expense of a higher annual fee. The availability of all eight benefit factors is unrelated to the size of the annual fee. Thus, to the extent that consumers must pay a penalty for benefit factors such as travel discounts, the payment is more likely to work through higher interest rates than higher annual fees.

Overall, the results suggest that a number of credit card benefits are available at no interest rate premium if one is willing to shop among credit cards. The only benefit that is likely to involve a higher interest rate is the ability to earn travel discounts.

Table 3: Tobit Analysis of Annual Fees

VARIABLE	COEFFICIENT	T-RATIO
Constant	-18.33	-2.71*
GRACE	.99	3.78*
APRFIXED	7.36	2.45*
REBATED	7.32	1.31
WARSECD	2.04	.42
ACCIND	2.17	.66
TRAVELDD	1.29	.27
RENTAD	-4.07	-.83
NONTRAD	-1.44	-.20
REGISD	-.46	-.09
OTHERD	-2.86	-.84
SIGMA	15.71	12.26*

N = 154; Chi-Square = 28.14*; * = p < .05

Conclusions

The research presented in this paper is admittedly preliminary, but it raises questions for future research as well as issues for consumer educators and consumer policy makers. The most immediate research need is to better understand the nature of the tradeoffs between the costs and benefits of credit cards offering rebates, premiums, and other "free" items. Although the research reported here focused on the two cost factors most likely to be relevant to consumers in general (APR and annual fees), interest rates may not be very important to consumers who pay their monthly balance in full. Future research might incorporate data on cards, such as those offered by American Express, that offer benefits but rely exclusively on costs factors other than interest rates.

An additional research challenge is quantifying the value of various credit card benefits. There are anecdotes about consumers who find it profitable to take airline flights just for the value of the frequent flyer miles they earn, but what mental calculus do consumers use to value frequent flyer miles? One promising approach might be to determine consumers' willingness to pay for frequent flyer credits. For example, one might ask a sample of frequent flyer members how much they would be willing to pay in cash for the right to buy 10,000 increments of frequent flyer credits. (This would be analogous to some methods used to judge the value of food stamps.) One would want to examine variation in consumer willingness to pay based on various characteristics of consumers (e.g., business vs. pleasure traveler) and airline frequent flyer programs. Similarly, one would want to quantify the discounts for example, most consumers trade a $500 credit toward their next purchase of a Ford vehicle for $300 in cash today?

A further research issue is whether credit cards that offer consumers rebates or premiums represent a subsidy from less affluent to more affluent consumers. If so, most consumer researchers and consumer policy makers probably benefit from the subsidy and might not want to notice it. Fairness and curiosity nevertheless demand that an effort be made to address the nature and size of any such subsidy.

Consumer educators also have a large task in teaching consumers how to minimize the costs and maximize the benefits of various credit cards. To cite a personal example, I am not a credit revolver, so I recently applied for an American Express card in the hope of earning huge numbers of "free" frequent flyer miles on Delta Airlines. I faced an immediate expense of $55 for the American Express card. Only then did I realize that I wouldn't earn any mileage credits until I had charged $5000 in merchandise and that there was a $25 fee to participate in the Membership Miles program. With my purchasing patterns, this would take me about a year, at which point it would be time to pay the annual fee for the card again plus a $25 fee for the Membership Miles program. Finally, I considered the fact that for every dollar I charged on my American Express card, I would be foregoing the cash rebate I currently earn on another credit card. When I finally sat down to calculate the cost of earning frequent flyer credits, I realized that, even with a 5000 mile enrollment bonus, it would take me five years and cost me about $550 to earn 30,000 frequent flyer miles. And then I'd probably want to take my "free" flight during a blackout period! In short, consumer educators need to help people understand that rebate and frequent flyer programs may not be very beneficial even to consumers who do not revolve their credit, let alone to those who carry a monthly balance.

Finally, consumer policy makers should consider whether the disclosure of the terms of credit card offers is sufficiently clear and conspicuous. Issuers of credit cards are already subject to a plethora of disclosure rules, but we have little evidence that these disclosures are found and used by consumers. If evidence suggests that consumers are experiencing difficulty in making well informed decisions about credit cards, additional disclosure requirements may be warranted.

To date, the proliferation of credit cards offering rebates, premiums, and other incentives has largely gone unstudied. Everyone is attracted to the chance of getting something for nothing, but this particular gift horse merits closer examination.

References

Auriemma, Michael (1994), Bank-card strategies: weigh your choices, Bank Management (September/October), 22-26.

Consumer choices increase in credit marketplace Due to "co-branding," (1994), Financial Responsibility. New York: American Express, (Summer), p.1.

Do credit card enhancements benefit the consumer? (1994), Credit World (September/October), 18-21.

Federal Reserve Bulletin (1995), V. 81, No. 6, p.A39

Lucas, Peter (1993), Counterpunching cobranded cards, Bank Management (July), 41-44.

Nixon, Brian (1994), The kitchen sink, please, Savings & Community Banker (July), 29-33.

Nocera, Joseph (1994), A piece of the action. NY: Simon & Schuster.

Proxmire, William (1983), credit card surcharges should be permitted, At home with consumers, 4 (4), (December), .2.

Rebate and frequent flyer credit cards, Salem, Virginia: Bankcard Holders of America, (June), 1-6.

Shop: the card you pick can save you money (1995). Washington, D.C.: Federal Reserve System.

Warner, Fara (1995), Charge! Credit-card firms set for battle, Wall Street Journal (April 27), 88.

Endnotes:

1. Professor, Family and Consumer Studies. University of Utah, 228 Emery Bldg., Salt Lake City, UT 84112.
2. Professor, Family and Consumer Studies.

Refund Anticipation Loans and the Consumer Interest: A Preliminary Investigation

This preliminary study investigated the behavior, satisfaction and knowledge of 49 consumers who received a refund anticipation loan (RAL) in 1995 or a previous year. Results indicated that nearly half did not realize that quick refunds were RALs. Respondents who received earned income credits (EICs) were more likely to be aware that quick refunds were RALs. Consumer satisfaction declined in 1995 because of the increased length of time it took respondents to receive refunds.

Joan Koonce Lewis, University of Georgia[1]
Roger Swagler, University of Georgia[2]
John Burton, University of Utah[3]

Introduction

As the name implies, refund anticipation loans (RALs) are personal loans secured by an anticipated refund on the consumer's federal income tax. A number of important features of RALs follow from the elements of this definition:

1. because RALs are *fully secured*, the lender assumes little or no risk;
2. RALs are *short-term* loans, covering only the period while the taxpayer's return is being processed by the Internal Revenue Service (IRS). Indeed, because RALs are typically associated with electronic filing, they are *very* short term;
3. although RALs are provided by private financial institutions, the federal government plays a critical role through the *IRS*.

Because banks generally charge less for secured loans (the rate may be as low as 2 to 3% above that paid on certificates of deposit), one might suspect that RALs would offer the consumer an economical source of short-term credit. The IRS's very involvement, after all, serves to legitimize the activity; given the federal government's role, one might believe that the borrower would be well protected. One would be wrong on both counts, which suggests that RALs deserve closer examination.

That examination must begin with the manner in which refund anticipation loans are marketed. Readers who are unfamiliar with RALs have likely seen advertisements for *fast, quick* or *rapid* refunds during income tax preparation season. Those quick refunds are actually RALs, although advertisements give no hint of that. Thus, consumers are initially attracted to RALs by incomplete, potentially misleading, information.

Although there are several steps involved, the mechanics of RALs are relatively straightforward. The tax preparer completes the consumer's return, determining the amount of the refund. The consumer then applies for a conventional loan in the amount of the refund through the bank or finance company which cooperates with the preparer. Prior to 1995, the return would be filed electronically with a request that the IRS issue an immediate *direct deposit indicator* (DDI) to the financial institution making the loan (Kahan, 1995). The DDI guaranteed that no back taxes or other obligations were owed against the refund. With the guaranteed refund as collateral, the financial institution completed the loan and the consumer received his or her refund within three or four days of filing. A week or so later, the refund would be deposited directly with the lending institution to pay off the loan.

Despite the low risk and short time period, RALs are costly to consumers. Representative charges are given in Table 1. Except for the highest categories of refunds, APRs are well over 100%. This is masked by what may seem to be a modest fee. The taxpayer with a $400 refund would pay just $29 for an RAL. However, given the small amount involved and the fact that the actual loan period may be as short as one week, the actual charge is very high.

Although tax preparers became heavily involved in RALs, some tax accountants acknowledged that RALs were harmful to consumers. One accountant called RALs "bad business for the taxpayer," and asked: "why should the accountant be encouraging his client to make a bad decision?" (*Death,* 1995, p. 24). Another

went further, writing the Commissioner of the IRS to urge him to "outlaw refund anticipation loans completely" (*Death,* 1995, p. 24).

Table 1
The Cost of Refund Anticipation Loan*

Loan Range	Finance Charge	Loan Amount/APR
$ 300 - 500	$29	$400/204%
501-1,000	49	750/183
1,001-1,500	59	1,250/133
1,501-2,000	69	1,750/111
2,001-2,500	89	2,250/111
2,501-3,000	89	2,750/ 91
3,001-plus	89	3,250/ 77

*Source: Tharpe, 1995.

These sentiments were echoed by many consumer educators, who warned of the high costs of RALs (Center, 1994). The insidious nature of RALs was emphasized by a financial counselor who works with public housing tenants. She noted that the annual federal income tax refund was the only chance many low-income families had to accumulate cash (Clark, 1995). This is especially significant for families receiving the Earned Income Credit (EIC). With a refund, the family simply gets its own money back, but the EIC represents a net gain. The RAL fee erodes any benefit the family may gain from the EIC.

The market for RALs changed in December, 1994, when the IRS announced that because of suspected fraud in electronic filing, DDIs would no longer be issued automatically (Internal Revenue, 1994). Without the guaranteed refund, financial institutions faced increased risks, leading several banks which had issued significant numbers of RALs to cease making such loans. Some large preparers were able to make new arrangements with lenders; H&R Block, for example, offered RALs through Beneficial Finance (Accounting, 1994). The effect of the IRS decision was to restrict the availability of RALs somewhat and lengthen the time it took consumers to receive their refunds.

The time period was increased still further when the IRS announced that it would examine *all* returns claiming an EIC, which had apparently been subject to particular abuse (Kahan, 1995). This change had nothing directly to do with RALs, but since many taxpayers claiming the EIC also opted for quick refunds, there was still an impact.

These changes were made to reduce fraud, *not* for the sake of consumer protection. Ironically, however, they did provide some consumer protection by making RALs less available and less attractive (because of the longer wait). With an apparent focus on the time involved and not the cost, consumers responded very negatively to the changes.

At this writing, the situation with respect to RALs remains fluid. As predicted, the number of returns filed electronically declined in 1995. Nevertheless, RALs did not disappear. Little is known about the consumer perspective. Although RALs appear to be popular with some groups, it is not clear how knowledgeable consumers are. Neither has the impact of the changes made by the IRS in 1995 been assessed.

In response to such questions, this preliminary study was undertaken. The study examined the behavior, satisfaction and knowledge of consumers who received a quick refund in 1995 or a previous year. The objectives were to examine the length of time it took consumers to receive their tax refund, how satisfied consumers were with their quick refund services, how likely consumers were to use quick refund services next year, their eligibility for an earned income credit, and their knowledge of the cost and loan aspect of quick refund services.

Methodology

Sample and Data Collection

Data for this study were collected by graduate and undergraduate students in the Spring and Summer 1995 outside two national discount stores in Georgia. Respondents were asked a screening question to determine whether they had used quick refund services before. Respondents who had used these services were then asked to participate in the study. A total of 49 respondents who had used quick refund in 1995 or a previous year participated in the study.

As is indicated in Table 2, most participants in the study were low-income, nonwhite and female. Income is of special note; over half of the sample was in the lowest quintile of the income distribution. Median income for the sample was below the poverty line for a family of three.

Data Analysis

Information on the measurement of variables is given in the Appendix. Frequencies, percentages and means were used to describe the demographic characteristics of the sample and the behavior, satisfaction and knowledge of respondents who used quick refund services. Repeated measures analysis of variance (ANOVA) and the chi-square test of independence were used to determine relationships

among behavior, satisfaction and knowledge.

Findings

Consumer Knowledge

The most striking finding from the study concerned consumer misinformation. Nearly half the sample did not realize that "quick" refunds were actually loans (Table 3), although all applicants presumably had to complete truth-in-lending forms. This question was asked in as neutral a way as possible. Respondents were asked: "Was your refund the kind that involved a loan." Because all quick refunds are RALs, anyone answering "no" was misinformed.

Table 2
Demographic Characteristics (n=49)

Variable	Frequency	Percent	Means (SD)
Age			32.78 (8.96)
Race			
White	21	42.9	
Nonwhite	28	57.1	
Gender			
Male	17	34.7	
Female	32	65.3	
Income($)			
Below 4,999	10	20.4	
5,000-9,000	10	20.4	
10,000-14,999	7	14.3	
15,999-19,999	7	14.3	
20,000-29,000	7	14.3	
Above 30,000	8	16.3	

Respondents' knowledge of the cost of quick refunds was mixed. Respondents reported paying from $6.00 to $165.00 the last time they used quick refund services with a mean of $63.29. However, 34.7% indicated that the amount paid included the tax preparation fee as well as the quick refund service fee. When asked how much the quick refund itself cost, reported amounts ranged from $15 to $85. Based on the information in Table 1, the lower range of figures seems questionable; however, most responses on costs were reasonable.

Table 3
Loan and Cost (n=49)

Variable	Frequency	Percent	Means (SD)
Loan			
No	24	49.0	
Yes	25	51.0	
Cost			63.29 (30.30)
Quick Refund or Total Cost			
Quick Refund	21	42.9	
Total Cost	17	34.7	
Don't Recall	11	22.4	
Quick Refund Cost			41.00 (24.27)

The Earned Income Credit

Given the income levels reported above, it isn't surprising that over half the sample received the earned income credit (Table 4). What is somewhat surprising is the relationship of receiving an EIC and recognition that the quick refund was a loan. In a statistically significant relationship, respondents who received an EIC were *more* likely to be aware that their quick refund was a loan. Because EIC recipients represented the lower range of incomes within the sample, information did not correlate with income.

Table 4
Earned Income Credit (EIC) and Loan (n=49)

Variable	Frequency	Percent
Earned Income Credit		
No	23	46.9
Yes	26	53.1

	Not A Loan		Loan	
	Frequency	Percent	Frequency	Percent
Earned Income Credit				
No	16	69.57	7	30.43
Yes	8	30.77	18	69.23

Chisq 7.351; $p<.05$

One possible explanation is that respondents who were aware of and applied for the EIC were better informed generally about how the system works. That would include not just information about the IRS, but about related issues of preparation and refunds also. It may also be that because the EIC represents a net gain in income, recipients felt they were paying for the loan with the government's money.

Impact of the IRS's Changes in 1995

Responses from the sample reflect the impact of the procedural changes the IRS made in 1995. Most notably, the use of RALs in 1995 fell by over 30% from earlier years (Table 5). Those who did get quick refunds in 1995 had to wait longer. It took respondents from 4 to 120 days to receive their refunds in 1995, with a mean of 31. That was up sharply from previous years, when the mean was 6 days (Table 6).

As a result, consumer satisfaction declined. In 1995, 46.2% of the respondents were dissatisfied, but only 4.9% were dissatisfied in a previous year. In contrast, only 53.8% of respondents in 1995 were satisfied compared to 95.1% in a previous year. Further, the mean level of satisfaction of respondents in 1995 was 3.15 compared to 4.80 in a previous year. In four out of five cases, respondents indicated that it was the longer wait for their refund which caused their dissatisfaction. This relationship was statistically significant. As shown in Table 6, the mean number of days it took respondents who indicated that they were dissatisfied to receive their income tax refund was 47.182 compared to 15.667 days for those who were satisfied.

Consumers' plans to use quick refund services in the future mirror the satisfaction findings. Fifty-four percent of the sample indicated that they would not use the quick refund service next year while 22.9% said they may use it and 23% said they would use it again. These findings are subject to alternative interpretations. Most respondents indicated they would not use such services again. Despite relatively high levels of dissatisfaction, however, nearly half indicated that they either would or might use RALs in the future.

Conclusions and Implications

The most obvious conclusion from the study concerns consumer knowledge. Nearly half the respondents were unaware of the nature of their refund, a percentage which is hardly consistent with good policy. The need for consumer education is clear but more fundamental changes may be required.

Table 5
Quick Refund and Likely (n=49)

Variable	Frequency	Percent	Means (SD)
1995 Quick Refund			
No	23	46.9	
Yes	26	53.1	
Previous Year Quick Refund			
No	8	16.3	
Yes	41	83.7	
Likely To Use Next Year			
Definitely Not	26	54.2	2.83 (2.01)
Maybe	11	22.9	
Definitely	11	22.9	

One possibility would be to alter the way in which *quick* or *rapid* refunds are marketed. As noted earlier, there is no mention of loans in the marketing of quick refunds. When the first mention of a loan is the required truth-in-lending disclosure, it isn't altogether surprising that some consumers might miss the fact (especially if the disclosure is presented as "just some government forms"). Because this is essentially an advertising question, Federal Trade Commission action may be warranted.

The high proportion of respondents reporting the earned income credit is consistent with the IRS's decision to examine all returns claiming an EIC in 1995. In a sense, the federal government is paying for the cost of the RAL when taxpayers claim the EIC, which frustrates the intent of the transfer. As noted, the link between the EIC and knowledge about the nature of the RAL is not easily explained.

The findings with respect to satisfaction are also consistent with IRS's actions in 1995. It isn't surprising that satisfaction should be linked to time, because there is little reason to go to the expense of getting a "quick" refund if it doesn't arrive quickly. However, it is worth noting that the cost of the service was rarely linked to satisfaction. Consumers seemed willing to pay tremendously high APRs as long as they received their money quickly.

Willingness to pay dearly for *immediacy* links RALs to other services such as rent-to-own programs, pawn shops and check cashing-outlets which tend to be patronized by lower-income consumers. Indeed,

immediacy and high implicit APRs are among the common elements which have led some researchers to group these services (including RALs) together as the *alternative financial sector* (Swagler, Burton and Lewis, 1995a; 1995b).

Table 6
Length of Time and Satisfaction

Variable	Frequency	Percent	Means (SD)
1995 Length of Time			30.74 (26.11)
Previous Year Length of Time			6.49 (5.00)
1995 Satisfaction			3.15 (2.03)
Previous Year Satisfaction			4.80 (0.87)
1995 Reasons For Dissatisfaction			
Took Too Long	9	81.8	
Fee Information not Given	1	9.1	
Cost Too Much	1	9.1	
Previous Year Reasons For Dissatisfaction			
Cost Too Much	2	100.0	

	Satisfied (n=12)	Dissatisfied (n=11)	F-Value
1995 Length of Time	15.667	47.182	12.88*

F=12.88; p<.05

Note that prior to 1995, respondents reported high levels of satisfaction with quick refunds, even though nearly half of them were unaware of the true nature of the service. This may be somewhat disheartening, but actually relates to consumer motivation. The key element for RAL patrons was speed, not cost. The fact that low-income consumers should be unconcerned about cost suggests that educational efforts need to go beyond the particulars of RALs to more fundamental elements of time preference.

All generalizations, of course, must be qualified by the nature of the sample, which was relatively small, nonrandom and limited to one locale. However, income levels within the sample are representative and the findings with respect to satisfaction are consistent with expectations. Additionally, the key finding on knowledge stands out so clearly, that it may transcend limitations of the sample. Thus, the evidence seems sufficient to suggest that RALs deserve additional attention from those concerned with the consumer interest.

A final point concerns the involvement of the federal government in RALs. It is evident from the findings that IRS involvement was a key element in the success of RALs. When the IRS limited direct deposit indicators, consumer interest declined. One might well paraphrase the comment of the accountant quoted above and ask: "why should the *federal government* be encouraging *taxpayers* to make bad decisions?" That question should give pause to anyone who is tempted to equate government activity with consumer protection.

Appendix: Measurement of Variables

Respondents use of quick refund services was measured by answers to the following two questions: "Did you receive an income tax rapid refund this year?" and "Did you receive an income tax rapid refund before this year?" The length of time it took respondents to receive their income tax refund was measured by asking respondents to indicate the number of days it took them to receive their refund from the time they filed their tax return this year and/or an earlier year.

Satisfaction with quick refund services was measured by two likert-type items. These items were "Using the following scale, circle the number which best indicates how satisfied you were with your quick refund service this year?" and "Circle the number which best indicates how satisfied you were with your quick refund service before this year?" Responses ranged from dissatisfied (1) to satisfied (5). Responses were recoded into two categories which were dissatisfied (1) and satisfied (2). Respondents whose original responses equalled 1 or 2 were asked to list all the things which dissatisfied them about their quick refund. Respondents were asked how likely they were to use the quick refund service next year and responses ranged from definitely not (1) to definitely (5). Responses were recoded as definitely not (1), maybe (2) and definitely (3).

Respondents were asked the dollar amount paid for the quick refund service the last time they used it along with the following two follow-up questions. "Was the amount you paid just for the quick refund service or did that include the cost of tax preparation?" Respondents answered quick refund, total cost or don't recall. "If you answered "Total Cost," what did the quick

refund itself cost?" Respondents were asked if their refund was the kind that involved a loan and if they applied for an earned income credit (EIC) the last time they used quick refund. Dichotomous responses were provided to these two questions. Age was a continuous variable and race, gender and income were categorical variables.

References

Center on Budget and Policy Priorities. (1994). What's wrong with quick refunds? Washington, DC: Author.

Clark, G. (personal communication, 1995). Director of Resident Services, Athens Housing Authority.

H&R Block broadens refund anticipation loan. (1994, December 7), Accounting Today.

Internal Revenue Bulletin. (1994). U.S. Department of the Treasury, Internal Revenue Service (No. 1994-52).

Kahan, S. (1995, June). The electronic filing debacle, Practical Accountant, *2*(6), 24-32.

Swagler, R., Burton, J., & Lewis, J.K. (1995a). The alternative financial sector: An overview. Advancing the Consumer Interest, 7(2), 7-12.

Swagler, R., Burton, J., & Lewis, J.K. (1995b). The operations, appeals and costs of the Alternative Financial Sector: Implications for financial counselors. Financial Counseling and Planning, 6, 93-98.

Tharpe, J. (1995, February 6). IRS puts the brakes on those rapid refunds. The Atlanta Journal/Constitution, p. E2.

The death of RALs? (February, 1995). Accounting Technology, 11(2), 24-25.

Endnotes

1. Associate Professor, Department of Housing and Consumer Economics, University of Georgia, Dawson Hall, Athens, GA 30602-3622.
2. Associate Professor, Department of Housing and Consumer Economics.
3. Associate Professor, Department of Family and Consumer Studies.

Household Expenditures on Apparel: A Complete Demand System Approach

Apparel expenditure patterns were analyzed using the Consumer Expenditure Survey (1980-1990) and price data. The Linear Approximation of Almost Ideal Demand System was used. Price elasticity was estimated to be -1.75, but was of greater magnitude for low income households (-2.50 for households with less than $5,000 permanent income). Trade restrictions and regulations that increased prices would have a substantial impact on the quantity purchased by lower income households.

Jessie X. Fan, University of Utah[1]
Jinkook Lee, University of Tennessee[2]
Sherman Hanna, The Ohio State University[3]

Winakor (1989) noted the decline in the budget share for apparel in the United States and proposed and evaluated possible reasons. Winakor identified three issues to be addressed. First, a complete set of cross-sectional data that corresponds to the aggregate time series was needed. Second, changes in quality of apparel and limitations of price indexes should be taken into account. Third, apparel expenditure should be analyzed with consideration of confounding effects of expenditure on other commodities.

Most empirical studies have failed to address these issues. Apparel expenditure studies have relied on either cross-sectional household survey data for a certain year or aggregated time-series data from national income accounts. Most cross-sectional Engel studies have used a single equation approach, by assuming that a household's decision about expenditure on apparel was independent of its decision about expenditure on other commodities. For studies using aggregate time-series data, the complete demand system approach with either imposed or testable theoretical restrictions gained in popularity during the last two decades. However, the emphasis of these studies has been on aggregated price and income elasticities, with little attention to the underlying preference structures of households due to data limitations. Thus, most studies based on aggregate time-series data could not shed much light on the effects of social and demographic changes. In addition, there has been a significant discrepancy in the existing estimates of income elasticities between studies using cross-sectional data set with no price information and studies using time series data set with a few social and demographic variables (Mokhtari, 1992).

Addressing all of the above issues, this study attempts to shed further lights on household expenditures on apparel. Two important features make this study very unique. First, a complete set of cross sectional data that corresponds to the time series was used in this study combined with price index data set. Second, apparel expenditure was analyzed using a complete demand system approach, which takes the simultaneity of various household decision into account. The complete demand system approach is more theoretically as well as empirically sound than the single equation approach. By applying a theory-consistent method, reliable estimates for elasticities and demographic effects could be expected.

Review of Literature

Traditionally, food, housing, and apparel have been considered to be the basic necessities of life. In contrast to food and housing, research on determinants of apparel expenditure has been meager (Jackson, 1992; Norum, 1989; Wagner, 1982). However, recent studies (Bryant & Wang, 1990; Courtless, 1987; Mokhtari, 1992; Nelson, 1989; Norum, 1989; Wagner, 1986; Wagner & Hanna, 1983; Winakor, 1986, 1989) provided valuable contributions to the analysis of apparel expenditures. The review of various determinants of apparel expenditures, which include age, household composition, household size, education, employment status, residential location, and race, provided a basis for incorporating demographic variables into the demand system.

In economic theory, income is considered to be the most important determinant of expenditure on any one good. Two measurements of income have been widely used in the analysis of cross-sectional data - disposable personal income (Crockett & Friend, 1960; David, 1962; Dardis, et al., 1981) and total current consumption expenditures (Prais & Houthakker, 1957;

Winakor, 1962; Dardis, et al., 1981; Nelson, 1992). Houthakker and Taylor (1970) found an evidence that total expenditure was more effective in explaining expenditures for specific categories of goods than was disposable personal income. This finding was confirmed by Dardis, et al. (1981). Income elasticities on apparel expenditure have been reported to be positive. However, differences in elasticity values have been noted depending on the definition of income. When disposable income was employed, income elasticities were usually estimated to be 0.5-0.6 (Fareed & Riggs, 1982; Dardis et al, 1981; Houthakker & Taylor, 1970; Bryant & Wang, 1990; Lazear & Michael, 1988)). On the other hand, when total expenditure was used as a proxy for income, income elasticities were estimated to be greater than one (Norton & Park, 1987; Dardis et al., 1981; Norum, 1990; Nelson, 1989). Millican (1967) estimated income elasticities at various income levels using the 1960-61 CES data set. The range of income elasticities was from 0.82 to 1.70, where demand for apparel was most income elastic for the lowest income consumer units, and the demand was most inelastic for middle income consumer units. Garner (1993) addressed the same issue using the Lerman and Yitznaki co-variance method for decomposing the Gini coefficient by factors. From the decomposition, nonparametric estimates of income elasticities were derived. The results showed that consumer units with higher income spent relatively more on apparel than do other consumer units.

Taking a longitudinal approach, Hamburg (1958) suggested that the differences between apparel expenditures of high and low income families were relatively less in the 1950's than in the 1930's. Winakor (1962) tested this proposition using time-series data, 1929, 1931-1941, and 1946-1958, and did not find supporting evidence.

The price elasticity of apparel has been found to be negative in all cases. However, the empirical estimates of price elasticity vary from one study to another. For example, inelastic price elasticity was reported by Winakor (1962) using 1929 through 1958 data set and Norum (1990) using 1929-1987 data set. However, Mokhtari (1992) reported that apparel expenditures were highly price elastic (-1.9) in the short run, while in the long run this elasticity settled at unity (-1.0), using an error correction model for the same period of time as Norum (1990). Bryant and Wang (1990) also found unitary price elasticity for apparel in their study.

Previous cross-sectional studies on apparel expenditures have generally investigated the effects of family composition or stage in the family life cycle, education, occupation, residential location, and race. For a detailed review of the literature of apparel expenditure, see Norton and Park (1986).

Age has been found to have a nonlinear relationship with apparel expenditures (Wagner, 1982). That is, apparel expenditures increased during childhood and adolescence, peaked during early adulthood, and decreased steadily during maturity and older adulthood. Hamburg (1960) also found that age had impacts on income elasticities for apparel expenditures: the income elasticity of apparel expenditures increased steadily with age, and apparel was a luxury good for the older consumer. However, when Fareed and Riggs (1982) compared the income elasticities of older consumers (age 65 or older) with younger consumers' (age 64 or younger), they did not find much difference.

Conflicting results have been found for the impacts of marital status: Household with married heads were found to spend less on apparel relative to other households in the Dardis et al. (1981) study. This result was not supported by the Frisbee (1985) study. Frisbee did find, however, that households headed by males had lower annual apparel expenditures than households headed by females. The presence of a child less than 6 years of age had a negative effect on apparel expenditures when disposable personal income was used but no effect was found when total expenditure was used as a proxy for permanent income. Wagner and Hanna (1983) found that the presence of a child under 12 years of age did not significantly affect household apparel expenditures.

Apparel expenditures have been found to be positively and significantly related to family size (Crockett & Friend, 1960; Hamberg, 1960; Houthakker & Taylor, 1970; Dardis et al., 1981). While large families have been found to spend less per person on apparel than small families, their budget share for apparel has been found to be larger than that of small families (Britton, 1966; Mork, 1967). Income elasticities of apparel expenditures were found to be the highest for one person households, decreasing among families of two, three, four, and five persons, and then increasing again for families of six or more.

Education of both the household head (Life, 1957; Linden, 1965; Dardis et al., 1981; Wagner, 1982) and the spouse (Hager & Bryant, 1977) was found to be positively related to apparel expenditures. Specifically, Kundel (1976) found that higher levels of education were correlated with more formal apparel worn to work by the husband and with preference of the wife for higher priced garments. Only Hafstrom and Dunsing (1972) found education of the male household head was not significantly related to apparel expenditures.

Household headed by workers spent more on

apparel than household headed by unemployed or retired persons (Wagner, 1982; Life, 1957; Linden, 1965; Dardis et al., 1981). Households with employed wives had higher expenditures on apparel than did households with unemployed wives (Deweese & Norton, 1991; Wagner, 1982; Linden, 1965; Dardis et al., 1981). Vickery (1979) also found that wife's employment hours (full- or part-time) influenced apparel expenditures. Because apparel was one of the work-related expenses of women in the paid labor force, increased household expenditures for apparel sometimes were attributed to the wife's job-related wardrobe (Dardis et al., 1981; Vickery, 1979). Moehrle (1990) found that high income nonworking elderly spent higher proportion of their income on apparel compared to high income working elderly.

Significant variations among occupational categories were found to be minimal (Nelson, 1989). However, white collar workers were found to spend significantly more apparel than blue collar workers (Dardis et al., 1981). Nelson (1989) found that apparel expenditures on boys were higher if the mother was in a blue-collar, part-time jobs; otherwise, the mother's occupation significantly affected only her own expenditure.

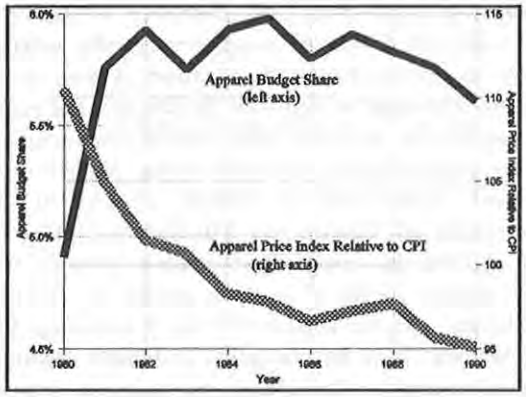
Cross-sectional data have consistently shown that the highest apparel expenditures occur in the Northeastern United States (Life, 1957; Lindon, 1965; Britton, 1968; Erickson, 1968; Dardis et al., 1981). The lowest expenditures have been found in the South and West. Regional differences reflected variations in income, climate, and lifestyle (Britton, 1966, 1968; Erickson, 1968). Although households in urban areas typically spent more on apparel and were more income elastic than rural households (Dardis et al., 1981; Frisbee, 1985; Life, 1957; Linden, 1965), rural households spent a higher proportion of their budgets on apparel than did urban households. The difference in proportions may be partly attributed to the fact that rural households spent a lower proportion of their budgets on food than did urban households (Britton, 1966).

The effect of race on apparel expenditure has been inconclusive. Dardis et al. (1981) and Wagner (1982) found that non-black households spent significantly less on apparel than otherwise similar black households. On the contrary, Linden (1965) found whites to spend more on apparel than nonwhites, while Hager and Bryant (1977) found race to be insignificant.

The Data

Prices were added to a special dataset of the 1980-1990 Consumer Expenditure Survey (CES). See Fan (1993; 1996) for a description of the process of creating the combined dataset for this study. The total sample size was 8651 households who were interviewed for a whole calendar year during 1980 to 1990. Apparel had comparatively low price increase during this time period, 36%. The growth in imported apparel in the U.S. market might have contributed to the low price increases. Figure 1 illustrates the relative price changes for apparel over the 11-year sample period as well as the changes in mean apparel budget share.

Figure 1.
Time Trend of Apparel Price Index Relative to Overall CPI, and of Apparel Budget Share, 1980-90.



The Model

The neoclassical consumer demand theory provided a theoretical framework. Given a budget constraint and a utility function representing consumer preferences, the bundles of commodities that maximize consumer utility subject to the budget constraint can be expressed as a function of relative prices of goods, household income and household preferences. Empirically, apparel expenditure analyses based on the neoclassical economic theory have been investigated using either cross-sectional or time-series data. Single equation cross-sectional studies have used different functional forms, including the linear form (Hager & Bryant, 1977; DeWeese & Norton, 1991), semi-logarithmic form (Norum, 1989), and the double-logarithmic form (Dardis, Derrick, & Lehfeld, 1981; Wagner & Hanna, 1983; Frisbee, 1985).

Complete demand system approaches, when feasible, are better than single equation approaches, not only because of the theoretical and empirical soundness, but also because they take into consideration the simultaneity of various household decisions. Since at a given time, a household's decision-making about budget

allocation for different commodities and services is likely to be affected by some common unmeasurable or omitted factors, the disturbances in different expenditure equations in the system could be correlated. With the existence of this kind of contemporaneous correlation, the use of seemingly unrelated regressions (SUR) can improve the efficiency of parameter estimation compared to separate least squares estimation (Judge, et al., 1982).

A complete demand system approach was used to analyze the budget allocation patterns of the households in the sample. Incorporating 23 demographic variables into the demand system facilitated capturing the many faceted effects of household characteristics on household budget allocation behavior. Also, mean income and price elasticities could be estimated and compared across groups of households with different characteristics. Given that many demographic variables were incorporated into the demand system, it was important to select a simple but flexible demand system to execute the analysis. After careful examination of different alternatives, the linear approximation of the Almost Ideal Demand System (LA/AIDS) first introduced by Deaton and Muellbauer (1980) was selected for this study. Demographic variables were incorporated using a method similar to Blundell, Pashardes and Weber (1993) and a two-stage tobit method was used for correction of limited dependent variable problem. Specifically, by denoting E_i as the expenditure on commodity i, D as a vector of demographic variables, P as a vector of prices, M as total expenditure, a probit equation was estimated for each expenditure category at the first stage:

$$Prob(E_i>0) = \tau_i (M, P, D) = \Sigma\tau_i X. \quad (1)$$

The estimated ϕ_i (the density function of the standard normal distribution evaluated at $\Sigma\tau_i X$ for commodity i) and Φ_i (the cumulative probability function of the standard normal distribution evaluated at $\Sigma\tau_i X$ for commodity i) were then incorporated into the second stage demand analysis (Maddala, 1983; Greene, 1990).

Finally, the LA/AIDS system with demographic variables and with correction for limited dependent variable was then specified as:

$$W_i = \alpha_{i0} + \sum_{h=1}^{m} \alpha_{ih} D_h + \sum_j \gamma_{ij} \log P_j + (\beta_{i0} + \sum_{h=1}^{m} \beta_{ih} D_h) \log(M/P^*) + \sigma_i [\phi_i - (1-\Phi_i) \sum_{h=1}^{n} \tau_{ih} X_h] \quad (2)$$

Parameter restrictions concerning adding up, homogeneity and symmetry were imposed in the final demand system estimation. Homogeneity and symmetry restrictions were tested and were not rejected with this data set. Elasticities were computed using the bias-corrected formula derived by Alston, J.M.; Foster, K.A.; Green, R.D.(1994).

The major dependent variable of concern was the budget share for apparel, including men's, boys', women's and girls' apparels, footwear, and other apparel products and services. Since household decision-making was treated as a simultaneous process, twelve other expenditure categories were also included to form a complete demand system. These other twelve expenditure categories were: food, food away from home, shelter, utility, household equipment and operation, entertainment, transportation, health care, alcohol, tobacco products, and personal care.

The income variable used was the BLS defined total expenditure minus social security payment, cash contribution, life insurance payment, and net vehicle outlay. The rationale for subtracting social security payment was that for most households, social security payment was relatively fixed for a given period of time and was withheld from their take-home income and thus was not available for their normal expenditure. The exclusion of cash contributions, life insurance payment and net outlay for vehicle purchase was mainly due to data set limitations.

While the definitions of total expenditure and price variables were well documented and relatively standard in budget allocation studies, a wide variety of demographic variables have been used. The selection of demographic variables in the LA/AIDS demand system closely followed the results of previous studies, while data availability and equation system integrity were also taken into consideration. Demographic variables entered into the model included ethnic dummy variables, age, gender, education dummy variables, occupation dummy variables, labor market participation dummy variables, number of earners, family composition dummy variables, tenure (own with or without mortgage or rent), region dummy variables, and a continuous year variable to capture any continuous time trend. Age was interacted with the year variable to capture possible cohort effects.

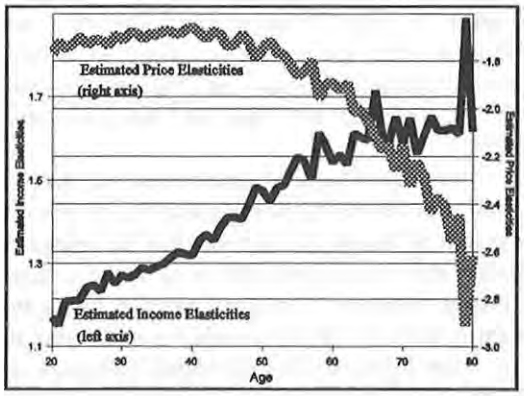
Results and Discussion

The LA/AIDS demand system was estimated using an iterative seemingly unrelated regression (ITSUR) method. About nineteen percent of variances of the budget share for apparel were explained by the set of

independent variables. The R^2s for other commodities in the demand system ranged from 0.10 for education and 0.48 for food at home. To ease comparison, quantity elasticities are presented. The estimated mean income elasticity of quantity was 1.46. The own-price elasticity was -1.75, indicating apparel was very price elastic during the sample period, and this result is consistent with Mokhtari (1992).

Figure 2 shows the relationships between age and the estimated income and own-price elasticities for apparel. Everything else controlled, the older the household reference person, the more income and price elastic the household. Households with a reference person older than 65 were the most income and price elastic group among all age groups, with an income elasticity of 1.63 and an own-price elasticity of -2.14, on average. Younger households seemed to have both low income and own-price elasticities. This may be because young households were starting to build their wardrobe collection, so they were less sensitive to income and price changes, whereas for old households, purchasing additional apparel was more like an addition to their collection, thus could afford the time to look for good value.

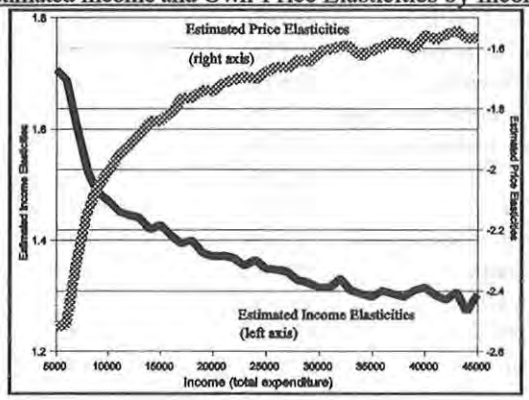
Figure 2.
Estimated Income and Own-Price Elasticities by Age



Estimates of income and own-price elasticities by permanent income (total expenditure) are presented in Figure 3. Low income households were much more income elastic (1.87 for households with total expenditure less than $5,000) than households with high total expenditure level (1.27 for households with total expenditure more than $50,000). In terms of own-price elasticity for apparel, again, households with total expenditure below $5,000 were much more price elastic (with an average own-price elasticity of -2.50) than households with higher total expenditure levels, everything else controlled. This shows the low income group had an income elasticity for apparel about 40% higher than the highest income group, and a price elasticity about 80% higher than the highest income group.

There were small differences between ethnic groups in estimated mean elasticities. On average, White and Black non-Hispanic households had higher levels of income elasticities (1.47 and 1.48, respectively) than otherwise similar Asian and Hispanic households (1.34 and 1.21, respectively). In terms of own-price elasticities, Asian and White households were more price elastic (-1.80 and -1.76, respectively) than otherwise similar Black and Hispanic households (-1.69 and -1.67, respectively).

Figure 3.
Estimated Income and Own-Price Elasticities by Income



In order to understand how demographic variables affect households' budget share for apparel, marginal effects of demographic variables were estimated. The marginal effects of demographic variables were estimated for every household in the sample, and then means were estimated. Age, gender and ethnicity of the head had significant marginal effects on the budget share for apparel. Household composition, tenure choice and one of the location variables also showed significance. The estimated mean marginal effects for demographic variables are presented in Table 1.

Conclusions, Implications and Limitations

With the use of 11-years of CES data with price information, this study applied a LA/AIDS demand system approach with 23 demographic variables to analyze the patterns of household expenditure on apparel. The mean income elasticity for apparel in the U.S. from 1980-1990 was 1.46, suggesting that apparel

Table 1.
Estimated Marginal Effects of Demographic Variables on the Budget Share for Apparel

Variable	Marginal Effect	Significance Level
Age (Per 10 years)	0.02%	***
Female	0.76%	**
High school diploma	2.04%	*
Some college	0.95%	*
College degree	-0.66%	*
Number of earners	-0.27%	*
# children age < 5	-2.77%	***
# age 5-17	-0.97%	***
# age 18-64	0.59%	**
# age >64	-0.16%	*
Work full-time	2.74%	**
Self-employed	1.14%	*
White collar	0.67%	*
With home mortgage	1.30%	**
Own without mort.	0.41%	*
Year	-0.24%	*
Asian	-0.32%	*
Black, non-Hispanic	1.24%	**
Hispanic	0.65%	***
Midwest	0.28%	*
South	-0.01%	*
West	-2.91%	***

*** Both coefficients in the demand system are significant at least 90% level.
** One of the two coefficients in the demand system is significant at at least 90% level.
* Neither of the two coefficients in the demand system are significant at at least 90% level.

was a luxury good. The mean own-price elasticity for apparel was -1.75, suggesting that apparel was very price elastic. Households with low levels of total expenditure were more income and price elastic compared to household with high levels of total expenditure. The older the reference person, the more income and price elastic the household. These results suggest that trade restrictions and regulations that increase the price of apparel will have the largest relative impact on the amount of apparel consumed by low income and elderly households.

There are also implications for apparel marketers. By understanding differences in preference structure and budget allocation patterns of different subgroups of consumers for apparel consumption, marketers can tailor appropriate strategies to attract different types of consumers. For example, since older consumers are more price sensitive, it is important to provide apparel at lower prices to attract this group of consumers. On the other hand, younger consumers are relatively less price sensitive, which may indicate that there are important factors other than price that influence younger consumers' spending patterns. Reducing prices may generate a relatively larger response for Asians and Whites than for Blacks and Hispanics. Low pricing can generate a large impact on apparel quantity purchased by low income consumers.

The results from this study may be useful for future apparel expenditure studies. For example, in many apparel studies, the sample size is usually not very large so some of the ethnic groups, such as Asian-American households and Hispanic households, have to be combined with other large ethnic groups for the analysis to be executable. The results from this study suggest that when apparel expenditure is of concern, Black and Hispanic households tend to have higher budget shares for apparel than otherwise similar White non-Hispanic and Asian-American households. Further F-tests showed that the apparel expenditure patterns were significantly different between Black and White households, Black and Asian households, Hispanic and White households, Hispanic and Asian households, but not significant in any other two group comparisons. Therefore, when combining ethnic groups are necessary, in analyzing apparel expenditures, Black and Hispanic households can form one group, and White and Asian households another.

Another example of results important for future research is how to incorporate age and income variables. The results of this study suggested that the relationship of budget share for apparel and age or total expenditure are highly nonlinear. Therefore, when including these variables, nonlinear forms should be used rather than simple linear forms to make the estimation results more realistic.

The most important contribution of this study is that it is the first attempt to estimate not only income elasticities, but also price elasticities from household-level data and to compare them among different social subgroups. Given that the analytical method of this study was consistent with the underlying microeconomic theory, the plausibility of the estimates was enhanced and implications derived based on the estimation results were more reliable.

This study is subject to several limitations. The most serious problem was the data source. No consistent household level price data were available, so price data

were constructed using two different sources, with a higher level of aggregation than desired. The assumption that households in certain region/city size combinations faced the same price might not be realistic. Furthermore, given that the expenditure categories defined in this study are very broad, and households with different economic and socio-demographic characteristics could have purchased different commodity combinations, to what extent the average price indices matched the real prices consumers faced is an unanswered question.

In conclusion, a better, more consistent and comparable data source is crucial to improve the research on household budget allocations patterns for apparel consumption. A theoretically plausible, econometrically flexible, yet executable demand system is also desired to provide better, yet simpler results.

References

Alston, J. M., Foster, K. A. & Green, R.D. (1994). Estimating elasticities with the Linear Approximate Almost Ideal Demand System: Some Monte Carlo results. Review of Economics and Statistics, 76(2), 351-356.

Blundell, R., Pashardes P. & Weber, G. (1993). What do we learn from consumer demand patterns from micro data. The American Economic Review, 83(3, June): 570-597.

Britton, V. (1966). Clothing expenditures of U.S. families. Family Economics Review, 8-12.

Britton, V. (1968). Purchases of various types of clothing for men, women, and children. Family Economics Review, 3-5.

Bryant, W. K. & Wang, Y. (1990). American consumption patterns and the price of time: A time-series analysis. Journal of Consumer Affairs, 24(2), 280-306.

Courtless, J. C. (1987). Recent trends in clothing and textiles. Family Economics Review, 1, 1-9.

Crockett, J. & Friend I. (1960). A complete set of consumer demand relationships, In I. Friend & R. Jones (eds.). Proceedings of the Conference on Consumption and Saving, Wharton School of Finance and Commerce, University of Pennsylvania: 1.

Dardis, R., Derrick, F. & Lehfeld, A. (1981). Clothing in the United States: A cross-sectional analysis. Home Economics Research Journal, 10, 212-222.

David, M. (1962). Family Composition and Consumption. Amsterdam: Holland Publishing Company.

Deaton, A. A. & Muellbauer, J. (1980). Economics and Consumer Behavior. Cambridge, Cambridge University Press.

Deweese, G. & Norton, M. (1991). Impact of married women's employment on individual household member expenditures for clothing. The Journal of Consumer Affairs, 25(2), 235- 257.

Erickson, A. (1968). Clothing the urban American family: How much for whom? Monthly Labor Review, 91, 14-19.

Fan, J. X. (1996). An approach to adding price information to the Consumer Expenditure Survey.

Fan, J.X. (1993). Ethnic Differences in Preference Structure and Budget Allocation Patterns, Ph.D Dissertation. The Ohio State University.

Fareed, A. E. and Riggs, G. D. (1982). Old-young differences in consumer expenditure patterns. Journal of Consumer Affairs, 16(1), 152-160.

Frisbee, W. R. (1985). Economic analysis of household clothing expenditures. Canadian Home Economics Journal, 35, 201-206.

Garner, T. I. (1993). Consumer expenditures and inequality: An analysis based on decomposition of the Gini coefficient. The Review of Economics and Statistics, 75(1), 295-310.

Greene, W. H. (1990). Econometric Analysis. New York, NY: MacMillan Publishing Company.

Hafstrom, J. L. & Dunsing, M. M. (1972). Satisfaction and education: A new approach to understanding consumption patterns. Home Economics Research Journal, 1 (September), 4-12.

Hager, C. J. & Bryant, W. K. (1977). Clothing expenditures of low income rural families. Journal of Consumer Affairs, 11, 127-132.

Hamburg, M. (1960). Demand for clothing, In I. Friend & R. Jones (eds.), Proceedings of the Conference on Consumption and Saving. Wharton School of Finance and Commerce, University of Pennsylvania.

Hamburg, M. (1958). Some experiments with demand relationships for clothing. American Statistical Association Business and Economics Statistics Section Proceedings, 369-381.

Houthakker, H. & Taylor, L. (1970). Consumer Demand in the United States: Analysis and Projections. Cambridge, MA: Harvard University Press.

Jackson, H. O. (1992). Aging and expenditures on apparel. Clothing and Textiles Research Journal, 10(2), 24-28.

Judge, G. G., Hill, R. C., Griffths, W. E., Luetkepohl, H. & Lee, T. C. (1988). Introduction to the Theory and Practice of Econometrics (2nd Edition). New York, NY: John Wiley & Sons.

Kundel, C. (1976). Clothing practices and preferences of blue-collar workers and their families. Home Economics Research Journal, 4, 225-34.

Lazear, E. P. and Michael, R. T. (1988). Allocation of Income Within The Household. Chicago: University of Chicago Press.

Life Study of Consumer Expenditures (1957). New York: Time, Inc.

Linden, F. (1965). Expenditure Patterns of the American Family. New York: The National Industrial Conference Board.

Maddala, G. S. (1983). Limited-Dependent and Qualitative Variables in Econometrics. Cambridge: Cambridge University Press.

Millican, R. (1967). A re-examination of Engel's Laws using BLS data (1960-1961). Journal of Marketing, 31(October), 18-21.

Moehrle, T. (1990). Expenditure patterns of the elderly: Workers and nonworkers. Monthly Labor Review, (May), 35-40.

Mokhtari, M. (1992). An alternative model of U.S. clothing expenditures: Application of cointegration techniques. Journal of Consumer Affairs, 26(2), 305-323.

Mork, L. F. (1967). The effect of family size on expenditures. Family Economics Review, 13-16.

Nelson, J. A. (1992). Methods of estimating household equivalence scales: An empirical investigation. Review of Income and Wealth, 38 (3), 295-310.

Nelson, J. A. (1989). Individual consumption within the household: A study of expenditures on clothing. The Journal of Consumer Affairs, 23, 21-44.

Norton, M. J. T. & Park, J. O. (1986). Household demand, expenditures, and budgets for clothing. In M. J. Sporakowski, R. P. Lovingood, J. A. Driskell, & B. E. Densmore (Eds.), Research Conference Proceedings, Fall, Blacksburg, VA: Information Series 87-1, Virginia Agricultural Experiment Station.

Norum, P. S. (1989). Economic analysis of quarterly household expenditures on apparel. Home Economics Research Journal, 17(3), 228-240.

Norum, P. S. (1990). U.S. Clothing expenditures: A time series analysis. In Mary Carsky (ed.), The Proceedings of American Council on Consumer Interests, Columbia, MO: 75-81.

Prais, S. J. & Houthakker, H. S. (1957). The Analysis of Family Budgets. Cambridge, MA: The University Press.

Vickery, C. (1979). Women's economic contribution to the family. In Ralph E. Smith (ed.), The Subtle Revolution, (pp. 159-200). Washington, DC: The Urban Institute

Wagner, J. (1982). Family Clothing Consumption: A Cross-sectional Comparison of Family Life Cycle and Family Composition Models. Ph.D dissertation, Department of Family Economics, Kansas State University.

Wagner, J. & Hanna, S. (1983). The effectiveness of family life cycle variables in consumer expenditure research. Journal of Consumer Research, 10, 281-291.

Wagner, J. (1986). Expenditure for household textiles and textile home furnishings: An Engel curve analysis. Home Economics Research Journal, 15(1), 21-31.

Winakor, G. (1962). Consumer expenditures for clothing in the United States, 1929-1958. Journal of Home Economics, 54, 115-118.

Winakor, G. (1986). Trends in aggregate clothing expenditures in the U.S., 1929-1984. ACPTC Proceedings, Ruth H. Marshall (ed.), Monument, CO: Association of College Professors of Textiles and Clothing, Inc.: 130.

Winakor, G. (1989). The decline in expenditures for clothing relative to total consumer spending, 1929-1986. Home Economics Research Journal, 17(3), 195-215.

Endnotes

1. Assistant Professor, Department of Family and Consumer Studies, 228 AEB, Salt Lake City, UT 84112. Phone: 801-581-4170. FAX: 801-581-5156. Internet: fan@emery.fcs.utah.edu.
2. Assistant Professor, Retail & Consumer Science Department.
3. Professor, Consumer and Textile Science Department.

An Analysis of Household Expenditures on Educational Goods and Services

This study uses the 1991-92 BLS Consumer Expenditure Survey to examine the impact of economic and demographic factors affecting household expenditures on educational goods and services. Results of the study suggest that income, age, number of automobiles, contribution to educational organizations, family size, family type, education level, occupation, gender, and region are statistically significant factors in explaining variation in educational expenditures among households in the United States.

Sandra J. Huston, University of Missouri-Columbia[1]

Introduction

Education is an important component in the formation of human capital. Increasing human capital has benefits for the individual, the family, business, and the community because it increases the quality and/or quantity of production. According to human capital theory, education provides a vehicle for building stocks of human capital (Bryant, 1990). There is a large body of literature which supports the notion that an increase in human capital can make one more productive (both in quantity and quality) in the home and the workplace (Bryant, 1990; Becker, 1975; Mincer, 1970;). Individuals who work to enhance their human capital also increase the human capital stocks of the household unit to which they belong. Education is one avenue for building human capital stocks. Children, in particular, are greatly influenced by their parents' human capital. For example, Kane (1994) found parental education levels to be a major determinant in children's enrollment in college. One indication of whether families partake in such human capital producing activities is the dollars they allocate to the consumption of educational goods and services.

The purpose of this study is to examine how U.S. households allocate their dollars toward educational goods and services, and to determine which factors play a significant role in this process. Studies in the past have focused on education expenditures of specific family types or budget shares (as opposed to level of expenditure), but there has not been a study which focuses specifically on the level of education expenditures including all household types. Understanding the factors that define the household's ability and willingness to purchase educational goods and services can provide insight into human capital formation behavior within the family unit and can aid in policy decisions regarding education. For example, if education expenditures are sensitive to household preferences, then government programs should be devoted to encouraging households with "low" educational preferences to partake in educational opportunities to build human capital stocks. Similarly, if education expenditures are sensitive to changes in income, educational policy should reflect a consideration of such evidence so as not to limit the ability of families to partake in human capital formation.

Review of Relevant Literature

Two recent studies focus specifically on education expenditures and are germane to the research at hand. Examining education expenditures for female-headed versus married couple households, Yang (1995) found no statistically significant differences occur between these two groups. Only income was a statistically significant and positive factor for education expenditures for both groups (Yang, 1995). For female-headed households, age, race, occupation of the head, as well as housing tenure were found to be significant factors in explaining variation in household education expenditures. A positive relationship was found between age and education expenditures, non-whites were found to spend more on education than whites, and heads employed in professional, sales or technical occupations spent more on education than did heads employed in other occupations. Also, home owners (of female-headed households) were found to spend more on education than those female-headed households which did not own homes (Yang, 1995). For married couple households, those heads with a high school education spent an average of $633/year less on education than heads with a graduate school level of education. In addition, married-couple households located in the

Northeast region of the country spent more on education than similar householders located in other regions of the country (Yang, 1995).

When examining the education ratio (ER), that is, dollars allocated to education out of the "non-necessity" (i.e., all expenditures *excluding* food, shelter and clothing) budget, Huston (1995) found that age, income, family size, race and region were all important determinants in explaining variation in the household education ratio. The age variable was found to have the greatest impact on the ER, with younger households having a decreasing ER until the head reaches 40 years of age (on average) and then the ER was found to increase until the head turns 67, when the ER begins to decline again (Huston, 1995). Statistically significant and positive relationships were found between the ER and education level of the head as well as ER and family income. Similar to the Yang (1995) finding for regional differences, Huston (1995) found that the ER in the Northeast was higher compared to those in the rest of the nation.

Other somewhat related studies, which do not specifically focus on education expenditures but do include reading expenditures, may provide some additional insight for selecting appropriate variables to include in the present research. Two studies, both comparing expenditure patterns between single-parent and two-parent families include the expenditure category of reading and recreation (Horton & Hafstrom, 1985; Abdel-Ghany & Schwenk, 1993). The independent variables in both studies which had a significant impact on explaining variation in reading/recreation expenditures were income, family size, race, location, housing tenure, and age and education of the household head. In both studies, income had a significant and positive effect on reading/recreation expenditures, for both single parent and two-parent families. Both studies also found that Black headed households spent significantly less on reading and recreation than Non-Black headed households. Horton and Hafstrom (1985) found age and family size to have negative effects on reading/recreation expenditure for two-parent families while Abdel-Ghany & Schwenk (1993) found the same result for age but no significant result for family size. In terms of location of household, Horton & Hafstrom (1985) found that households located in the northeast region and Abdel-Ghany & Schwenk (1993) found that households located in the southern region, spent significantly less on recreation and reading than did households located in other areas of the United States. This effect appears to be quite the opposite from the studies specifically related to education expenditures. Education was found to have no significant effect according to Horton & Hafstrom (1985) while Abdel-Ghany and Schwenk (1993) found that education had a positive effect on recreation and reading expenditures for both single and two-parent families. Finally, Horton & Hafstrom (1985) found that home owners spent more on recreation and reading than did renters, all other variables held constant.

Based on measures of permanent income, Horton and Hafstrom (1985) report income elasticities (for recreation and reading) of greater than two for both single-parent and two-parent families. In another study, Abdel-Ghany & Foster (1982) found education has an income elasticity greater than one. Therefore, education expenditures appear to be relatively sensitive to income changes.

The Models

Theoretical Model

This research draws on the economic theory of consumer demand. Specifically, this research uses a modified Engel function which expresses the level of education expenditures (EDEX) as a function of household income (I) and a set of household demographic (HH) variables:

$$EDEX = f(I, HH)$$

Household income represents the household's ability to purchase EDEX, while the household demographic variables are hypothesized to serve as proxies for household tastes and preferences for the consumption of market-purchased education goods and services.

Empirical Model

The statistical model used in this research is multiple linear regression. The specific estimating equation was estimated via ordinary least squares (OLS) regression techniques using SAS version 6.08 and takes the following functional form:

$$EDEX = \beta_0 + \beta_1 I_i + \beta_2 I^2_i + \beta_3 I^3_i + \beta_{4i} HH_i$$
$$\text{for all } i=1,\ldots,n$$

In addition to the income variable, an income-squared variable and an income-cubed variable were included in an attempt to capture the varying effects of income over the range of income levels within the sample selected. The set of household characteristic variables (HH) used in this study include family size, level of assets, number of automobiles, and number of

earners in the household unit. Also included as dummy variables are region, family type, housing tenure, contribution to educational organizations, and the education level, race, gender and occupation of the household head. A description of all variables used in the analysis, along with the sign hypotheses of the independent variables, will be discussed in the following section.

Variables and Hypotheses

Education Expenditures (EDEX)

The dependent variable in this analysis is total annual household expenditures on educational goods and services (EDEX). This is a continuous variable, measured in dollars, that includes expenditures on tuition, school books, school supplies and equipment, college expenses for students living outside the household, newspapers, magazines, periodicals and books[2]. This measure of EDEX includes both expenditures for children and expenditures for adults.

Household Income

Household annual income is proxied by total annual consumption expenditures rather than using a measure of current income[4]. This measure of income follows the work of Houthakker and Taylor (1970) who demonstrate that total consumption expenditures (an estimate of permanent income) is a better statistical predictor of expenditures in a category of goods and services than are measures such as before-tax income and after-tax income. Also included in the analysis are income-squared and income-cubed. Because income has been found in previous studies to be a normal good, it is hypothesized that there will be a positive relationship present between income and education expenditures. The squared and cubic terms are included in the analysis because this relationship is hypothesized to vary over the range of income.

Assets and Housing Tenure

Measures of assets and housing tenure were included in the analysis to capture the effect of actual and potential wealth available to the family for education goods and services. Assets, included as a continuous variable, were measured by summing holdings in savings accounts, checking accounts, and the value of any stocks and/or bonds at one point in time at the end of the interview process. Housing tenure was measured as a dummy variable; i.e. whether the household owned their home or not. Home ownership may represent the household's ability to secure funds in order to finance such things as education. The effect of assets could be hypothesized in either direction. A negative relationship between assets and education may reflect the use of assets to fund education. On the other hand, over time, both home equity and assets could have a positive affect on educational expenditures. Households which spend more on education are developing more human capital, and therefore have an increased potential to accumulate assets and equity. But, an analysis of the effects of education expenditure over time is beyond the scope of this research.

Family Type

Family type was created via a dummy variable with four categories.

1. Husband-wife families with school-aged children (where the oldest child is greater than 5 years of age, but not older than 17 years). This category was used as the reference category.
2. Single parents (both male and female) with at least one child less than 17 years of age[5].
3. Husband-wife families with no children or very young children (the oldest child is less than 6 years of age).
4. All other family types (including single persons, families with adult children, and other non-traditional family types such as grand-parents raising grandchildren).

It is hypothesized that households including school-aged child members will have greater expenditures on educational goods and services compared to other types of families.

Family Size

Family size is measured by the number of persons in the household unit. Horton & Hafstrom (1985) found that family size had a negative impact on the dollars allocated to recreation/reading. Yang (1995) found that family size did not have a significant effect on educational expenditures, while Huston (1995) found that family size had a significant and positive effect on the education ratio. Given this mix of empirical findings, it is difficult to predict the direction of impact. Family size could increase the education expenditures if more dollars are being spent per capita; however, family size can also put a strain on the family budget and education expenditures may actually decrease as a result.

Contributions to Educational Organizations

Contributions to educational organizations are included as a proxy for preference toward educational

activities. It is reasonable to assume that families that are willing to donate financial resources to such organizations could be more likely to purchase education goods and services. Therefore, it is hypothesized that contributors (coded Yes=1) will spend more on education compared to non-contributors (No=0).

Number of Earners

This continuous variable measures the number of earners within the family unit to determine if there is a relationship between the number of income earners and the expenditure on education goods and services. If the number of earners represents a measure of human capital stock already present in the household, there may be a negative relationship between this variable and the dependent variable, as the need for enhancing human capital is not as urgent. But, this may also reflect a propensity toward building human capital and could be positively associated with education expenditure by the household.

Number of Automobiles

This variable is measured as the number of automobiles a family possesses and is included as a continuous variable. Number of automobiles is included to represent an "access" to education for the household. It is hypothesized that the greater access a family has to educational goods and services (i.e., convenience) the more likely they will be to purchase such goods.

Region

Region is measured as a set of categorical variables: rural, urban Midwest, urban South, urban West, and Urban Northeast (the reference category). Regional variables measure the independent effects of differences in the dependent variable which are attributed to the specific locale of a particular household unit. Households located in different regions may vary in terms of opportunities available, cultural composition, and/or the prices associated with educational goods and services.

Age of Household Head

Age of the household head is a continuous variable, measured in years. Although Yang (1995) argues that the hypothesized effect of age on education should be negative (according to human capital theory), the findings from her study indicate the opposite result. While this result may seem to contradict human capital theory, the unit of analysis must be considered before drawing this conclusion. Yang (1995) focused on the household and not the individual thus it would seem reasonable to hypothesize a positive relationship between education expenditure and age of the household head. Over time, the need for education in a family with children generally increases. Although Huston (1995) found age of the household head (family life cycle) to have a varying pattern regarding the ratio of education expenditures, it does not directly follow that the level of expenditure should exhibit a similar pattern, especially since family type is better controlled for in the present research. Therefore, age is hypothesized to have a positive relationship with education expenditures.

Education Level of Household Head

The education level of the household head is measured by five categorical variables - less than high school, high school, some college, a baccalaureate degree, and graduate school. The "less than high school" category is the reference category. Yang's (1995) results showed rather weak support for the education variable finding that only heads from married-couple families with a high school level of education spent significantly less on education compared to similar heads with the most advanced level of education. Huston (1995) found rather strong evidence from analyzing education ratios that education, in fact, begets education. It is therefore hypothesized that there will be a positive relationship between education and education expenditures.

Occupation of Household Head

Occupational categories were collapsed into two main groups -- Professional/Managerial occupations and all other occupation types. It is conceivable that household heads with professional occupations have reaped the "biggest" reward from obtaining a formal education, so they may be more willing to encourage family members to purchase educational goods and services. Yang (1995) found that for a sample of female headed households, heads with professional vocations spent significantly more on education compared to similar households in which the head was employed otherwise. But, it can be argued that households with professionals as heads have considerable stocks of human capital and do not require additional expenditures on formal education goods and services. However, it is hypothesized that there will be a positive relationship between professional/managerial occupations and expenditures on educational goods and services.

Race of Household Head

Race was measured as a dummy variable coded as Black or Non-Black. Due to previous studies which found that Black-headed households tend to have significantly different spending patterns than Non-Black-

an impact on explaining variation in the education expenditures. Because Black-headed households typically spend fewer dollars on recreation/reading, it could be hypothesized that Black-headed households, on average, will have lower levels of education expenditure than their Non-Black headed counterparts. However, Yang (1995) found that Black-female-headed households spent significantly more on education than did Non-Black-female headed householders. There was no significant race effect for the married couple households in Yang's (1995) study. Therefore, the effect of race remains to be answered through empirical analysis.

Table 1. Descriptive Statistics of the Sample (N=1849)

Variables	Mean	Std.Dev.	Min.	Max.
Education Expend	674.93	2,530.50	0.00	68,267.00
Family Income	29,179.19	19,801.48	3,362.95	239,496.90
Age	50.13	17.15	19.00	90.00
Family Size	2.70	1.56	1.00	12.00
Level of Assets	15,681.85	34,957.26	0.00	302,000.00
# of Autos	1.28	0.96	0.00	7.00
# of Earners	1.39	1.02	0.00	6.00

Variable	Proportion	Variable	Proportion
Family Type		Tenure	
Marrieds, kid >6*	0.27	Own	0.71
Single Parents	0.05	Not Own*	0.29
Marrieds, kid 0-6	0.29	Region	
Other Families	0.39	Midwest	0.24
Contributions		Northeast*	0.19
Yes	0.09	South	0.25
No*	0.91	West	0.21
Education of Head		Rural	0.11
< High School*	0.22	Race of Head	
High School	0.31	Black Head	0.11
Some College	0.23	Non-Black Head*	0.89
College Degree	0.13	Gender of Head	
Graduate School	0.11	Female*	0.33
Occupation of Head		Male	0.67
Professional	0.22		
All other*	0.78		

*Indicates reference category

Gender of Household Head

Gender is included as a categorical variable, with female headed households as the reference category. Given that females are typically faced with an earnings disadvantage in the labor market, their perceived need for human capital may be greater than that of male. It is hypothesized that female-headed households will spend more dollars than male headed households, all other factors held constant.

Data

The sample used in this analysis was selected from the 1991-92 BLS Consumer Expenditure Survey (U.S. Department of Labor, 1994). There are 1849 households in the sample, each having annual data and complete asset information. All data used in this analysis were obtained from the Consumer Unit Characteristics and Income files (FMLY).

Statistics describing the variables of the sample are summarized in Table 1. On average, households in the sample spend approximately $675.00 per year on education goods and services. The median education expenditure for the sample is $173.00, indicating that this variable is positively skewed.

Results

The OLS regression results are presented in Table 2. In addition to the regression coefficients and P-values, standardized coefficients are reported as a measure of the relative impact of the variables included within the model. The results, deemed to be significant at a level of five percent, are presented in bold type within Table 2. Of the 24 variables included in the analysis, 14 produced statistically significant results. The F-value and its associated probability indicated that the model is indeed significant and the adjusted R-squared indicates that the independent variables in the model are accounting for about 44% of the variation in the dependent variable, education expenditures.

Table 2. OLS Regression Results (N=1849)

Variables	OLS Coefficient	P-Value	Std. Coefficient
Family Income	**72.0611**	**0.0001**	**0.5639**
Income-squared	**-1.2143**	**0.0001**	**-1.1408**
Income cubed	**0.0081**	**0.0001**	**1.2964**
Age	**7.2086**	**0.0300**	**0.0489**
Family Size	**-81.0272**	**0.0409**	**-0.0498**
Level of Assets	-0.0008	0.5752	-0.0109
Number of Autos	**235.1640**	**0.0001**	**0.0890**
Number of Earners	51.5805	0.4226	0.0209
Single Parents	-188.4528	0.4314	-0.0167
Marrieds, kid 0-6	**-515.9878**	**0.0001**	**-0.0925**
Other Families	**-442.3831**	**0.0022**	**-0.0856**
Own Home	-102.2074	0.3634	-0.0183
Midwest	**-249.5685**	**0.0658**	**-0.0419**
South	-128.0974	0.3396	-0.0219
West	**-460.4252**	**0.0011**	**-0.0735**
Rural	-82.9303	0.5993	-0.0102
Contributions	**597.7309**	**0.0005**	**0.0666**
High School	19.4858	0.8811	0.0036
Some College	104.9565	0.4766	0.0176
College Degree	-26.0130	0.8875	-0.0035
Graduate School	**551.7910**	**0.0060**	**0.0677**
Professional	**233.9033**	**0.0633**	**0.0385**
Male	**-257.7147**	**0.0249**	**-0.0480**
Black Head	79.7512	0.5993	0.0098
Intercept	-467.4519	0.1653	0.0000
Adj. R-Squared	**0.4402**		
F-value	**61.5490**	**0.0001**	

The standardized regression coefficients indicate that, of all the variables included in the model, income explains the largest degree of variation among household education expenditure levels. Figure 1 illustrates the effect of the income variables included in the model. As can be seen, when evaluating the model at the variable means there do appear to be differences in marginal effects over the income range, as hypothesized. The slope is steeper for incomes below $30,000, flattens out for incomes between $30,000 and $70,000, and then gets slightly steeper again for incomes in excess of $70,000.

In a separate analysis, income elasticities were estimated for the total sample and for the classifications of incomes listed above[6]. Income elasticities reveal the effect of a one percent change in income on the percent of education expenditures. Income elasticities were estimated for two reasons: (1) to illustrate the relative magnitude of the impact of income on education expenditures and, (2) to compare results with findings from previous work.

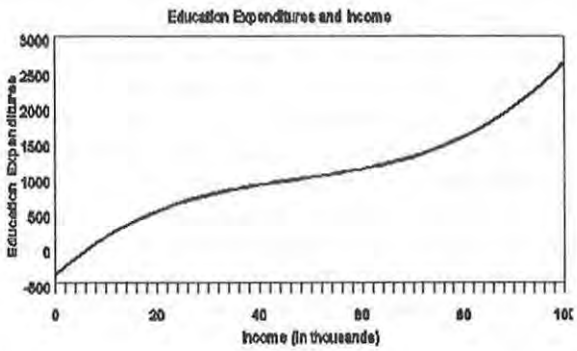
The estimated income elasticities are presented in Table 3. The "pure" income elasticity (i.e., estimated via regression analysis with no other variables except income and education expenditures) for the entire sample is estimated at 3.13. When the additional 21 variables are included in the calculations, the overall elasticity is estimated to be 2.39. This figure is consistent with estimates from previous research (Abdel-Ghany & Foster, 1982). When the sample was split and income elasticities were estimated for each income class, the results are as indicated in Table 3. These estimates are generally consistent with Figure 1, which illustrates the effect of income on education expenditures. The highest income elasticity (4.44) is for households with less than $30,000 income. For households with incomes between $30,000 and $70,000, the elasticity drops to almost a unity state. For household incomes above $70,000, the elasticity rises again to 1.92.

Table 3. Estimated Income Elasticities (N=1849)

Category	Estimated Income Elasticity
Total Sample (Income alone)	3.13
Total Sample (All Variables)	2.39
Households < $30,000	4.44
Households $30,000-$70,000	1.02
Households > $70,000	1.92

Results from the preference indicator variables regarding the household head suggest that age, gender, occupation, and, to a certain extent, education levels are important factors when explaining household variation of educational expenditures. Race was found not to be

Figure 1



statistically significant. Age, gender and occupation are in agreement with the hypothesized direction of influence. On average, age is positively related to education expenditures, with each year of age contributing a $7.20 increase per year. Households with male heads spend significantly less, approximately $258.00/year, on education compared to similar households with a female head. Household heads employed in professional jobs spend, on average, $233.90 more per year than do households in which the head is employed in a non-professional occupation. Households with heads possessing graduate school level education spend significantly more (approximately $552/year) than do heads with less education.

Preference indicator variable results at the household level reveal that number of automobiles, family size, contributions to educational organizations, family type and region were statistically significant (with significant p-values ranging from 0.0001 to 0.0658). Variables that do not seem to explain household education expenditures, *ceteris paribus*, are assets, housing tenure and number of earners in the household. The influence of family size was negative, implying that, for every additional individual in the household, education expenditures are about $81.00 per year lower (on average). The results suggest that there are no significant differences between how single parent families and two-parent families with school-aged children spend their dollars on education, holding all other factors constant. However, families with no children or very young children, and all other family types besides the ones already mentioned spend significantly less than married-couple households with school-aged children. Regional differences in expenditure on educational goods and services exist. Households located in the urban West and urban Midwest spend significantly less than households located in the urban Northeast areas.

Households with access to more automobiles

tend to spend more on education than households with fewer number of vehicles. For example, if a household with no car is compared to a similar household with 2 cars, on average, it would be expected that the household with 2 cars would spend approximately $470.00 more per year on education goods and services. Finally, as expected, households which contribute financially to educational organizations tend to spend an average of almost $600 more per year than similar households who do not contribute to such organizations.

Discussion and Conclusions

Of all the variables included in the model, the income variables had the strongest impact in terms of explaining variation in the number of dollars a family spends on education goods and services. The elasticity estimates indicate that household education expenditure is income sensitive; that is, for a one percent change in income, education expenditures would be expected to change by 2.39 percent in the same direction. For households at the lower end of the income scale, this percentage change is doubled (4.44%). These results clearly suggest that if increasing the level of household consumption of education goods and services is desired, social policy efforts should concentrate on increasing family income. This will produce particularly responsive results among families at the lower end of the income scale.

The next set of variables which were found to be important in explaining variation in household education expenditure were the "family" level variables: family type, family size, location of household, number of automobiles and charitable contribution to educational institutions. Results from the family type variables suggest that households with school-aged children spend more on education than other types of families. The number of automobiles played an important role in explaining household education expenditure variation. This begs the question: What exactly is it about automobile ownership that influences, or is associated with, education expenditures? Automobile ownership could represent a means of access to education; however, to clearly examine this issue would require the inclusion of other means of access (e.g., public transportation) as well as barriers to access (e.g., child care, the ratio of persons to cars). Automobile ownership may represent a proxy for "wealth"; however, given that only the number of cars were included in this analysis (and not the age, make, or model of the vehicles), this does not seem as plausible as an explanation. Perhaps automobile ownership is a function of, rather than a proxy for, wealth. In any case, further investigation regarding the nature and meaning of automobile ownership with regard to education expenditure seems warranted given the result from this study.

Family size tends to have a negative effect on household education expenditure. This result may suggest that families allocate dollars to budget areas other than education in response to an increase in the number of household members. In terms of location of the household, the results suggest that the urban West and urban Midwest regions of the country spend less on education than do households located in the urban Northeast. More investigation is required to determine if these differences are due to price differentials, market variations, and/or differences in tastes and preferences. The last family level variable which had a statistically significant result was contribution to educational organizations. The result indicates that when comparing two similar households, differing only by the fact that one household contributes dollars to educational organizations and the other household does not, the household which does contribute also has a significantly higher level of household education expenditure.

The remaining variables, which had an impact less than that of income and the family level variables, are the characteristics describing the head of the household: education level, age, gender, and occupation. Although past research has shown that race has been an important variable in explaining variation in a variety of household expenditure categories, including education, the results of this study did not bear out the same findings. Further investigation, that is, an examination of the different variables used and their connection to race would provide insight into the nature and scope of the preference indicator variables. The results for education suggest that heads with the most education spend the most on household educational goods and services. Those with more education want to buy more education for their families. Households with an older head spend more on education, on average, than households with a relatively younger household head. This result suggests that as the family "ages" the demand for education increases. This result is also supported somewhat by the family type result, which indicates that families with school-aged children spend more on education than other family types. The age variable may also be representing a shift from public (subsidized) education to private or less subsidized education (e.g., the cost for children in public school is relatively less than for children in college).

The results for gender of the household head indicate that, holding all other factors constant, households headed by females spend more, on average, than households headed by males. This may suggest that

households headed by females are cognizant of the wage rate inequities in the market place and, in turn, perceive a need to obtain more education (for themselves and also encourage family members to do so) in order to compete for position in the labor market. As well, families in which the head is employed in a professional or managerial occupation spend more on education, on average, than do households in which the head is employed in other types of work. This result may imply that parents working in professional/managerial fields recognize the benefit of education and encourage their children to obtain sufficient levels of education so that the children will be able to maintain the level of living they were accustomed to in their family of origin.

The results from this study reveal that income is by far the most important variable in explaining the absolute amount of dollars a household spends on education goods and services. While expenditure analyses typically find income to be a significant factor, this study found education expenditures to be more sensitive to income changes for those with the lowest levels of income. The findings also suggest that further investigation into automobile ownership, race and household location is warranted.

References

Abdel Ghany, M. & Foster, A.C. (1982). Impact of income and wife's education on family consumption expenditures. Journal of Consumer Studies and Home Economics, 6(21), 21-28.

Abdel-Ghany, M. & Schwenk, F. (1993). Differences in consumption patterns of single-parent and two-parent families in the United States. Journal of Family and Economic Issues, 14, 299-315.

Becker, G.S. (1975). Human capital: A theoretical and empirical analysis, with special reference to education. New York: National Bureau of Economic Research.

Bryant, W. (1990). The economic organization of the household. New York: Cambridge University Press.

Kane, T.J. (1994). College entry by Blacks since 1970: The role of college costs, family background, and the returns to education. Journal of Political Economy, 102(5), 878-911.

Horton, S.E. & Hafstrom, J.L. (1985). Income elasticities for selected consumption categories: Comparison of single female-headed and two-parent families. Home Economics Research Journal, 13(3), 292-303.

Houthakker, H. & Taylor, L. (1970). Consumer demand in the United States: Analysis and projections. Cambridge, MA: Harvard University Press.

Huston, S.J. (1995). The household expenditure ratio: Exploring the importance of education. The Journal of the FERM Division of the AAFCS, 1, 51-56.

Mincer, J. (1970). The distribution of labor incomes: A survey with special reference to the human capital approach. Journal of Economic Literature, 8, 1-26.

U.S. Dept. of Labor, Bureau of Labor Statistics. Consumer Expenditure Survey, 1991: Computer file. ICPSR version. Washington, DC: U.S. Dept. of Commerce, Bureau of the Census producer, 1994. Ann Arbor, MI: ICPSR, 1994.

Yang, Y.G. (1995). Expenditures on education for female-headed and married-couple households. The Journal of the FERM Division of the AAFCS, 1, 45-50.

Endnotes

1. Graduate Student, Department of Consumer and Family Economics, 239 Stanley Hall, Columbia, MO, 65211. Email c641349@mizzou1.missouri.edu
2. This variable was constructed using the summary expenditure files from the CES data set; EDUCAPQ/CQ+READPQ/CQ+ COLLEXPX=EDEX.
4. Consumption expenditures were converted into $1,000 units.
5. There were a total of 98 single parent families, with most (87) being female-headed.
6. Income elasticities were calculated with separate double-logarithm equations and using coefficients on income as estimates of elasticity for each category.