DISCUSSION OF THREE RESEARCH PAPERS ON CONSUMER CREDIT

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ABSTRACT

These three papers focused on different credit forms, including open-end, closed-end and rent-to-own programs. The analysis utilized demographic and socio-economic variables in an effort to explain credit usage and practices. Some effort was made to include cognitive and affective variables, such as attitudes, knowledge and time perspectives. The importance of this information for consumer educators/counselors and for policy decisions was also discussed.

The authors of all three of these papers should be complimented for providing us with such thought-provoking analyses of factors related to different forms of credit usage, including open-end (e.g., credit cards), closed-end (e.g., installment contracts), and rent-to-own programs. I was particularly pleased to see the inclusion of cognitive and affective variables in all three of the papers along with the more traditional demographic and socio-economic ones. For example, Danes and Hira included measures of credit knowledge and attitude in their study of credit card practices. The Federal Reserve data utilized by Jensen and Reynolds included an attitudinal index regarding credit use. Swagler theorized that the lack of perceived access to credit sources and the short time horizon of low income consumers might negate the effectiveness of consumer education and disclosure legislation regarding the relative cost of rent-to-own programs. The remainder of my remarks are directed toward the three individual papers in an attempt to make constructive comments regarding the methodology and findings.

JENSEN AND REYNOLDS PAPER

The model for this paper was logically developed and relatively thorough given the constraints involved in using an existing data base that is almost ten years old. Since I am not as familiar with logit analysis as I would like to be, I relied on a statistical consultant to comment on the statistical analysis and interpretation. His major comment was that the summary measures and statistical references presented in the narrative discussion were not those widely used and recognized in his discipline and that he thought the statistical portion of the paper could be better referenced. Given that the authors are economists and my consultant is a social psychologist, the lack of familiarity with the summary statistics presented and references may be due to differences in the two disciplines.

The results of this study seemed pretty intuitive in that the 50-65 age group differed from the over 65 groups only in the use of closed-end credit. Jensen and Reynolds did not clarify whether the Federal Reserve open-end credit data included convenience credit card users who typically pay off their accounts each month along with those who allow their account to revolve each month. If the former were included, I believe this might help explain the lack of difference between the age groups on open-end credit use. It is likely that older consumers--both the 50-65 and over 65--might be likely to pay off their cards on a regular monthly basis.

Future research needs to investigate the amount of credit relative to income rather than the credit user/nonuser variable in order to get a more relevant measure of credit usage. It is also interesting to reflect on the likelihood that the retirees and preretirees in 1977 might have used less credit throughout their lives than cohorts currently in middle age or approaching retirement today. If possible, this study needs to be replicated in a few years to see if the same relationships still exist.

DANES AND HIRA PAPER

Danes and Hira provided a comprehensive model in their effort to include endogenous measures of both attitude and knowledge about credit. They also included some of the same demographic and socio-economic variables as in the Federal Reserve data analyzed by Jensen and Reynolds, e.g., age and income. In view of Jensen and Reynold's finding that age was an important determinant of credit usage, I was at first surprised to read that Danes and Hira had eliminated age in their reduced model due to its lack of performance in the original recursive model. This contradictory finding led me to take a closer look at the definition of credit and to note that this paper pertains only to open-end credit in the form of credit cards. Thus, the contradiction faded when I realized that age was only important in explaining closed-end credit usage in the paper by Jensen and Reynolds.

I encountered other definitional questions when reviewing the variables utilized in the paper by Danes and Hira. First, I wanted to know why the knowledge questions were randomly assigned to two indicators of credit knowledge. There was no explanation for this in the narrative. It seemed more logical to me to group the questions according to their content and to check the resulting internal consistency if two measures were needed. Or, another idea was that a single test of credit knowledge could have been created and checked for reliability and validity. Since the specific questions pertaining to knowledge were not

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delineated in the paper, I found myself trying to guess what the descriptors really meant. One I found bothersome was called "interest compounding." I wondered if this were really referring to the various forms of interest computation (previous, average daily and adjusted balances) or what. I wondered if the absolute amount the household felt comfortable in owing on credit cards at one time was really a true measure of attitude. This amount would seem more useful if it were a percentage of income rather than an absolute dollar value. Then I wondered why a number of attitudinal statements were not developed into a scale to measure this important dimension.

In the discussion of income, I was surprised to find no descriptive information about the median or range of income for the sample. This was not included even though there was such information about age, education and household size. This made me wonder how the income and other data compared to Census data for Marshalltown or some other larger population base. I wondered how much missing data there had been with regard to income and how this was handled. In the interpretation of the findings, I was confused when in one place the authors claimed that a .14 difference in the knowledge indicators was "similar" but a page later they determined that a .012 difference in the credit practices indicators was dissimilar enough to discuss. I was also confused by the statement that claimed there were "decreased" degrees of freedom in the reduced model when compared to the recursive one. The information in Table 2 contradicts the narrative by showing that the degrees of freedom are 11 and 14 for the full recursive and reduced models, respectively.

Danes and Hira are to be congratulated for tackling such a complex model which attempts to test the relationships between credit attitudes, knowledge and practices. Since this was an exploratory effort, it might be useful to reanalyze the data to test the paths from credit practices to attitudes and knowledge. It would seem possible that credit behavior could be responsible for attitudes and knowledge as well as vice versa. The exploratory effort presented in this paper needs to be expanded to a confirmatory one where the model developed in the Marshalltown study is tested with another sample.

SWAGLER PAPER

The analysis of rent-to-buy programs by Swagler is both thorough and thought-provoking. Although I had seen the ads for these programs and realized that they were expensive, I had not bothered to calculate the relative cost. I was shocked at the potential long range expense to the low income consumers targeted by these programs.

The disconcerting aspect of Swagler's paper is that this costly alternative which technically falls through the cracks of current disclosure legislation requirements may indeed be the unfortunate by-product of such legislation. I find myself in a very uncomfortable position of having been a strong advocate of Truth-in-Lending legislation when I had not noticed the potential adverse results on low income consumers. I had somehow convinced myself that "informative" legislation did not have such negative impact on credit availability and cost for certain consumer groups than "protective" legislation, e.g., state usury laws and licensure requirements.

Swagler has done again what he does so well in placing that little burr of doubt in our minds about how solutions to problems may indeed beget new problems. He even goes farther by pointing out that disclosure of the relative cost of rent-to-own programs might not be relevant to low income consumers due to their perceived and/or real lack of access to conventional credit alternatives and their short time perspectives. Consumer educators need to spread the word regarding the relative expense of these programs through community groups and public agencies just to see what, if any, impact the information will have on low income consumers. However, we need to be cognizant of the diversity of consumers and the difficulty of finding solutions that will benefit all consumers in an equitable manner.

In conclusion, I believe we have had a stimulating set of papers in this set. The authors have added to our knowledge base regarding consumer credit and have successfully directed our attention toward important issues. As usual, their findings have generated new research questions for us to address in future studies.

USE OF HEDONIC PROCEDURES TO CONSTRUCT INTERREGIONAL PRICE INDEXES: THE CASE OF HOUSING

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ABSTRACT

Data from the Annual Housing Survey are used to develop cross-sectional hedonic rental price indexes for a standard rental unit. Need for and applications of this procedure are discussed.

INTRODUCTION

An accurate account of price movements is an important aspect of consumer economics research. Many government policies which affect family welfare in the U.S. are formulated on the basis of the price level of the goods and services which households purchase. Furthermore "pure" price measures of particular goods, or of goods in general, are important variables in areas of consumer research such as demand studies.

A frequent criticism of price indexes has been their failure to fully account for quality change. For an in depth discussion of this issue, see Cagan and Moore [1]. Triplett [9] reviewed research on the accuracy of price indexes. He concluded that indexes based on highly disaggregated price information, where quality changes could be represented by substitution among goods (i.e., new goods replacing old), may avoid bias without explicitly adjusting for quality change.

On the other hand, certain goods, especially large durables, are heterogeneous in nature. That is, the good represents a bundle of attributes, each of which contributes to the total utility obtained from consumption of the good. The particular bundle purchased by a household may vary both over time and across geographic regions in a given time period. Standard price measures are probably weakest in accounting for quality changes in such heterogeneous goods. The purpose of this paper is to discuss the development of a quality-adjusted, interregional price index for a particular heterogeneous good--rental housing.

INTERREGIONAL PRICE INDEXES

The motivation for this research was to obtain a housing price variable to be used in an interregional study of mobile home demand. Theoretically, the price of a good should not vary across geographic regions because of the possibility of arbitrage, that is, the movement of goods from cheaper markets to more expensive ones. For example, if an automobile were priced higher in one region than another, supplies in the cheaper region would be shipped to the higher-priced region. Supply of automobiles would be increased in the more expensive region, pushing price downward. Supplies in the cheaper region would be decreased, raising price, until prices were equal in the two markets. In practice, arbitrage may not be completely effective because of transportation cost and information inefficiencies. A third, and major, hindrance to arbitrage is lack of mobility of the good. Housing is a primary example [4]. With the possible exception of mobile/manufactured housing, arbitrage cannot work with housing. Therefore, housing markets are characterized by their localized nature. The price differences which are likely to exist across geographic regions makes a cross-sectional price index essential in an econometric model of inter-metropolitan housing demand.

Several other potential uses exist for a cross-sectional housing price index. First, these indexes may be useful in determining housing subsidies under Department of Housing and Urban Development Programs. Second, such indexes may enhance the general understanding of the localized nature of housing markets. Third, development of cross-sectional housing price indexes may contribute to the establishment of new, interregional cost-of-living indexes [4].

Some information on interregional variation in housing prices was available previously in the Bureau of Labor Statistics Urban Family Budget estimates; however, these have been discontinued. Therefore, a feasible, and perhaps superior, alternative is the construction of cross-sectional hedonic price indexes.

Empirical work on construction of quality-adjusted price indexes began as early as 1961 with the research of Zvi Griliches. Griliches [5] constructed quality-corrected automobile price indexes using the hedonic regression technique. According to Griliches, the first step in determining the effect of quality changes on measured prices is to determine what relationship exists between the price of a good and its quality. Griliches hypothesized that the price of a good in a given time period is a function of a set of "qualities" or characteristics of the good, such as size and performance. The hedonic technique is based upon the assumption that a good is actually a bundle of utility-yielding attributes. Overall quality of the good is a function of these measurable attributes or characteristics.

Typically, quality adjusted price indexes have been constructed to compare prices between two time periods. In such cases, price, or the log of price, of a good in any given time period is regressed on a set of characteristics variables. The estimated coefficients represent the "shadow prices" of the characteristic variables:

$$P_{it} = \Sigma\pi_{jt} + b_{jit} + \varepsilon_{it} \qquad (1)$$

where,

P_{it} = price of the ith good at time t
π_{jt} = the shadow price of the jth characteristic
b_{jit} = the level of the jth characteristic of the ith good at time t.
ε_{it} = the disturbance term

The "shadow prices" are then used to price a reference bundle of characteristics in each time period being studied. If a base time period is used for reference, an index similar to a Laspeyres price index can be constructed. The quality corrected index is:

$$\Sigma_j \hat{\pi}_{j0} Z_{j0} / \Sigma_j \hat{\pi}_{j0} Z_{j0} \qquad (2)$$

where,

Z_{j0} = the aggregate base period level of the jth specification variable ($Z_{j0} = b_{ji0} Q_{i0}$, where Q_{i0} = aggregate level of sales of good i in the base period.) [2], [6]

A less frequent use of hedonic analysis is in construction of cross-regional price indexes which provide information on pure price variation among markets.

METHODOLOGY

In the present study, cross-regional price indexes were developed for rental housing in fifty-eight of the sixty Standard Metropolitan Statistical Areas (SMSAs) surveyed between 1978 and 1981 as a part of the Department of Housing and Urban Development's Annual Housing Survey (AHS). The AHS is potentially an excellent data source for this purpose as it contains over one thousand housing and occupant variables, including a large number of structural and neighborhood characteristics. The methodology used to develop the cross-regional hedonic price indexes was established by Follain and Malpezzi [3].

Two major empirical issues are raised in the estimation of hedonic house price equations. These issues are what explanatory variables should be included and what should be the functional form of the equation.

Miller [7] categorizes variables which determine residential property prices. These include structural attributes, location, financial factors, transaction costs, and inflation. Miller further states that structural attributes and locational factors are the "fundamental" determinants of price because households receive utility or disutility from these characteristics over the entire term of occupancy. Financial factors and transportation costs are market-related variables which are typically excluded from hedonic analyses [3]. Inflation must be accounted for in order to permit comparison of the real influences of the other variables [7].

Based upon past AHS hedonic research and upon experimentation with the data set for this study, thirty-nine explanatory variables were selected for the regression equation. The variables are categorized as structural, neighborhood, (location), or other variables in the discussion below.

Structural Variables

Both structural information and structural defect variables were included as explanatory variables. The information variables included two size proxies--number of rooms and number of bathrooms. Age of the housing structure was entered in quadratic form to permit the depreciation rate to change over time. Heating and cooling characteristics were broken into four dummy variables: 1) whether the unit had some type of central or built-in heating equipment, 2) whether additional heating equipment was used during the winter preceding the survey, 3) whether the housing unit was centrally air conditioned, and 4) whether storm windows were present.

Additional structural information variables included number of housing units in the structure, and five dummies indicating presence of an elevator in structures with more than three stories, firmly attached handrailings on stairways, lighted hallways in the building, complete kitchen facilities, working electrical outlets in every room of the unit, and commercial establishments in the building. Two dummies were used to indicate presence and type of parking facilities. These were availability of off-street parking and availability of a garage. A dummy variable was also included to indicate whether or not the unit was rented furnished.

The regression equation also contained several measures of structural defects. These were dummies indicating presence of rats or mice, damaged or defective stairs in the building, exposed wiring, lack of privacy, and debris on the premises.

The Annual Housing Survey contains a question in which the occupant is asked his/her opinion of overall housing quality as being excellent, good, fair, or poor. In the present analysis, this variable was broken into three dummy variables, one each for the excellent, fair, and poor responses.

Neighborhood Variables

The effect of neighborhood characteristics on rental price was measured by ten occupant-rating measures of neighborhood conditions and services. Neighborhood condition variables included presence of crime, airplane noise, street noise, abandoned buildings, rundown buildings, litter, and commercial or industrial activities. Two neighborhood service dummies were included which measured the occupant's opinion of adequacy of the schools and adequacy of public transportation.

The AHS data set contains a variable which measures the occupant's opinion of overall neighborhood quality. This variable is structured identical to the housing quality variable and was treated in the same manner as that variable in the present study.

Other Independent Variables

Two miscellaneous explanatory variables were included in the regression equations. Month of the interview was included to allow measurement of the inflation rate. A dummy variable indicating a central vs. non-central city location was included in SMSAs where that distinction was possible.

The Dependent Variable

The dependent variable for the hedonic regression was monthly contract rent plus utilities, if utilities were not included in contract rent. This variable provided a more uniform measure of rental value than contract rent alone which may or may not include utilities.

Functional Form of the Equation

Selection of functional form for the hedonic regression was based upon the methodology employed by Follain and Malpezzi [3]. After rejecting the log linear form and the semi-log form (which regressed price on the log of the characteristics variables) because of the problem of defining the natural log of zero, the authors applied a Box and Cox transformation procedure to compare explanatory power of the linear and semi-log specification which regressed the log of the value on linear explanatory variables. They selected the semi-log model because it offered slightly more explanatory power and allowed the values of individual characteristics to vary with the price of the home. Following Follain and Malpezzi's findings, a semi-log function was chosen for this study. The natural log of gross rent was regressed on the set of linear characteristics variables as discussed above.

RESULTS OF THE HEDONIC REGRESSION

In the present study, ordinary least square procedures were applied to estimate the coefficients for the thirty-nine structural and neighborhood characteristics in fifty-eight of the sixty SMSAs for which AHS data were collected between 1978 and 1981. Each regression produced a vector of hedonic prices (the regression coefficients):

$$1_i = (1_i^s, 1_i^n, 1_i^m) \quad i = 1,58 \qquad (3)$$

where,
s = structural characteristics
n = neighborhood characteristics
m = other characteristics.

Because prediction of the value of the dependent variable is the major research focus in this study, the primary concern is with the residual variance of the regression equations and the related statistic, the adjusted square of the multiple correlation coefficient ($\bar{R}^2$) [7]. The best prediction should result from the specification with the smallest residual variance or the highest $\bar{R}^2$.

As discussed earlier, this procedure was followed in selecting the specifications for this study. To a lesser extent, signs and significance of the regression coefficients were considered. If a variable did not change the $\bar{R}^2$ considerably, its inclusion was based upon its significance and sign and its apparent influence upon the other regression coefficients.

The residual variance and the $\bar{R}^2$ for each SMSA are summarized in Table 2. The $\bar{R}^2$ ranged from a low of .23 in Boston to a high of .60 in Memphis and Raleigh. The mean $\bar{R}^2$ was .46. The F-value computed for each regression shows that all $\bar{R}^2$ values are significantly greater than zero; that is, the hypothesis that the observed multiple correlation is the result of sampling error may be rejected (see Table 1).

The wide range among SMSAs in the variation in the explanatory power of the same set of independent variables is indicative of the localized nature of housing markets.

Although the $\bar{R}^2$s are of a respectable magnitude for cross-sectional data, the research of Follain and Malpezzi [3] suggests that, in addition to structural and neighborhood variables; certain tenant characteristics, length of tenure, in particular may be significant predictors of rental price. Such variables were excluded from the present analysis because they are not housing characteristics and, therefore, are not theoretically part of an hedonic analysis.

STATISTICAL SIGNIFICANCE OF THE INDIVIDUAL HEDONIC REGRESSION COEFFICIENTS

Examination of the signs, magnitudes, and significance of individual coefficient estimates provides additional insight into the performance of the hedonic regressions. Also, information is provided as to similarities and differences among the fifty-eight separate housing markets.

Over half of the coefficient estimates were statistically significant in twenty-one of the fifty-eight equations (90 percent confidence interval; $\alpha < .01$; two-tailed test). The mean number of significant coefficients was sixteen out of thirty-nine variables, and the median was seventeen. The range was twenty with a minimum of ten and a maximum of thirty.

A small group of "key" variables were consistent in exerting the strongest influence on rental price in the fifty-eight SMSAs. The coefficients for number of rooms and number of bathrooms were positive and highly significant ($\alpha < .01$) in all fifty-eight equations. Given the semi-log form of the equation, the coefficients ranged from .073 for Columbus to .138 in the Los Angeles-Long Beach SMSA. The mean of the room coefficients was .100. The coefficient estimates for number of bathrooms ranged from a low of .095 in Denver to a high of .323 in Providence. The mean coefficient was .173.

In addition to number of rooms and number of bathrooms, structural and neighborhood variables which

TABLE 1. Summary Regression Statistics and Price Indexes

	$\bar{R}^2$	F-statistic	Degrees of Freedom (N - k)	Predicted Rent	Price Index*
Atlanta	.49	120.83	4733	293.37	87.0
Cincinnati	.52	38.60	1341	270.67	80.3
Colorado Springs	.56	49.41	1401	223.76	66.2
Columbus	.47	35.57	1499	250.56	75.3
Kansas City	.56	40.07	1168	274.87	81.5
New Orleans	.49	44.63	1767	240.43	71.3
Newport News	.52	38.20	1245	221.63	65.7
Patterson	.46	33.89	1451	356.74	105.8
Philadelphia	.48	84.50	3556	297,80	88.3
Rochester	.43	25.27	1226	276.85	82.1
San Antonio	.56	44.99	1272	230.44	68.3
San Bernardino	.44	25.91	1185	278.03	82.4
San Diego	.51	51.51	1890	262.52	77.8
San Francisco	.42	107.35	5761	296.03	87.8
Springfield, MA	.37	24.81	1524	325.58	96.5
Baltimore	.47	34.61	1440	300.77	89.2
Buffalo	.36	20.18	1317	261.00	77.4
Chicago	.40	81.32	4704	293.64	87.1
Cleveland	.43	26.77	1282	318.83	94.5
Denver	.52	45.68	1549	286.88	85.1
Hartford	.43	31.53	1476	329.92	97.8
Houston	.51	138.18	5159	301.31	89.3
Las Vegas	.59	67.11	1698	294.86	87.4
Miami	.49	43.21	1660	295.59	87.6
Milwaukee	.39	28.26	1626	346.53	102.7
Omaha	.49	31.32	1175	213.06	63.2
Portland	.41	29.87	1572	289.86	85.9
Raleigh	.60	62.85	1513	262.22	77.8
Seattle-Everett	.43	87.79	4499	338.53	100.4
Albany	.36	20.12	1304	270.29	80.1
Allentown	.37	16.94	991	279.80	83.0
Birmingham	.58	40.68	1061	243.83	72.3
Grand Rapids	.43	22.14	1021	276.86	82.1
Indianapolis	.49	35.57	1367	253.25	75.1
Los Angele-Long Beach	.43	114.78	5923	345.13	102.3
Louisville	.46	26.72	1140	223.28	66.2
Memphis	.60	65.69	1571	237.71	70.5
New York	.36	68.59	4725	413.32	122.6
Oklahoma City	.25	38.33	1325	224.58	66.6
Providence	.35	22.47	1493	375.25	111.3
Sacramento	.49	43.48	1666	264.21	78.3
St. Louis	.50	92.53	3503	274.03	81.3
Salt Lake City	.50	42.35	1523	272.94	80.9
Detroit	.38	17.74	1122	437.44	129.7
Anaheim	.52	45.64	1593	563.66	167.1
Boston	.23	16.12	1975	391.72	116.1
Dallas	.43	28.62	1395	259.82	77.0
Fort Worth	.53	38.47	1254	253.53	75.2
Madison	.43	31.13	1493	384.42	114.0
Minneapolis-St. Paul	.33	15.22	1101	337.26	100.0
Newark	.33	16.68	1201	427.17	126.7
Orlando	.54	37.38	1103	273.43	81.1
Phoenix	.51	34.84	1251	280.76	83.2
Pittsburgh	.40	15.20	788	294.44	87.3
Spokane	.47	27.82	1090	273.59	81.1
Tacoma	.39	23.77	1335	240.29	71.2
Washington, D.C.	.47	45.99	2016	326.82	96.9
Wichita	.48	30.22	1168	316.89	94.1

*Minneapolis-St. Paul = 100

consistently have highly significant coefficients of the expected sign are presence of conventional central heating, presence of central air conditioning, and presence and type of parking facilities. The heating equipment variable was significant and positive in fifty-three of the fifty-eight equations, usually at $\alpha < .01$. The central air conditioning dummy was significant and positive in fifty-two of the regressions.

Parking facilities were categorized into two dummy variables, presence of any type of garage and presence of off-street parking (e.g., carport or parking lot). Presence of a garage significantly increased rental value in forty-five of fifty-eight equations. Presence of off-street parking significantly increased rental price in twenty-six of the regressions.

Other coefficients which were significant in one-half or more of the SMSAs and usually of the expected sign were those for presence of storm windows (positive), presence of abandoned buildings in the neighborhood (negative), age of the structure (negative), and the neighborhood rating variables. Presence of all kitchen facilities for private use of the household exerted a positive and significant influence on rental price, while a floor plan which detracted from privacy (i.e., had to go through a bedroom to get to other rooms in the unit) exerted a negative and significant influence.

Many of the coefficient estimates had t-statistics which have absolute values greater than 1.65 ($\alpha < .10$; two-tailed test), but are not of the expected sign in all SMSAs. (see Table 2) Because several thousand coefficients are estimated, at least some of these anomolies may be attributed to randomness or may illustrate diversity among housing markets. In the cases of a few variables, however, a significant coefficient had the "wrong" sign in a relatively large number of the estimates. In these cases, another explanation or conjecture is called for.

Three variables which consistently exhibited the opposite of the expected signs were dummies indicating that the interviewee believed that crime is a problem in the neighborhood (expected sign: +) that the interviewee believed that the neighborhood schools were adequate (expected sign: +), and that the unit was rented furnished (expected sign: +). It is likely that these variables may be picking up the influence of unmeasured quality or occupant characteristics. For example, furnished units may generally be lower quality, and consequently, rent for less than unfurnished units. Both the crime and school variables were the interviewer's opinions about neighborhood conditions. It is possible that higher-income occupants of higher-priced housing may be more critical of neighborhood conditions. Opinions may not bear a relationship to actual conditions. A more objective measure of these variables would provide additional insight, but was unavailable in the AHS data set. The housing rating variables had a perverse effect on rental price. The "excellent" coefficient was negative and significant in twenty-seven of the regressions, while the "fair" and "poor" ratings were positive and significant in twenty-five and thirty-three of the fifty-eight equations, respectively. This anomoly may indicate that these variables are picking up locational effects. Housing nearer to the central business district may be lower quality, but rent for higher prices. More precise locational information may be desirable but is unavailable in the AHS data set.

In summary, the results of the hedonic regressions indicate that the most importatnt and consistent predictors of housing values are the structural attribute variable including number of rooms, number of baths, type of heating and cooling equipment, and parking facilities. Slightly less important in terms of estimated coefficient significance and magnitude of influence were the structural variables storm window, age of the structure, privacy, and kitchen facilities. The presence of abandoned buildings in the vicinity and the overall neighborhood quality rating performed best among the neighborhood variables. In general, the neighborhood opinion variables (i.e., crime, schools, transportation, noise, nonresidential activity) did not perform well in terms of significance and consistency of the signs of the coefficients. This lack of performance may be because opinion variables are not good measures of neighborhood conditions, although occupant's perceptions should affect both the price they are willing to pay for housing, and their estimation of property values. The neighborhood opinions were included in the equations, because theoretically, neighborhood factors should affect property values, and these are the only information of that type available in the AHS.

CONSTRUCTION OF THE HEDONIC PRICE INDEXES

Given the set of fifty-eight price vectors, a reference housing bundle was selected. The bundle consisted of a thirty-year-old, five room, one bath structure rated as good by the occupant. The unit contained central, conventional-type heating, central air conditioning, full private kitchen facilities, firmly attached handrailings, working electrical outlets in each room, and lighted common hallways. Off-street (non-garage) parking was available. The unit was located in a "good" residential neighborhood in a suburban location. Transportation and schools were rated as adequate.

The bundle was then priced in each SMSA by multiplying the estimated prices of the bundle characteristics by their specified quantities and summing the products. Because the dependent variables in the hedonic regressions were in logarithmic form, this method yielded the expected value of the logarithm of rent. Therefore, the antilog of that value gives the predicted rent. The predicted values are listed in Table 1. Minneapolis-St. Paul was arbitrarily selected as the base SMSA for calculation of the price index ratios. The ratio of the predicted rent in $SMSA_i$ to the predicted value in Minneapolis-St. Paul, yields the price index for $SMSA_i$ relative to Minneapolis-St. Paul. That is,

TABLE 2. Members and Signs of Significant Coefficients ($\alpha < .10$; two-tailed test)

Variable	Expected Sign	# of SMSAs in which coefficient is significant and positive (total # SMSAs = 58)	significant and negative
Structural:			
ROOMS	+	58	
BATHS	+	58	
HEQUIP	+	53	
AIRSYS	+	52	
AGEST	-	9	37
AGESQ		22	10
STORMW	+	32	
HADDL	-	7	3
GRGE	+	47	
OSPRKG	+	26	4
KITCHEN	+	23	2
PRIVN	-	1	28
RAILOK	+	4	8
ELEV	+	18	20
SHOPS	-		14
NOWIRE	+	3	4
PLUGS	+	19	
LTS	+	13	4
IFF	+	7	16
RATS	-		
HEXCE	+	1	27
HFAIR	-	25	
HPOOR	-	33	
Neighborhood:			
SCH	+	1	16
CRIME	-	5	7
AIRN	-	5	19
STRN	-	13	
ABAN	-		15
NONRES	-	10	5
DUMP	-	6	4
JUNK	-	3	13
TRN	+	5	21
NEXCE	+	24	
NFAIR	-		31
NPOOR	-		25
Other:			
METRO	-	2	21
IMONTH	+	48	

$$P_{iMSP} = EXP(\sum_{k=0}^{n} \hat{\ell}_{ki} \bar{x}_k) / EXP(\sum_{k=0}^{n} \hat{\ell}_{k} \bar{x}_{kMSP}) \quad (3)$$

where P_{iMSP} is the price of housing in SMSA i relative to Minneapolis-St. Paul; n = the number of characteristics in the selected bundle, and $\hat{\ell}_{ki}$ = the estimated value of the vector of the hedonic prices in the ith SMSA and $\bar{x}$ = the selected quantity of each of the characteristics (x_k) in the housing bundle. The price indexes for the "standard" rental units are presented in Table 1.

IMPLICATIONS OF USE OF THE HEDONIC PRICE INDEX AS A PRICE VARIABLE

The purpose of the hedonic analysis in the present study was to obtain a standardized price variable for a study on mobile home demand.

In use of the hedonic price index as a price variable in a demand analysis, the issue of identifiaction must be addressed. The price indexes are predicted prices rather than observed market prices. Therefore, the question is raised as to whether they are endogenous to the model or exogenous variables. Rosen [8] provides insight into this question. He states that the implicit or shadow prices of the characteristics do not identify demand or supply, but reflect both consumer preferences and producer technologies. Therefore, it may be logical to expect that standard housing prices predicted from these implicit characteristic prices do not identify demand or supply in a structural equation. In other words, the hedonic price index should be considered to be endogenous to a demand model. This endogeneity must then be dealt with in estimation by a model containing an hedonic price variable.

SUMMARY AND CONCLUSIONS

This report has presented the development and analysis of cross-sectional indexes of rental housing prices using hedonic regression analysis and Annual Housing Survey data. The main finding is that substantial variation exists in the predicted prices across SMSAs. Therefore, it may be concluded that an hedonic price index will reflect interregional differences in the price of a standard housing unit. The hedonic technique has the unique feature of built in quality adjustment, given that the important attributes are known and can be measured. Further experimentation may be needed on the form of neighborhood-related variables in order that their exact influence may be assessed.

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CONSUMER UTILITY: ROLE OF THE VOLUNTARY SECTOR

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ABSTRACT

This article explores the nature of the Voluntary Sector and of volunteers, especially in relation to consumers. The utility derived by consumers from this sector is explained. Issues are identified, especially the boundary issue between the Household Sector and the Voluntary Sector. A role for family and consumer economists in future study of the Voluntary Sector is suggested.

INTRODUCTION

In addition to the Market, Public, and Household Sectors, the Voluntary Sector is an avenue through which consumers have their needs and wants met. It is important that family and consumer economists have a better understanding of the Voluntary Sector because consumers derive a great deal of utility from this sector, consumer organizations are part of the Voluntary Sector, and recent and proposed budget reductions impact on the Voluntary Sector, with important ramifications for consumers. Yet, family and consumer economists have studied the Voluntary Sector and resultant consumer utility very little. Possibly, they take this sector for granted as do many others. The purpose of this paper is to examine the Voluntary Sector from a consumer perspective, especially the contribution of the Voluntary Sector to consumer utility. We will discuss the nature of the Voluntary Sector, types of utility consumers derive from this sector, the nature of volunteers, and issues in the interaction of consumers and the Voluntary Sector.

NATURE OF THE VOLUNTARY SECTOR

The Voluntary Sector is referred to by other names: the Independent Sector, the Nonprofit Sector, and the Third Sector. Reference is made to a "third sector" because the literature in the field of voluntarism traditionally has ignored the Household Sector as a separate sector or has assumed that it is part of the Voluntary Sector [e.g., 7, 8].

Although privately controlled, the Voluntary Sector, in contrast to the Market Sector, operates on a not-for-profit basis and provides goods and services to others at little or no fee. This is accomplished through a wide variety of organizations and activities. For example, the American Red Cross assists disaster victims by providing first-aid services, food, clothing, and shelter at no charge to the recipients. Or, a nonprofit credit counseling center provides debt counseling to families on a sliding-scale fee basis.

Nonprofit organizations are a highly visible and important part of the Voluntary Sector. There are four distinct types of nonprofit organizations:

(1) funding agencies or fundraising intermediaries which exist to allocate resources to those who deliver services, e.g., United Way;
(2) organizations whose primary purpose is to provide goods and services to members, e.g., professional associations and unions;
(3) organizations whose purpose is to serve others, to provide goods and services to those in need, and to contribute to general welfare, e.g., social welfare agencies, cultural institutions, and hospitals;
(4) religious congregations--these may actually be part of the other types rather than set out separately [12].

The third type of organization listed above is the one where overlap occurs between the Public and Voluntary Sectors in these areas: (1) social welfare, including social services, community development, and employment and training; (2) health care; (3) education and research; (4) income assistance, (5) international relief and assistance, (6) culture and the arts, and (7) conservation and the environment. Although nonprofit organizations serve these same needs that public agencies do, the nonprofit organizations are set apart because they are privately controlled.

The nonprofit organization has a paid administrator and a paid staff, but the organization may rely heavily on volunteers to provide services to its clients. Frequently, the nonprofit organization uses public monies, in the form of government grants, to provide goods and services to its clientele. The collaboration of nonprofit organizations and federal, state, and local governments tends to be quite extensive with 1980 federal support alone at approximately $40 billion [11]. This collaboration is decreasing, though, with nonprofits likely to lose $33 billion in funding under FY 1982-85 proposed budget reductions [12]. For some nonprofit organizations involved in running public programs, this loss could be as much as 1/4-1/3 of their total revenues.

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The Voluntary Sector, with expenditures of $116 billion in 1980 [12], provides social services and health care much like the Public Sector. In fact, demand for these services is expected to increase dramatically with the federal government decreasing its own programs in these areas. This coupled with severe funding cuts to nonprofits threatens to put these organizations at great financial risk and in an extremely weak position for continued existence.

But, today's Voluntary Sector also includes other types of voluntary associations, such as citizen participation, issue-oriented, and self-help groups. Consumer groups organized to protect consumer rights and the American Council on Consumer Interests are examples of these types of voluntary organizations. Self-help groups are the fastest growing segment of the Voluntary Sector [10]. Of special interest to family and consumer economists are self-help groups organized to help consumers to maximize resource use, such as bartering exchanges, and those which focus on particular consumer problems, such as health concerns, psychological problems, and alcohol and drug abuse. In these self-help groups, individuals voluntarily donate their time to help solve their own problem(s) as well as those of other group members.

Providing for community needs outside government has characterized American society from its beginning when early settlers helped each other to build houses and schools [4]. Voluntary activities have continued as an American phenomenon. In the early 1980's, the value of time given to volunteer work was estimated at approximately $65 billion per year [7]. This is the most recent estimate available due to the complexity of measuring time spent in volunteering and of determining its value. The Voluntary Sector consists of approximately six million organizations. Further, one out of every ten service workers and one out of every six professional workers were employed by nonprofit organizations in 1975 [3]. Given the magnitude of this sector, the potential impact of the Voluntary Sector on consumer utility is great.

CONSUMER UTILITY FROM THE VOLUNTARY SECTOR

Individuals derive utility from two sources via the Voluntary Sector: either as recipients (consumers) of the goods and services provided by the Voluntary Sector, or as providers of the goods and services. Utility for recipients usually is measured in monetary terms while utility for providers is assessed in terms of satisfactions received.

Recipients are those who obtain benefits in some way from the sector. Elderly, disabled, and economically disadvantaged persons, as well as youth and individuals with consumer problems, are typical consumers of goods and services from the Voluntary Sector. Recipients obtain a variety of goods and services, similar to the goods and services provided by the Public Sector, including assistance with food, clothing, and shelter. Consumers or recipients also receive benefits from organized efforts to clean up the environment, to protect consumer rights, to provide needed self-help services, etc. Recipients can invest some of their own time and/or money in the production of needed goods and services, or they can be "free riders" and obtain goods and services without contributing any time or money [8].

TABLE 1. Volunteer Activity of U.S. Adults, Aged 14 Years and Older, March 1981[a]

Activity	Percentage Who Volunteered in Past Three Months	Mean Number of Hours Spent Volunteering in Past Three Months[b]
Arts and Culture	2	31
Religious	11	28
Work-Related	5	28
Recreation	3	28
Justice	--[c]	27
Informal/Alone	14	27
Health	8	26
Citizenship	3	25
Social/Welfare	3	23
Education	10	22
Political	4	21
All Other Areas	1	19
Community Action	5	18
General Fund Raisers	3	12

[a]Source: Independent Sector. Americans Volunteer: 1981. Washington, D.C.: Independent Sector, 1981.
[b]Mean excludes respondents who spent no volunteer hours in the past three months but who volunteered in each area in the past year.
[c]Less than one percent.

The services performed by unpaid volunteers are impressive in terms of both variety and total volume. Table 1 indicates volunteer activity in March 1981 of U.S. persons, aged 14 years and older [6]. The sample in this study was designed to produce an approximation of the adult non-institutionalized U.S. population. Volunteer work was defined as "working in some way to help others for no monetary pay," and the definition excluded work for one's own family. Results indicated that the volunteers spent time in a variety of activities in the previous three months with the largest percentages of volunteers in informal, education, and religious activities. This array of volunteer activities indicates the myriad of services consumers enjoy, either directly or indirectly, from the Voluntary Sector. Further, mean number of hours in these activities, which ranged from 48 to 124 per volunteer on an annual basis, suggests the magnitude of these services to consumers in personal time expenditure. Without the efforts of volunteers, these services would be left undone or would have to be purchased through the private or public sectors. In either event, total utility would be diminished for consumers.

Providers of services, known as volunteers, give time, and often money, to produce goods and services for others. Those who provide goods and services to the Voluntary Sector do so in the role of youth group leader, hospital aide, charity fund collector, athletic team coach, volunteer firefighter, homemakers' club member, Cooperative Extension Service Council member, unpaid consumer lobbyist, and expert witness. Traditionally, volunteers were viewed as purely altruistic; they gave of their time unselfishly with no expected return. Present studies suggest that volunteers donate time and receive a variety of returns, from the satisfaction of helping someone else, to job skills acquired for self, to fellowship, to some type of needed service for a family member [13, 14]. Although these returns are not all economic, they do add greatly to consumer utility through psychic income.

NATURE OF VOLUNTEERS

The Voluntary Sector has a sizable number of unpaid workers providing needed services to consumers, and a greater proportion of the population is volunteering than ever before [9]. Using the fairly broad definition of "working in some way to help others for no monetary pay," the Gallup Organization found that 52 percent of American adults provided some voluntary service in 1981 [6]. Types of voluntary organizations have changed somewhat over time, so volunteers are now less likely to spend time in human service types of voluntary organizations and more likely to be involved in self-help groups and citizen participation activities. Givers of services in the Voluntary Sector come from every economic group, rather than just from the wealthy class as in the early days of volunteering. Even the customary recipients of services are now volunteers [9]. Although all educational, economic, and racial groups are represented in the volunteer ranks, the average volunteer continues to be a white, married woman with a relatively high education and income level [1, 6, 16].

Traditionally, married women were major providers of time needed, but the increase in women's labor force participation has changed that somewhat. Although women are the primary volunteers, and many continue to volunteer after entering the labor force, they seem to spend fewer hours in volunteer work.[3] To fill this void, other segments of the population have been recruited, especially the elderly and men.

ISSUES IN THE INTERACTION OF CONSUMERS AND THE VOLUNTARY SECTOR

There are several issues related to the interaction of consumers and the Voluntary Sector which would profit from the attention of family and consumer economists. These are: (1) the impact of consumers on the Voluntary Sector, (2) the impact of the Voluntary Sector on consumer utility, (3) the boundary issue between production and consumption, (4) the boundary issue of the Household Sector and the Voluntary Sector, including appropriate and precise definitions of activities of the two sectors, and (5) clarification of definitions and activities within what is currently loosely incorporated under the rubric, "Voluntary Sector."

Consumers shape the Voluntary Sector through the types of goods and services they demand (and through the time and money they in turn supply as producers). In recent times, demand has increased because consumer incomes have been reduced or eliminated, thus requiring them to seek services from the Voluntary Sector. Cuts in government programs also have motivated consumers to seek these services from the Voluntary Sector. The types of individuals who volunteer affect the quantity, quality, and variety of services that the Voluntary Sector can provide to recipients. For example, as the qualifications of the current pool of volunteers change, so does the quality of services that can be given to the recipients. The impact of consumers in these two ways has not been analyzed adequately. How women's increased labor force participation has affected the amount of time spent volunteering and the nature of their volunteer activity needs to be addressed, rather than merely whether women continue to participate. Possibly, professional women are more involved in leadership roles and volunteer work related to their employment, as professional men have tended to be. This would be a departure from women's large role in service-type volunteering in the past. How women's labor force participation affects services demanded from the Voluntary Sector is important too.

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[3] National volunteer time-use studies have concluded that women's volunteer work participation has been maintained or has increased. Since volunteer time in these studies was measured as participation (yes or no) rather than in hours of time spent, this conclusion is not valid [e.g., 1, 6, 16].

Some work has addressed the assessment of the value of volunteer work in monetary terms, but this is either dated [19, 20] or based on questionable assumptions [7]. In the latter instance, the value of volunteer time was estimated through analyzing volunteer time by educational level of the volunteers. Then, the volunteer hours for those in each educational category were multiplied by the 1980 Census Bureau survey average hourly wage for that educational level. This method does not provide a value for the work performed comparable to that for the same type of work performed in the Private Sector. Additionally, only an aggregate value was reported. A more thorough analysis would tally the value of services by voluntary activity to demonstrate added value to education, health, social services and other categories of volunteer activity. In recent times, family and consumer economists have studied time inputs and value of products produced by the Household Sector. We could lend our expertise in further understanding time inputs and product value of the Voluntary Sector, as well as the consumer economics perspective in regard to consumer utility derived from the Voluntary Sector.

Research is needed, too, to identify psychic income received by volunteers, especially that related to specific types of voluntary activity. Volunteer work presents researchers an opportunity to explore the boundary problem between production and consumption; here, satisfactions enjoyed by the producer evolve out of the production process itself. The production process generates satisfactions for the simultaneous or concomitant enjoyment of the producer. The self-help group is an example of this phenomenon.

Toffler [15] maintains that we are shifting from the passive consumer to the active "prosumer." He suggests that households in the future will produce more of their own goods and services, but in a very selective and voluntary fashion unlike the type of production needed for survival reasons that took place in early American households. He calls this phenomenon "prosuming," and cites self-help medical care and participation in self-help groups as prosuming. In these activities, consumers create services for themselves instead of purchasing these services in the market. In a self-help group, one individual gives support to another and in so doing helps him/herself. This type of activity has in it many of the elements of activities identified as home production. Yet, this production may be performed outside the household and creates utility for others. Thus, at the same time that the consumer may be creating household production utility, he/she also may be creating utility for another person through the Voluntary Sector. Thus, some types of volunteer activity present a boundary problem between the Voluntary Sector and the Household Sector. Family and consumer economists can contribute by assisting the Voluntary Sector to recognize the existence and worth of the Household Sector and by making clear the definition of the Household Sector as a distinct sector apart from the other three sectors.

Indeed, the Household Sector and the Voluntary Sector both contribute so much in quantitative and qualitative terms that they merit greater recognition than they have yet received in a society which has focused its attention largely on dollar measures of market goods and services. If adequate account is to be taken of the contribution of these two sectors to the total flow of goods and services, no matter how loosely measured or by what alternative methods, this boundary issue must be addressed and resolved. Failure to do so incurs the risk of double counting or failing to take stock of noteworthy contributions of each sector. In a time when the measurement and valuation of household production is receiving increasing attention, and similar attention to the Voluntary Sector also has been increasing, the definitional issue takes on heightened significance.

Finally, family and consumer economists and other analysts can make a valuable contribution to the conceptual base of the Voluntary Sector by refining more carefully the activities which are currently subsumed under that title. Clearly, unpaid volunteer work to benefit persons other than family members falls within that domain. However, the term Voluntary Sector is sometimes equated with "Nonprofit Sector"; yet in some nonprofit agencies the service providers may all be paid, albeit perhaps at modest wage rates, and the only element that is "volunteered" is the capital on which no return is sought. If effective analysis of the Sector and quantification of its output is to be accomplished, such definitional problems must be resolved.

SUMMARY, PROJECTIONS, AND IMPLICATIONS

The Voluntary Sector clearly has a significant impact upon the flow of services and goods enjoyed by consumers, and thus upon the quality of their life experience. Futurists suggest that our society is developing in ways that will make the role of the Voluntary Sector even more important than today. Etzioni [5] states that the "most promising solutions to our domestic problems are among the third sector approaches now evolving." We are becoming much more involved in production of needed services through the Voluntary Sector, especially those services previously provided by the Public Sector. And, we are becoming much more involved in seeking new solutions to our problems in the face of budget cuts and increasing demands for services [2]. Evolving economic conditions and societal orientations would suggest that this is not likely to be a short-lived phenomenon. Thus, the Voluntary Sector, already very important, will merit increasing recognition and attention from consumers and family and consumer economists.

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DO ECONOMIC CONDITIONS INFLUENCE PRODUCT PRICE-QUALITY CORRELATIONS?

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ABSTRACT

The study tested the relationship between economic indicators and the fluctuations in product price-quality correlations in the Japanese market, 1972-1981. Separate multiple regression equations related the Consumer Price Index, Wholesale Price Index, Import Price Index and the Gross National Product to price-quality correlation coefficients while controlling for differences in types of products tested. Each economic indicator was inversely related to price-quality, and the three price indexes were significant at the .05 level. However, the results may be unique to Japan and to the time period studied.

A number of studies have computed price-quality correlations based on the data published in consumer product testing magazines (1,6,7,9,11,13). All have found wide variations in price-quality correlation coefficients across a wide range of products tested, in different time periods and in several countries. There is overwhelming evidence that price-quality correlations for products fluctuate widely and that the level of price-quality correlations is, on average, so modest that price cannot be used as a guide to quality (1,6,7,9,11,13).

Among the reasons generally suggested for the low average correlation and the wide variations over time are, first, that consumer information is far from perfect (5). Products are often complex and quality is therefore difficult to assess. Secondly, competition is less than ideal. There are too few sellers and product differentiation, whether real or perceived, has diverted attention from price competition (5).

The purpose of this study is to consider an additional factor, changes in economic conditions, as an influence on price-quality correlations. During periods of rapid economic change, products and their prices change more quickly. Manufacturers are adjusting prices, packaged quantity (packaging to price), and/or product quality because of their changing costs. Packaging to price and some changes which reduce quality are not highly visible to the consumer and, additionally, manufacturers and sellers are not likely to call them to the consumer's attention. Changes in price, quantity and quality cause consumer information to deteriorate. Thus, the residual knowledge--awareness of usual prices for a product and past experience with the product--becomes outdated (12). Because these changes occur more quickly in periods of rapidly changing economic conditions, it is hypothesized that price-quality correlations will generally be lower during periods of rapid economic change and be higher during more stable economic periods. This study considers methodology to analyze the relationship of economic conditions to price-quality correlations and reports results for the country of Japan.

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RELATED LITERATURE

In a study of 685 product categories over the 15 year period from 1961-1975 using data from Consumer Reports magazine, Riesz plotted mean price-quality rank correlation coefficients for each year of the study. Annual mean correlations ranged from .192 to .345. Based on his plotted data, Riesz concluded that there was no "systematic evidence of any overall deterioration in the relationship of price to quality over a 15 year period," even though the first five years studied were characterized by price stability and the 1973-1975 time period was inflationary (10, pg. 23). One source of variation in the price-quality correlations which concerned Reisz were the differences in the product categories tested from year to year, upon which the annual mean correlations were based.

ECONOMIC CONDITIONS IN JAPAN

In the ten year period studied here, 1972-1981, there were a number of changes in economic conditions in the Japanese market. Two Arab oil embargoes affected the Japanese economy heavily. The first Arab oil embargo occurred in autumn, 1973, and is referred to in Japan of the first oil crisis; the second embargo happened at the end of 1978 and is known as the second oil crisis.

The first oil crisis lead to a tremendous increase in the Import Price Index (IPI) in Japan. The IPI rose 66% in 1974, from a level of 115.8 in 1973 to 192.6 in 1974. The increase in the IPI was accompanied by rises in the Wholesale Price Index (WPI) and Consumer Price Index (CPI) of 31% and 24% respectively in 1974. Owing to a scarcity of natural resources, Japan must import most of the raw materials and energy fuels which are used. Therefore, the Import Price Index can be considered a leading indicator, followed by the Wholesale and Consumer Price Indexes.

The major impact of the first oil embargo occurred in 1974. In the following year, the annual rate of increase in all indexes modified, although the time lag of the price pass through to the Consumer Price Index is reflected by its higher percentage change in 1975, as compared to the other two price

indexes. The IPI rose 8%, the WPI 3%, and the CPI rose 12% in 1975. This moderation was at least partially due to the tight money policy of the Japanese government. Also, consumption and investment were reduced because people were pessimistic about the future, owing to the oil crisis and the recently experienced high rates of inflation.

Modest increases in the IPI and WPI, along with the relatively greater creeping up of the CPI, characterized economic conditions in Japan until the end of 1978, when the second oil crisis occurred. Because the crisis occurred at the end of the year, the main price index effects are seen in 1980. Between 1979 and 1980, the IPI, WPI, and CPI increased more rapidly again. However, the rates of increase were not as high as in 1974, being 26% for the IPI, 18% for the WPI, and 16% for the CPI in 1980. There are several reasons for the somewhat smaller increases in the price indexes. First, the increase in the price of imports, as measured by the Import Price Index was less than in 1974 and was reflected in lesser increases in the WPI and CPI. Second, while extra price "padding" of the CPI--beyond the pass-through of higher import and wholesale prices--had occurred in and after 1974, it did not occur after the 1978 embargo. Third, people had learned from their experience with the first oil crisis and were not as alarmed by the late 1978 oil crisis.

DATA SOURCES

Price-Quality Correlations

The data source for price-quality correlations was Monthly Consumers, the product testing magazine published by the Japanese Consumers' Association (JCA). The JCA is a non-profit organization founded in 1961 to inform and educate consumers (2). It is an associate member of the International Organization of Consumers Unions. Forty percent of the income of the JCA comes from publications, 17 percent from contributions, and 43 percent is subsidized by the Japanese government.[1] Monthly Consumers has a circulation of 600,000[1] which is 1.7 percent of all Japanese households.

The JCA selection of products to be tested gives some consideration to consumer responses to questionnaires and consumer opinions. This consumer input is reviewed by JCA Product Testing Committees, which make the final selection of the more than twenty products to be tested each year. For the most part, nationally distributed durable goods are tested. Almost every individual product category tested in the ten year period studied here included one model from each manufacturer whose products are widely distributed.

Economic Indicator Data

The data for price indexes was compiled by the Statistics Bureau of the Office of the Prime Minister of Japan and Published in the Japan Statistics Yearbook each year (3). The data on the Gross National Product was from two sources, the Office of the Prime Minister of Japan and a Tokyo periodical, The Oriental Economist (8).

[1]Personal conversation with members of the staff of Monthly Consumers, January 1982.

DEVELOPMENT OF PRICE-QUALITY CORRELATIONS

The data for both manufacturers' list prices and qualitative ratings were reported by Monthly Consumers in monthly issues of the magazine over the ten year period, 1972-1981. Manufacturers' list prices are usually published since national average purchase prices are not available. However, in those rare cases when manufacturer's list prices could not be obtained, purchase prices are used. The prices published in Monthly Consumers were ranked ordinally and coded numerically from low to high.

Monthly Consumers' total quality evaluation grades for products are reported as A, B, C, and X. These were translated into numerical ranks. Usually some of the total quality evaluation grades were tied. When a tie occurred, total quality evaluation grades were re-computed to determine each model's total quality score using the following equation:

$$\text{Total Quality Score} = \frac{\text{Sum of (Weights x Characteristics Scores)}}{\text{Sum of the Weights}} \quad (1)$$

Each characteristic's weight was obtained from Monthly Consumers individual product test reports. Points for characteristic scores were obtained by translating the alphabetical designation of quality levels into numerical points when the models were tied on total quality grade. The tie-breaking procedure resulted in fewer tied rankings. The total quality scores, with recomputation when necessary to break ties, were ranked ordinally and coded numerically from low to high.

Spearman's rho correlation coefficients were used to determine the relationship between price and quality. However, coefficients could not be computed for three product sets because all the prices in two sets were identical and all the quality ratings in one product set were identical. Therefore, the total number of product sets available for analysis was 80, and 80 price-quality correlation coefficients were used in this study. The coefficients varied within a wide range, from +.87 to -.80. A total of 45 of the coefficients were negative (56 percent). The mean and median coefficients were -.055 and -.151, respectively.

PRELIMINARY ANALYSIS

Because of Riesz's conclusions in previously conducted research, this study proceeded cautiously. Were Japanese economic conditions in 1972-1981 sufficiently different from those in the United States in 1961-1975, the period Riesz studied, to warrant further study of the relationship of economic conditions to price-quality correlations? Preliminary analyses were conducted to answer that

question before making a decision on the investment of substantially more time to refine economic measures for a more precise analysis. Plotted annual mean correlations and average annual economic indicators did appear to show similarities (Figures 1 and 2).

Variable Development

To control for variation in the annual mean price-quality correlations due to differences in the categories of products tested, the correlations for individual product test report articles were categorized by types of products--small appliances, large appliances, entertainment equipment, photography equipment, and bicycles. The mean correlations for product categories were -.217 for small appliances, -.066 for large appliances, .029 for entertainment equipment, .039 for photography equipment, and .493 for bicycles.

The year of publication of the product test report was introduced as the variable to measure changes over time. It was assumed that year served as a proxy for economic conditions during that year. The year of 1981 was omitted because economic data were not yet fully available for that year at the time of the analysis.

Findings

The test of the first equation, which related product categories and published year to price-quality correlations, yielded an R-square of .284 (See Table 1). All four dummy variables for product categories, compared to the omitted category of small appliances, were significant at the .05 level, indicating that product categories did influence annual mean price-quality correlation coefficients. The sum of the changes in r-squares for the product categories was .162. Published years were entered as dummy variables, being compared with the omitted year of 1972. Five of the eight published years tested were significant at the .05 level; these were the years of 1975 through 1979. This was the time span from the end of the first oil embargo through the time of the second oil embargo.

ECONOMIC INDICATOR EQUATIONS

Based on the results for the first equation, the decision was made to proceed with further analysis, replacing published years with economic indicators. The annual average level of the Import Price Index, Wholesale Price Index and the Consumer Price Index; the annual average level of the Gross National Product in millions of yen, and measures of Consumer and Manufacturer Sentiment were used to replace published year. Due to the relatively high correlations between economic indicators (the IPI, WPI, CPI, and GNP), in the .563 to .911 range, four multiple regression equations were used, relating the product categories and measures of sentiment, along with one economic indicator at a time, to price-quality correlation coefficients.

Findings: Economic Indicator Equations

Each of the four equations yielded R-squares which were substantially the same as that for the equation which used published years as a proxy for economic conditions. (See Table 2). Thus, the change to economic indicators appears to offer a very complete replacement for the proxy variables, published years, used in the first equation. Two of the four product categories were significant at the .05 level; these were entertainment equipment and bicycles, when compared with the omitted product category, small appliances. A third category, photography equipment, approached significance in the IPI, WPI, and CPI equations and reached the .05 level in the GNP equation. Consumer Sentiment was significant in the GNP equation; neither measure of sentiment was significant in any other equation. Each of the price indexes and the GNP were found to be significant at the .05 level; their change in r-squares ranged from .073 for the IPI and .071 for the WPI down to .049 for the CPI and .039 for the GNP.

The results were encouraging; economic indicators, as well as the categories of products tested did explain a moderate amount of variation in the level of price-quality correlation coefficients. Decisions were made to carry the analysis further, after 1) developing more precise measures of economic indicators, and 2) dropping the indexes of Consumer and Manufacturer Sentiment to provide a more direct and pure analysis of economic conditions only.

FINAL ANALYSIS

Variables

The product categories were continued as used previously. The three price indexes were refined in several ways. First, annual average indexes were replaced with monthly levels of the index. Second, because price data must be collected prior to publication and distribution of the product test magazine, the relevant economic indicator is from the time when price data is collected, not when it is published. This time lapse was approximately six weeks, a figure which was rounded up to two months to identify the appropriate monthly price index to be related to a price-quality correlation coefficient. Therefore, the time period of the price index data leads the publication date of the price and quality data by two months. The alternate way of stating this is that the publication date of the price and quality data lags the price index by two months.

Third, the annual average Gross National Product data was replaced with quarterly Gross National Product data, since this was the most specific time period for which data were available. A procedure similar to that for the price indexes was used to allow the time period of the GNP to lead the time period of the price-quality correlation coefficients by two months.

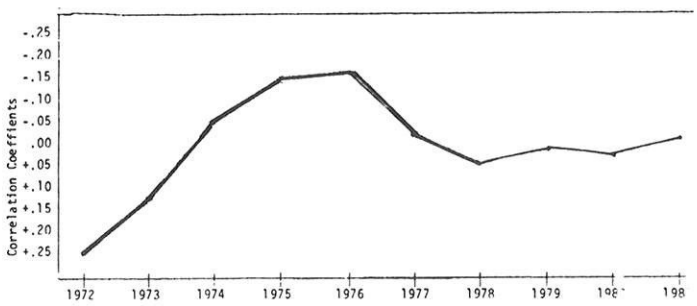

Figure 1. Mean Price/Quality Correlation of All Product, by Year, Japan 1972-1981.

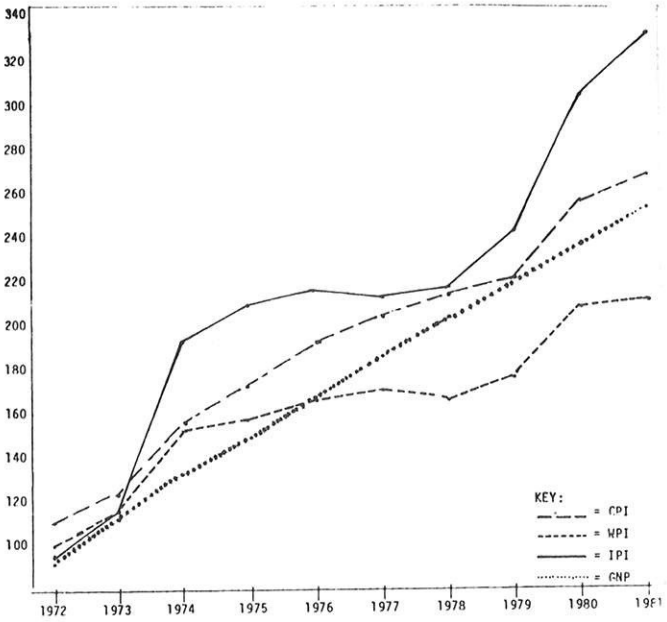

Figure 2. Annual Levels of Economic Indicators in Japan, 1972-1981.

TABLE 1. Variance in Price-Quality Correlations Explained by Product Category and Published Year, 1972-1981[a]

Independent Variable	Δr^2	Beta	F stat.
Non-motorized Vehicles[b]	.139	.443	12.549*
Entertainment	.016	.383	6.838*
Photography Equipment	.007	.189	2.028*
Large Appliances	.000	.276	3.520*
1973[c]	.004	-.136	.820
1974	.022	-.263	1.708
1975	.031	-.407	4.046*
1976	.026	-.428	5.128*
1977	.001	-.376	3.345*
1978	.000	-.286	2.258*
1979	.003	-.300	3.209*
1980	.034	-.135	.478
R^2	.284		
Mean of Dependent Variable -.025			
Standard Deviation of Dependent Variable .437			

[a]Since the CPI for 1981 was not available, the coefficients of 1981 were deleted, leaving an N of 68 cases.

[b]Omitted category of products is small appliances.

[c]Omitted category of published year is 1972.

*Probability - .05.

TABLE. 2 Variance in Price-Quality Correlation Coefficients Explained by Product Category and Economic Indicators, 1972-1978[a].

	Equation with IPI			Equation with WPI			Equation with CPI			Equation with GNP		
Independent Variable	Δr^2	Beta	F-stat.	Δr^2	Beta	F-stat.	Δr^2	Beta	F-stat.	Δr^2	Beta	F-stat.
Bicycles	.173	.450	11.153*	.161	.442	10.664*	.155	.443	10.714*	.150	.441	10.591*
Entertainment	.019	.321	4.472*	.022	.332	4.764*	.022	.334	4.844*	.023	.339	4.962*
Photography Equipment	.003	.155	1.174	.002	.160	1.240	.003	.160	1.252	.003	.163	1.289*
Large Appliances	.022	.093	.361	.020	.088	.318	.014	.089	.325	.013	.089	.328
Consumer Sentiment	.001	-.041	.093	.004	.069	.289	.031	.210	1.990	.035	.237	2.264*
Manufacturer Sentiment	.000	-.008	.002	.005	.089	.381	.013	.124	.813	.021	.168	1.601
Import Price Index (IPI)	.073	-.346	4.432*	--	--	--	--	--	--	--	--	--
Wholesale Price Index (WPI)	--	--	--	.071	-.284	4.006*	--	--	--	--	--	--
Consumer Price Index (CPI)	--	--	--	--	--	--	.049	-.320	4.073*	--	--	--
Gross National Product (GNP)	--	--	--	--	--	--	--	--	--	.039	-.318	3.912*
R^2	.291			.285			.286			.284		

[a]Since most independent variables' data from 1979 through 1981 were not yet available, the coefficients after 1978 were not included in the analysis. The remaining N. of cases was 54.

*P. - .05.

TABLE 3. Variance in Price/Quality Correlations by Product Category and Economic Indicators, Japan 1972-1981

	Equation with CPI			Equation with WPI			Equation with IPI			Equation with GNP		
Independent Variable	Δr^2	Beta	F Stat.	Δr^2	Beta	F stat.	Δr^2	Beta	F stat.	Δr^2	Beta	F
Product Categories (small appliances omitted)												
Large Appliances	.000	.211	2.634*	.000	.202	2.360*	.000	.200	2.325	.000	.226	2.970*
Entertainment Equipment	.021	.301	5.609***	.016	.288	5.028***	.015	.285	4.924***	.018	.297	5.304**
Photography Equipment	.014	.198	2.809*	.015	.204	2.970*	.015	.202	2.900*	.017	.210	3.126*
Bicycles	.098	.330	8.890***	.112	.351	10.001***	.111	.350	9.996***	.101	.335	8.961**
Consumer Price Index (CPI)	.048	-.189	3.162*									
Wholesale Price Index (WPI)				.030	-.164	2.349*						
Import Price Index (IPI)							.034	-.171	2.552*			
Gross National Product (GNP)										.026	-.126	1.378
R^2	.182			.173			.176			.163		

* = p. ≤ .05, ** = p. ≤ .01, and *** = p. ≤ .001

Fourth, an economic indicator may influence price and quality levels for a product only after some time lapse. Therefore, lead time beyond the above mentioned two months were introduced into the price indexes. Since it was difficult to identify how long it should take for a general rise in consumer, wholesale or import prices to influence the price and quality of a product, three time leads were used for each price index. These were a quarterly, half-year and full-year lead. Thus, the quarterly lead price indexes led the magazine publication date by two months plus three more months, for a total lead time of five months. Half-year leads were eight months and full year leads were fourteen months prior to the publication date of the magazine.

Fifth, in the elapsed time since completion of the preliminary analyses, economic indicators had become available for additional years; all ten years of data could now be analyzed.

Findings: Final Equations

The greater precision of the economic indicators and the addition of several years of data to the analysis did not result in the greater explanation of variance in price-quality correlation coefficients. In fact, the results were the opposite. Ten regression equations were computed, relating quarterly, half, and full-year leads of each price index and the current level of the GNP to the price quality correlations. The price index equations reported here are the quarter-led CPI and the full-year led WPI and IPI. These price indexes were selected for reporting because they had the largest changes in the r-square for the economic indicator.

In the four final equations reported here the R-squares dropped to the range of .182 for the CPI equation to .163 for the GNP equation. The three price indexes reached the .05 level of significance; the GNP was not significant in its equation. Each of the economic indicators was inversely related to the price-quality correlation coefficients--the hypothesized relationship. Most of the product categories tested in this final set of equations are significantly related to the correlations coefficients. The two product categories found significant at the .01 or .001 level in each of the four equations were entertainment equipment and bicycles. These are the same categories found significant in the preliminary set of economic indicator equations.

DISCUSSION AND CONCLUSIONS

Why was explanatory power weaker in the final set of economic indicator equations? First, the longer time span, ten years, tested the hypothesis in a time of more stable economic conditions as well as in the years of reaction to the first oil crisis and the continuing gradual rise of the CPI up to the time of the second oil embargo. It appears that the hypothesis needs to be tested over a relatively long period of time in order to be able to generalize to a range of normally experienced economic conditions.

In conclusion, despite the apparent relationship between the correlation coefficients in Figure 1 and the economic indicators in Figure 2, as well as the results in Tables 1 and 2, the best test of the relationship is found in Table 3. The strength of the relationship weakened as the quality of the measurement of the economic indicators improved. The equation R-squares for the price indexes fell to .173 to .182, but did remain significant at the .05 level. The equation which included the GNP was not significant.

The conclusion Riesz reached with United States data from 1961-1975 differs from the conclusion reached here with Japanese data from 1972-1981. There are a number of reasons for the inconsistency. First, the difference in quality data from U.S. and Japanese product testing magazines makes it necessary for those using U.S. data to accept more ties in the data used to compute price-quality scores. Applying Riesz's correlation methodology to the Japanese data, (done in this study but not reported here) results in no economic indicator being significant at the .05 level. Second, economic indicators with quarterly, semi-annual and annual leads were analyzed and only the equations with the highest R squares are reported in Table 3. Quarterly or semi-annual leading of the WPI and IPI resulted in non-significant results. The CPI was significant at the .05 level in the quarterly and annual lead equations, but not the semi-annual equation. It appears that care must be taken in identifying the time lapse necessary before a price rise influences price-quality correlations.

Third, Riesz used data for a longer period of time, 15 years, including both inflationary and relatively stable economic periods. Riesz's findings are likely to be more generalizable to the normal range of economic conditions. This study uses a ten year time span in Japan which contain two Arab oil embargoes; it is a unique and extreme time period in a nation highly dependent on imported oil. Thus, it appears that quite unique and extreme economic conditions may be a necessary pre-condition to finding a relationship between price-quality correlations and the level of economic indicators in a country. Even when that unique economic condition does exist, a selective methodology (tie breaking of correlations and careful choice of time leads for the economic indicators) was needed to achieve findings statistically significant at the .05 level. The results here should not be applied to other time periods and other nations.

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TESTING OF THE EFFECTIVENESS OF A CONSUMER EDUCATION PROGRAM FOR PRESCHOOLERS'[1]

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ABSTRACT

The effectiveness of the advertising unit and materials developed for use in it were tested on a sample of their intended audience - preschoolers. A storybook, tape/slide presentation and an advertising unit were used by preschool teachers with their classes. Results of testing indicated that the materials did increase the children's knowledge and understanding of advertising.

INTRODUCTION

The process of consumer socialization involves interaction between the child and his/her environment. Within the child's environment, the family, peers, school and television advertising have been identified as important agents which play a central role in socializing children into the consumer role. While focusing on preschool children, it becomes evident that certain socializing agents are more influential than others at this stage of development. Studies undertaken to assess the relative influences of family and peers have generally shown that parental influence decreases and peer influence increases with age [12]. The significance of parental influence on very young children is supported by research which notes that mother-child interaction is most effective in developing consumer skills at the kindergarten level:

> Mother-child interaction variables clearly provide positive support for the kindergartener's performance of consumer skills, but not for third- graders and sixth-graders, where the pattern of relationships is mixed. The result suggests that the role of parent-child interaction in supporting the child's performance of various consumer skills decreases with age... [13, p. 151].

Parents can have a major impact on developing the consumer skills of their children. It should be noted, however, that mothers actually have very few specific goals for their child's learning of consumer skills. Instead, it appears as though much of the teaching process is unintentional on the part of parents and occurs more subtly through imitation and modeling influences.

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Because of the informal and often indirect consumer training practices of parents, other socializing agents are needed to pick up where parental training leaves off and schools seem to be the most likely candidates for the job. As one researcher says, "... apparently parental 'consumer training' of offspring is more often a hit-and- miss proposition, leaving gaps that schools could fill" [13, p. 188]. Other researchers [11] lend support to their argument that classroom consumer education is an effective way of developing the consumer skills of preschoolers. Children between the ages of two and six are capable of learning in a classroom setting certain "core consumer concepts" which can then be built upon in the development of more sophisticated consumer behaviour.

The impact of television advertising upon children has been the subject of much debate in recent years. The debate centers around whether the effects of this advertising are good or bad. Although television advertising does contribute to some consumer learning by providing product and shopping information, other socializing agents, such as the family, tend to mediate the effects of advertising [13]. Teaching children to evaluate and deal with the effects of advertising is also an educational task for classroom teachers. Consumers obtain much of their consumer information from television [6]. Both young children and adults, cite television as a primary consumer information source [2, 5].

At the preschool level then, the family and the schools appear to have the greatest potential to influence the consumer socialization process. Influence from peers is more significant in the socialization of older children, and advertising, although it does contribute to some consumer learning, is subject to mediating effects from both families and schools. The focus here will be on the role of the schools in socializing the preschool child into the consumer role.

WHAT PRESCHOOLERS KNOW

In general, young children (3-5 years) have very isolated ideas about the marketplace. While they do have numerous experiences with nearly every concept of economics, these experiences are fragmented, without any explanation or relationship to other experiences they have had [10]. Also children of this age are not able to generalize well from the general to the specific [4], and therefore, everything they learn must be acquired by experiencing things first-hand. In other words, perschoolers learn by doing. The idea of time and the future are difficult for a small child to grasp and therefore, their

knowledege is based on immediate experiences in the here and now. Table 1 outlines the results from the several research projects which have focussed on knowledge levels of the young child.

One of the most interesting problems for researchers arises out of newer evidence that young children may know quite a bit more than first thought. Our failure to so conclude may be based in our reliance on verbal reports and elaborations. The limited ability of young children to make themselves understood in the test environment may result in our underestimating their actual level of knowledge.

TABLE 1

General Research Results of
Preschoolers' Knowledge of Consumer Concepts

Money	
- quantity	- bigger or more coins = more value
- coin recognition	- penny, sometimes one other
- purpose/use	- "to buy", to count
- source	- little knowledge, little link to jobs
- saving	- little understanding
- price	- not clear that specific amounts needed to purchase
Shopping	
- stores	- know several kinds and their products
- transaction	- both shopkeeper and customer handle money unclear re transfer of ownership and money
- source of goods	- unclear
- banks/banking	- little understanding of function - know it as source of money
Job and Work	
	- recognize term know that parent(s) do it may know generally what parent(s) job is if not conceptually complex (teacher, doctor)
Television Advertising	
- recognition	- based on perceptual cues (shorter, louder)
- purpose	- little knowledge, often egocentric ("so I can go to bathroom")
- techniques used	- can link characters & products they advertise
- intent	- little knowledge, don't understand why ads are shown, some understanding if parental instruction
- truthfulness	- believe
- liking	- attentive and generally like
Overall	
	- disjointed information - isolated learning - no clear concept of the marketplace systems, its "actors" and functioning

CAN SCHOOLS BE OF HELP?

Rationale for Early Childhood Consumer Education

It is difficult to assess the relative impact of schools on the consumer socialization process because of the lack of research in this area. One of the first studies on consumer education [11] for preschool children found that children of this age group are capable of learning and understanding certain basic consumer concepts which can lead to the development of more sophisticated consumer behaviour. The authors of the study argued that children should begin their consumer education as early in their lives as possible.

> The preschool child of age four or older has probably had more marketplace experience than, say, exposure to writing or arithmetic. The child probably regularly goes shopping with a parent, chooses cereal, candy toys or comic books... Should not this informal learning be built upon from the beginning of the child's formal education [11, p. 13]?

A survey conducted by the Western Provincial Task Force on Elementary Consumer Education indicates that elementary school teachers are generally supportive of consumer education programs for children. Responses from the teachers led the Task Force to conclude that "...children should experience consumer education at the earliest possible age in the formal school system to understand their wants and needs, and to assess the claims of sellers" [3, p. 297].

Program Type

Teachers have indicated that, while they support the introduction of consumer education programs, they are concerned about the lack of time available in the curriculum to treat it as a separate subject [8]. Instead, they feel that an integration of consumer concepts into existing language, art, science, health, and arithmetic curricula would be more efficient and successful. This opinion appears to be consistent among most early childhood consumer educators. Consumer education programs introduced in this way would probably be more successful than a separate, structured program because an integration of consumer concepts would require less adjustment and reorganization on the part of the teachers. Activities and resources that can easily be used within the existing curriculum are more likely to be accepted and utilized by educators.

The study be Stampfl, Moschis and Lawton [11] involved the testing of two different classroom procedures in order to determine the most effective classroom approach for consumer education instruction to be used with preschool children.

The first approach used an open framework centered around Piaget's theory of cognitive development. According to this theory, children learn by exploring and interacting with their environment. The development of cognitive abilities occurs through a series of stages. Preschool age children are usually at the preoperational stage of development which suggests they they are incapable of understanding logical relationships.

The second approach involved a formal framework based on Ausubellian principles. Ausubel's learning theory suggests that learning is based on children's ability to understand new information by relating it to previous knowledge [2].

Therefore, children are taught basic general ideas and then exposed to specific learning activities.

Both of the programs were designed to include the following concepts: store; product; need recognition; seeking for product alternatives; price; money to spend; checkout; choice of product; and paying for products. Two post tests were conducted where children's behaviour was observed while they particpated in a shopping game. The data indicated that those children receiving formal structure teaching performed better in both post tests than did children who received open structure teaching. The authors concluded that preschool children are capable of learning the "building block concepts" of consumer education and that the teaching approach used in the classroom will influence the effectiveness of this learning process.

Another factor that appears to be important in consumer education programs for preschool children is the extent to which parents are involved in the program. The research indicates that the more successful classroom programs involve parents in the education process [1, 7].

One study designed to assess the effectiveness of a consumer education program for preschoolers looked at the parent's role in the program and found that interactions between parents and children turned out to be the highest predictor of how well the children could master economic principles [7]. Similarly, results of a study of the effectiveness of a program to teach young children about energy conservation indicated that the most effective results were obtained when the school curriculum is integrated with home activities [1].

In summary, the research indicates that an effective way of introducing a consumer education program for preschool children would be to integrate consumer concepts into the existing curricula (i.e. arts, language, science and health) using a formal, structured framework that in some way encourages parent participation in the learning process.

Program Content

The question of what to include in a consumer education curriculum has drawn varied responses from reserchers and educators. Stampfl, Moschis and Lawton [11] are of the view that certain learning properties act as a foundation for the development of complex consumer behaviours and that this foundation should be established at the preschool level.

They have identified these general concepts which serve as "consumer education building blocks":

1) economic system concepts, including subconcepts related to private property, money, price

2) distribution system concepts, including subconcepts related to retailers, merchandise assortment, branding, ownership, the exchange process and purchase transactions

3) consumer concepts, including subconcepts related to the decision making process, buying motives, search for and evaluation of alternatives, budgeting, purchasing power and the buying process

The criteria used in choosing these three concepts were that the concept must be fundamental in nature in that

1) knowledge of the concept is necessary to understand marketplace functions and interrelationships

2) it is understandable to young consumers

3) it is relevant as a foundation for future consumer learning

Results from their research clearly indicate that preschool children can learn the building blocks of consumer education. Kourilsky's [7] study has focused primarily on the concepts being taught in the program in order to identify those that are understandable and those that are beyond the capabilities of the preschool child. High mastery was obtained in a preschool consumer education program for four concepts: scarcity; decision-making and cost benefit analysis; production; and business organization. She concluded that, although it appears that children learn some concepts better than others, the overall economic knowledge of the preschool pupils increased after participating in the consumer education program.

Another topic that can be introduced in a classroom setting is advertising. Television is an everyday part of most children's lives and as such, it is relatively simple to introduce the topic of advertising into the curriculum. Teaching children to deal with TV commercials may become more critical in the future as more and more researchers are suggesting that this may represent a compromise solution to the debate between advertisers and consumer groups such as ACT who are totally against advertising to children. One researcher states that "...rather than attempting to protect children from television commercials, which of course, would be impossible, efforts should be made to prepare children to handle it" [9, p. 6].

TESTING A PRESCHOOL CONSUMER EDUCATION PROGRAM

The purpose of the present investigation was to complete a thorough evaluation of the consumer education kit entitled "Consumers: Start Young" which was developed by the authors of this report under grant from the Ontario Ministry of Consumer and Commerical Relations. This particular curriculum package was designed for use with the children from 3 to 5 years of age, however, the concepts and activities presented are relevant to children up to 7 years of age.

The kit consists of six components:

a) Decide Yourself (storybook)
b) From Seed to Shelf (storybook)
c) Decide Yourself (children's tape/slide presentation)
d) Decide Yourself (adult's tape/slide presentation)
e) Teachers' Manual
f) Resource Manual

The aim of this curriculum was to help teachers provide opportunities for preschool children to experience and learn selected consumer concepts. Therefore, the main intent of the package was to increase the knowledge and understanding of preschoolers in this area. One of the goals of the present investigation was to assess whether in fact children exposed to these materials did gain knowledge about the concepts presented. Evaluation of the two storybooks and the tape/slide presentation was done with this intent.

A second aspect of the study was to specifically test the strength of the advertising unit of the kit. Based on a needs assessment conducted with educators and parents prior to the development of the kit, the area of advertising was given an emphasis. This was accomplished through the development of a storybook entitled "Decide Yourself" which focuses on advertising. This storybook was also developed into a tape/slide presentation for children. Finally, the advertising unit was elaborated upon in the Teachers' Manual. Evaluating the gains in the knowledge of children based on exposure to this entire advertising unit became another area of the evaluation. This unit required several days' involvement during which the teachers read the storybook, showed the tape/slide and provided activities in large circle, small circle, etc. centering around advertising. In some cases the storybook was also sent home with the parents.

The final aim of this study was to assess the effects of various presentations of similar materials. Children of this age group are very much influenced by what they see and hear. They are exposed to a wide variety of both printed and visual materials. A study of the effects of various methods of presentation on the knowledge acquired by the children was conducted by comparing the storybook and the tape/slide presentation of Decide Yourself. The effects of more in-depth presentation was also assessed by comparing the entire advertising unit of the kit with each of the other two presentations.

Methodology

A questionnaire was developed to assess the knowledge gained by the children based on exposure to the storybook, slide tape, or the entire advertising component of the consumer education kit. The questionnaire was constructed considering the content of the story, key concepts and the objectives outlined in the kit. The same questionnaire was used to test all three levels of program exposure.

Sample

The day care centres participating in the study were contacted in a non-random fashion to provide a range of population. In addition, since the study required centres to rearrange schedules and provide activities, more day care centres were contacted than the final number indicated. Centres were given the choice of reading one of the storybooks, showing the tape/slide presentation or doing the total advertising component. Each centre participated in one aspect of the study. Children were questioned by two researchers on a one-to-one basis. Variables considered in selecting centres included rural/urban location, public and private funding, serving low, middle or upper income groups. The final sample included 19 centres and 222 children. Table 2 provides a breakdown of the characteristics of children involved in the various components of the evaluation.

TABLE 2

Characteristics of the Participating Children

	Sex			Age		Children		Preschool
	Male	Female	Total	2-4	5-6	Pre-test	Post-test	Centres
Decide Yourself (Book)	27	45	72	29	43	40	64	6
Decide Yourself (Tape/Slide)	48	58	106	61	45	50	97	9
Advertising Unit	20	24	44	30	14	26	41	4
TOTAL	95	127	222	120	102	116	202	19

Procedure

Initial contacts with day care centres were made by telephone. In some cases this was followed by a visit, to introduce the Consumer: Start Young program and to set up dates for the actual interviews.

Pretests were generally conducted in rooms separate from the class activity. For the pretest condition, researchers questioned on a one-to-one basis, half the children that would be involved in the study. The children for the pretest were chosen from the total sample by teachers, the researchers, or the children themselves.

The story or tape/slide presentation was carried out generally two days later with the researchers present. The atmosphere under which the material was used was noted at this time. Posttest questionnaires were then completed with all of the children in the study. Interview conditions were similar to those conditions of the pretest. Kit evaluations were then given to teachers.

In the case of centres participating in presenting entire advertising unit, the researchers were not