

annual income, and that total annual expenditures are a better predictor for permanent income than annual income (Prais & Houthakker, 1971). If an expenditure category is again derived as the residual between total expenditures and all expenditures but the one of interest, than the error with which expenditures were measured is carried over into expenditures for clothing. This, in turn, implies that the errors in the explanatory and the dependent variable are no longer independent, which again may cause bias. Prais and Houthakker argue that "so long as the item of expenditure is a small proportion of the budget, it is not expected that serious bias will result, provided, of course, that a correction is made for the elasticity of total expenditures with respect to income" (Prais & Houthakker, 1971).

To my knowledge, there is no rule-of-thumb which indicates the degree of truncation in a sample that warrants the use of TOBIT. Since consumption is virtually always truncated at zero one could, however, argue that using TOBIT is more appropriate than OLS for all demand analysis. Given that between 15 and 23 per cent of quarterly clothing expenditures in this study are zero, a comparison of OLS and TOBIT estimates is likely to provide valuable information about the robustness of the results.

Finally, I would like to comment on the interpretation of some of the results. The author concludes that "total expenditures as a proxy for the family's permanent, long term income appears to be the more determinative variable with respect to explaining expenditures for clothing." Does this mean that the influence of permanent long term income is greater than the impact of any other explanatory variable in the model? I do not agree with this conclusion. According to Table 2, mother's education, her age and race and the number of children in various age-sex categories have a far greater influence on clothing expenditures than total expenditures/income. If I read the numbers correctly, a ceteris paribus increase of total expenditures by one dollar results in an increase in clothing expenditures of between 0.2 and 0.5 cents. Or put differently, if income increased by \$1,000 per year, clothing expenditures would go up by between \$1.80 and \$4.60 per quarter. Based on these results, I do not think it is justified to draw the conclusion that "the marginal propensities to consume of clothing for the female-headed households indicate that an increase in total expenditures has a proportionately larger impact on the female-headed households than on the two-parent; as total expenditures (permanent income) increases, a larger proportion of that increase goes to expenditures on clothing in the female-headed households than in the two-parent." Even if the marginal propensities to consume are highly statistically significant, for all practical purposes, these results do not indicate a difference in the marginal propensity to consume clothing between two-parent households and single female-headed households.

Finding a model that fully explains the complexity of human behavior is a very difficult task. Terrence O'Brien's and Mary Pritchard's goal was to develop a model that helps us better understand the decision to eat out than previous models suggested in the literature. I would like to comment on three aspects of their paper: (1) the proposed model, (2) the specification of variables, and (3) the estimation technique.

The Model: Maybe it is my training in economics that makes me want to know the basis of a theoretical model. It would have helped the reader see differences between the authors' and other models in the literature if they had explained their reasons for including certain variables in the model, and mentioned their hypotheses concerning relationships between explanatory variables.

I agree with the authors that demographic variables alone cannot help us completely understand the decision to eat out, but that, in addition, we need to account for other factors such as psychological ones. Unfortunately, I cannot detect any psychological components in their model. Almost all of the explanatory variables can be classified as demographic ones - and I would have included even more of them, e.g. a person's sex. If a household consists of a single person or is a single-headed household, I hypothesize that, controlling for other factors, expenditures for food away from home differ according to gender.

Furthermore, I would have liked to know why the authors used only marital status and age as explanations of hours worked? Why were a person's wage rate, their unearned income, their education, labor market experience, their spouse's income etc. not included in the model? Also, it is not clear to me why it is necessary to predict household size. In the long-run, the size of a household is clearly an endogenous variable, but so is marital status - which is used as an exogenous variable for household size in this model.

The Specification of Variables: My main objections with respect to the specification of variables has to do with the way they were coded. Several variables were not used as provided in the data set, but were turned into dummy variables. In doing this the authors, for no apparent reason, did not use valuable information available to them. The number and ages of children, for example, is likely to better capture their influence on a family's preferences for eating out than whether a child lives in a consumer unit, which is how the 'children' variable was coded. Previous research seems to indicate that hours worked in the labor market is a factor in the decision on expenditures for food away from home. I suspect that in a two-parent family it may make a difference how many hours

each partner works. By using the average number of hours worked per couple instead of each partner's work hours, possibly useful information is lost as well.

The Estimation Technique: Let me first point out that the authors addressed the potential problem of sample selectivity, which in this study may occur because of seven per cent incomplete income reporters in the sample.

What is not clear from the paper is how the parameter estimates were obtained. If the parameters were estimated equation by equation via OLS, it has to be kept in mind that "the method of least-squares may not be applied to estimate a single equation embedded in a system of simultaneous equations if one or more of the explanatory variables are correlated with the disturbance term in that equation" - a problem earlier referred to as simultaneous equations bias (Gujarati, 1978). The resulting parameter estimates will not only be biased, but also inconsistent. Use of OLS is furthermore not appropriate if the dependent variable is dichotomous as in the case of Y_3 which, as earlier mentioned, was coded as a dummy variable.

The fit of the proposed model was evaluated with the statistic, M , which I am not very happy with. Given the way M is constructed, a better fit of a model can always be achieved by including more equations into a model. If, for example, R^2 is 0.5 for each equation, $M=0.5$ if a model consists of one equation, $M=0.75$ if two equations are in the model, and $M=0.9375$ if the model consists of four equations. The authors suggest to use a different estimation technique, such as LISREL, to evaluate the fit of their hypothesized model. I encourage them strongly to do that.

GARNER

Thesia Garner analyzed how equally distributed material wealth is in the United States. Instead of using income, as is typically done, the author based her computations on total consumer expenditures and ten expenditure categories. The measure of inequality used in this study is the Gini coefficient.

The author has done a very complete job in her analysis: she computed an overall Gini coefficient as well as Gini coefficients for different subgroups of the population. In addition, she performed a sensitivity analysis to assess whether the computed Gini coefficients differ over time and with the number of interviews per consumer unit per year.

The distribution of material wealth among the U.S. population was further assessed by decomposing total expenditures into ten expenditure categories and by determining for each of these categories the Gini correlation, the relative Gini coefficient, and a measure that allows to assess how changes in an expenditure category will affect overall inequality. The different measures of inequality are obviously a lot more informative than one overall measure and

should, therefore, be especially useful for targeting public policy efforts at subgroups of the population.

Since no research is perfect, I still have a couple objections and a concern. Breaking total expenditures into a reasonable number of smaller parts without creating ambiguous subcategories might be difficult to do. Since the findings of this research may have far-reaching implications, it is, however, necessary to be very aware of the contents of the subcategories. Shelter, for example, includes mortgage payments as well as expenditures for rent. That means that five hundred dollars in rent cannot be distinguished from five hundred dollars in house payments, which clearly indicates a difference in material well-being between two consumer units. This expenditure category is, therefore, potentially misleading. The same criticism holds for the 'other' category.

A comparison of the income-based Gini coefficients and the expenditure-based coefficients reported in this paper shows a difference of 0.11. Given that Gini coefficients can theoretically range from zero to one, a Gini of 0.33 is substantially lower than a Gini of 0.44, and not as the author concludes "slightly lower".

My main comment on this paper has to do with its implications. What does it mean that the expenditure-based Gini coefficients are lower than the income-based ones? Does this imply that there is less inequality than previously thought? I would hate to have this conclusion drawn, mainly because the expenditure-based approach, as presented here, has one important flaw: it does not include a major component of consumers' well-being - their savings and other financial assets or debts. Not accounting for assets or debts, in my opinion, does not describe fully how equally distributed material wealth is in the United States and may result in misleading conclusions. This is exactly what was done in a recent Wall Street Journal article. Gallaway and Vedder used the Consumer Expenditure Survey to show that "being down and out in America may not be all that bad. (...) Based on current consumption per person, life at the bottom of the American money-income distribution is only modestly less attractive than at the middle or about half as attractive as at the top. Even this comparison overlooks an important dimension of economic well-being, leisure. The data indicate that those at the bottom of the income distribution have more leisure time than those at the middle or at the top" (Gallaway & Vedder, 1989).

Of course, it will never be possible to prevent anybody from drawing conclusions unintended by the researcher, and this cannot be a reason for not undertaking research. At the same time, a researcher should make it as difficult as possible to distort results by providing as complete a picture of reality as possible.

REFERENCES

Galloway, L. & R. Vedder (1989). When Spending, Rich and Poor Draw Closer. Wall Street Journal, January 12, 1989.

Gujarati, D. (1978). Basic Econometrics. New York, McGraw-Hill.

Prais S.J. & H.S. Houthakker (1971). The Analysis of Family Budgets. Cambridge, The University Press.

CHILD SUPPORT GUIDELINES: A FEDERAL MANDATE FOR STATE CHANGE

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In 1984 states were required to set child support award guidelines. States adopted models based on (1) sharing cost of raising a child or (2) dividing parents income. Both marginal and non-marginal approaches are used to determine minimum support costs, the latter yielding higher amounts. Models based solely on shares of parents income yield little support in low income cases. Guidelines are helpful to the extent that predictability and fairness are increased but limiting when used as ceiling amounts.

Lack of financial support from non custodial parents has become a national concern. In 1987 the Bureau of the Census reported that over a quarter of eligible mothers with two children from an absent father were not awarded child support payments. And, when mothers were awarded child support payments, the mean amount of income received was only 2,597 dollars per year (Bureau of the Census, No. 152, 1987). Considering that in 1987 the average estimated cost of raising a 10-11 year old child was 5,811 dollars per year (United States Department of Agriculture, No. 2, 1988), these figures clearly indicate inadequate child support awards.

Many female single parent households lack adequate financial resources with which to operate self sufficiently. Consequently, without adequate support from the absent father many female single parent households must rely on welfare. As welfare rolls and costs have grown, policy makers at the national level have introduced initiatives aimed at both reducing welfare costs as well as improving the economic status of female single parent households. Such legislation was first enacted in 1975 when Congress established the Child Support Enforcement Program as Part D of Title IV of the Social Security Act. In general, Title IV legislation was aimed at beefing up the establishment of child support obligations as well as enforcing such obligations. The IV-D Program required potential welfare recipients to register with their local/state Child Support Enforcement Agencies before qualifying for welfare eligibility. The intent of the registration rule was to 1) aid in establishing the paternity of minor children, and 2) aid in locating absent parents (Public Law 93-647, 1975).

Although the aim of the IV-D Program was to improve the child support system, testimony by various grass roots organizations before the Senate Finance Committee in 1983 found an astonishing lack of order and predictability in how the legal system dealt with child support obligations. Among those grass roots organizations were For Our Children Unpaid Support,

Organization For The Enforcement of Child Support, the National Law Center, and Kids In Need Deserve Equal Rights. Testimony revealed 1) a lack of uniformity in the establishment of support obligations, 2) variability in state laws on entitlements, 3) lack of clarity in court interpretation of a child's basic needs and rights, and 4) failure of the child support system (Senate Committee on Finance, United States Senate 98th Congress, 1st Session 1983).

To strengthen the IV-D Program, the Social Security Act was further amended in 1984. New provisions were 1) the deduction of wages and other income of absent parents and 2) the deduction of past due child support from state income tax refunds. The amendments also required states to establish state commissions to develop guidelines for child support awards within the state (Public Law 98-378, 1984).

In some states after the assessment of the old guidelines, the legislatures passed new guidelines. In other states the Commissions generated guidelines to help clarify existing legislative criteria.

CHILD SUPPORT GUIDELINES

About 32 states and territories have complied with the Federal mandate to adopt child support guidelines (Moss, 1987). These states have adopted either a cost sharing or an income sharing model as a means of achieving fair and adequate child support awards (Table 1). Either a cost sharing or an income sharing model allows courts to deviate from the guidelines when their application would promote inequities. Both the cost sharing and income sharing models can yield monetary guidelines. Although the differences in the cost sharing and income sharing models are subtle, the results can be very different.

TABLE 1
Child Support Models

<u>State</u>	<u>Model</u>
Oregon	Cost Sharing
Texas	Income Sharing
Wisconsin	Income Sharing
Ohio	Income Sharing
Minnesota	Income Sharing
Washington	Cost Sharing
Kansas	Income Sharing
Arizona	Income Sharing

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Cost Sharing Model

The cost sharing model uses the proportion of gross family income contributed by the non-custodial parent and the cost of raising a child to determine the share for the non-custodial parent. Courts have traditionally defined costs as 1) basic necessities needed to meet minimum welfare standards, and 2) the family's relative standard of living (Johnson, 1985). Obvious difficulties with these methods are the absence of guidelines for trial courts to use in ascertaining reasonable living expenses and whether the standard of living should be based upon the mother's or father's standard of living (Ciardella, 1986).

Once the cost of raising a child has been determined, the cost is then apportioned between parents on the basis of income. A ratio is computed by comparing one parent's gross income, net income, or net disposable income to the parent's combined income. The ratio is then applied to the child's total needs to determine the parent's obligation (Ciardella, 1986). For example, if the custodial parent's annual gross income is \$10,000 and the non-custodial parent's annual gross income is \$20,000, the combined income would be \$30,000. The custodial parent's income constitutes one-third of the combined income (10,000/30,000), thus requiring the custodial parent to contribute one-third of the child's financial needs. If the child's annual needs are \$5,811, the custodial parent would be required to contribute one-third of this amount, or \$1,918. The non-custodial parent would be responsible for the balance, or \$3,893.

There has been some concern that using the parents' disposable income could be problematic in that both parties could inflate their reasonable living expenses, which could decrease net disposable income. With a decrease in net disposable income there would be less income available for child support (Ciardella, 1986).

Income Sharing Model

The income sharing model matches the parents' combined income with a child support table. The child support table lists a basic amount of support for the number of children involved. For example, if the parents' combined gross income were \$30,000 and if there were one minor child in the home, the basic child support obligation taken from the state of Ohio's child support table would be \$4,560. The total child support obligation for each parent is calculated by taking the figure for the basic obligation from the child support table, adding any special allowances such as child care costs and then multiplying this figure by the parents' percentage of total income. For instance, in this example, the custodial parent's annual gross income were \$10,000, that figure would represent 33 percent of total income (10,000/30,000). If the non-custodial parent's annual gross income were \$20,000, that figure represents 67 percent of total income (20,000/30,000). Based on these percentages the custodial parent's obligation

would be \$1,505 (4,560 X .33). The non-custodial parent's obligation would be \$3,010 (4,560 X .67). The non-custodial parent would be required to pay \$3,010 directly to the custodial parent for child support. The custodial parent would be assumed to spend \$1,505 directly on the child.

Application of the income sharing model has varied among states. For example, parents' combined gross income was used in Kansas; the state of Arizona used the parents' combined adjusted gross income in determining child support obligations. The choice of which income figure--gross versus adjusted gross--raises a fairness question. Using the parent's gross income could lead to unfair obligations in that tax rates are not taken into consideration. Since variations exist in the marginal tax rate across income categories, the share of disposable income available to parents can differ widely from their share of gross income. Therefore, in using the parents' gross income in establishing child support obligations, such obligations are established with income not available to the parents. On the other hand, using the parents' adjusted gross income allows for differentiation in income due to the tax rate. Consequently, it can be argued that the adjusted gross income scheme is fair to both parents in that obligations are based upon income that is actually available to the parents.

Special allowances also vary by state. For example, the state of Kansas makes allowances for addition and proration of health and dental insurance; the state of Arizona allows for educational expenses and provides for expense adjustments for older children. Both the state of Kansas and Arizona allow for work related child care costs.

IMPLICATIONS OF DIFFERENCES BETWEEN COSTS AND INCOME SHARING MODELS

The cost sharing model assumes some minimum cost needed to support a child. Once the minimum cost is established, policy makers then build up from the minimum cost to some higher cost depending upon the parents' income. Children from parents with high income levels can be assumed to have a higher standard of living than those children from lower income levels. Consequently, to maintain the expected standard of living for children from higher income levels, policy makers may establish a higher minimum cost for these children. In establishing some minimum cost needed to support a child, policy makers have 1) utilized results from Espenshade, 2) utilized information from the United States Department of Agriculture (USDA), and 3) relied upon the welfare program Aid to Families with Dependent Children (AFDC) benefit levels per child.

In using results from Espenshade, policy makers have taken a marginal approach to determine the cost needed to support a child. In taking a marginal approach, policy makers first determine how much money parents spend on themselves and then how much parents spend on their first child. Then the difference between the two amounts is

calculated, and that figure is the amount of money considered necessary to support the child. Policy makers then proceed in a similar manner with each additional child, resulting in a smaller amount of parents' income needed to support each additional child (Espenshade, 1984).

In making application of data from the USDA, policy makers take a non-marginal approach to determine the cost needed to support a child. In a non-marginal approach parents' total expenditures on children are divided by the total number of family members to produce a per child average. Family expenditures are allocated in proportion to the number of children. By allocating expenditures proportional to the number of children, expenditures using a non-marginal approach would be higher than expenditures using a marginal approach (Espenshade, 1984). Consequently, policy makers utilizing a non-marginal approach would have a higher minimum of support needed for a child than those policy makers utilizing a marginal approach.

In utilizing an income sharing model, policy makers first look at the parents' income. A determination is then made as to what proportion of the parents' income is reasonable to spend on children. In determining a reasonable proportion of income to spend on children, policy makers have turned to expenditure studies and budget studies.

In contrast to the cost sharing model, an income sharing model does not acknowledge some minimum necessary support for a child, but instead acknowledges the fact that the child is entitled to some proportion of the parents' income, however small. Consequently, depending upon the parents' income level children may be awarded little child support.

USAGE OF CHILD SUPPORT GUIDELINES

Although child support guidelines reflect legislators' belief that all children should receive some minimum support, they fail to take account of other relevant factors which may lead to a higher support award. As such, it has been suggested that child support guidelines be used as floors, not ceilings. Not surprisingly, it has been reported that in many respects child support guidelines have become the primary if not the sole determinant of child support obligations (Johnson, 1985). Consequently, child support guidelines can be assumed to be ceilings. On the positive side, child support guidelines are reported to have provided some predictability to the child support system.

REFERENCES

- Arizona Bar Journal (1988). "Arizona Child Support Guidelines: Adopted by the Arizona Supreme Court," (December/January): 14-19.
- Ciardella, Margaret C. (1986). "Plott v. Plott: Use of a Formula to Determine Parental Child Support Obligations: A Continuation of Inconsistent and Inequitable Decisions?," North Carolina Law Review. 64: 1378-1394.
- Elrod, Linda H. (1987). "Kansas Child Support Guidelines," The Journal of the Kansas Bar Association. 56 (November/December): 23-25.
- Espenshade, Thomas J. (1984). Investing in Children: New Estimates of Parental Expenditures. Washington, D.C.: The Urban Institute Press.
- Johnson, Wanda. (1985). "Do Minnesota Child Support Guidelines Support Children," Law and Inequality. 3: 343-371.
- Moss, Debra C. (1987). "New Child-Support Guidelines: Mandated Rules Could Mean Higher Awards," American Bar Association Journal. (December): 32.
- Public Law 98-378 (1984). United States Statutes at Large. 98: 1305-1330.
- Public Law 93-647 (1975). United States Statutes at Large. 88: 2351-2360.
- United States Bureau of the Census (1987). "Child Support and Alimony: 1985 (Advance Report)," Current Population Reports, (No. 152): 1-2.
- United States Congress (1985). Senate. Committee on Finance. Hearings before the Committee on Finance. 99th Congress, 1st Session.
- United States Department of Agriculture (1988). "Update Estimates of the Cost of Raising a Child," Family Economic Review. (No. 2): 36-37.

UTAH'S CHILD SUPPORT GUIDELINES: PUBLIC POLICY IN THE MAKING

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The work of the Utah Task Force on Child Support Guidelines focused on children's needs, parents' ability to pay, modification procedures, and effect of shared custody/extended visitation on awards. Recommendations, based on income shares model and addressing issues of income definition, subsequent families, alimony, and income extremes, were overridden in response to political pressure. Administrative, rather than Task Force, guidelines were adopted.

One of the key provisions of the Child Support Enforcement Amendments of 1984 was a requirement that each state must establish numeric guidelines for determining the amount of child support awards by October 1, 1987 (P.L. 98-378, 1984). In response to this federal mandate, Utah's legislature authorized the state's Judicial Council to create an advisory task force to examine present procedures for establishing child support awards within the state and to make recommendations for the improvement and standardization of existing child support guidelines for use in Utah's courts and agencies involved in setting child support.

Over the previous eight years, Utah's Office of Recovery Services, the state's Title IV-D agency, had developed a child support schedule for its internal use. Only two variables were taken into account in setting award levels using this schedule: the noncustodian's income and the number of children to be supported. This chart, in modified form, was used extensively by judges in the two of the state's most populous counties, but was not uniformly applied in other judicial districts. In most courts, judges considered a statutory listing of factors (e.g., (1) the standard of living and situation of the parties; (2) relative wealth and income of the parties; (3) the needs of the child; (4) the ability of the obligor to earn; (5) the obligor's responsibility for the support of others; (6) the obligee's earning capacity; and (7) the age of the parties) in determining the appropriate amount of support (Utah Ann. Code, 1986-87). This approach was rejected in implementing regulations to the 1984 Amendments since it did not result in a specific numerical amount (45 CFR 302.56(c), 1986).

In April, 1987, the Judicial Council, on the recommendation of the Board of District Judges, appointed 17 individuals to serve on Utah's Task Force on Child Support Guidelines. The members came from various professional areas and included judges, lawyers, domestic court commissioners, a member from both houses of the legislature, two

family economists, a law professor, representatives of public interest groups such as the Legal Aid Society and Legal Services, advocacy groups such as Utah Children and Utah Issues and the director of the Office of Recovery Services. Seven members were women, and some members were either custodial or noncustodial parents. Our chair was Judith M. Billings, the only woman judge on the state Court of Appeals.

We began work in May (1987) with a review of current research on children's impoverishment as a result of divorce. Each Task Force member was given a 3 1/2-inch binder of material to digest before the June meeting.

Members of the Task Force read voluminously, including the writings of Carol Bruch, Philip Eden, Sally Golfarb, and Lenore Weitzman. We examined a variety of guidelines from other states including cost-sharing, income shares, Wisconsin's flat percentage method, the Delaware/Melson formula, and the Cassetty income equalization model. Some of the material was highly technical, dealing with economic analyses of national expenditure data, while other material focused on specific issues such as nontraditional custody and visitation arrangements, updating orders and methods of apportioning medical and child care expenses. The reading material was extremely helpful in shaping debate within the Task Force. To extend our education on the issues, Brenda Wagenknecht-Ivy from the Institute of Court Management in Denver spent an afternoon with us reviewing pending federal legislation on child support, economic data on the cost of raising children, three guideline models and factors to consider when determining a guideline.

In mid-summer, a call for public testimony was issued and we also invited testimony from expert witnesses which included district and juvenile court judges, family law attorneys, administrative law justices from Social Services, and the chair of Utah's Task Force on Gender and Justice. The Family Law Section of the Utah Bar Association undertook the task of composing and administering a paper-and-pencil survey of family law attorneys and District Court Judges who hadn't yet testified before the Task Force. They reported that most practitioners believed current child support awards in Utah were too low when measured against the actual costs of child rearing. Twenty of the state's 29 District Judges said the state should have uniform child support guidelines based on current economic data.

The development of any guideline requires value judgments and a delicate balancing of competing interests. In an effort to develop an objective basis for our policy decisions, the Task Force

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formulated a set of principles (Appendix) which were extremely useful in resolving conflicts over specific issues and policy decisions as guideline development proceeded.

To facilitate deliberations, the Task Force was divided into four subcommittees to study and report back to the assembled body. These subcommittees were to examine data on the needs of children, ability of parents to pay (including a definition of income), modification procedures, and the effect of shared custody and extended visitation on child support awards. By the October deadline, we were meeting weekly, but had no clearly articulated guideline. We received a time extension from the federal government because the Office of Recovery Services advisory schedule was in place and being used by judges in the Second District.

As the new year began, we had either defined our issues or picked our targets, depending upon which philosophy you ascribed to. Each subcommittee had reported the results of their work and most had compiled a list of questions that the Task Force needed to address. Judge Billings developed a long list of these issues, which contained all of the conceivable subtopics for guidelines--how to consider various sources of income, how to treat subsequent families, how to deal with alimony, how to approach especially high and low-income cases. This list served as an agenda for the group's continuing deliberations. We went through three rounds of voting "yes," "no," or "needs further study" on each issue before beginning to draft a policy statement.

In February we selected a guideline methodology. The cost sharing approach was rejected by the Task Force because (1) it required detailed household level data on expenditures, and (2) this method has the potential to promote conflict between parents over what constitutes "necessary" child-related expenditures. Income equalization was also rejected because it was believed that this method built maintenance (alimony) into the child support award. The Task Force selected the income shares model because it included the incomes of both parents and child support award levels were based on the relative income available to each parent. We elected to base Utah's child support guidelines on the work of Kansas economist William Terrell because we preferred his analyses of current economic data and felt this formula best reflected the objectives we had adopted.

Following the formulation and dissemination of our proposed guidelines and worksheets, the Task Force conducted state-wide public hearings. Task Force members also presented the guidelines and received comment from three urban county bar associations, the Utah State Bar Commission, and the Women Lawyers of Utah. We expected the guidelines would be controversial. We hadn't anticipated the outburst of bitter, angry testimony and letters that we received. Many Task Force members were threatened with physical

harassment, and at one point, we were guarded by armed Highway Patrol Officers whenever we met. Child support schedules in other states weren't always put before the public as they were in Utah--now we knew why!

Under intense political pressure, we revised the guidelines, making them applicable only to divorces occurring after the guidelines were adopted, scaling down the payment amounts in the middle- and upper-level income categories to compensate for the child care tax credit and dependency exemption allowed custodial parents, and added language which allowed an obligor's children from subsequent marriages to be considered in determining if the award should be increased in modification proceedings. Children from an obligor's subsequent marriage would not be considered to lower an existing child support award. These were very emotionally charged issues and provoked heated debate among Task Force members. We were torn by concern that the original guidelines would not be adopted by a conservative Judicial Council and a threatened bolt by Task Force members solicitous of wealthy obligors. These revisions put the schedule payments so low, that of the 42 states with existing guidelines, only five have amounts lower than Utah's, although the guidelines would raise existing award levels by 15 percent. Our revised recommendations went to the Judicial Council in June and were adopted unanimously.

However, we'd attracted the interest of a hostile, vocal, politically active group of obligors and second wives--Utah Parents for Children's Rights. They began writing and calling their representatives in the state legislature who, in turn, asked the Judicial Council not to adopt the new guidelines until the legislature had a chance to study them. The Judicial Council rejected their request, which infuriated some members of the legislature. They requested the Interim Judiciary Committee to hold public hearings on the guidelines before they went into effect on October 1 (1988).

In a compromise gesture, the Judicial Council made the guidelines advisory in nature, meaning judges were under no obligation to use them. Making the guidelines advisory did not satisfy Utah Parents members who were testifying that "custody should be awarded to the parent most economically able to care for the child." They found sympathetic ears among legislators and the child support issue began appearing on hearing agendas. Testimony expanded into the areas of custody awards and visitation enforcement before the October recess.

In November, the Judicial Council/Task Force guidelines went into effect and another player entered the scene. The Family Support Act of 1988, passed by Congress in October mandated that all states must have presumptive guidelines in place by October 1, 1989 (H.R. 1720, 1988). Guidelines implemented as a rebuttable presumption means the judge in a paternity or divorce hearing would be obligated to follow the guide-

lines as given unless s/he could demonstrate in writing the reasons why application of the guidelines in a specific case would be inequitable or unjust. In an unscheduled appearance before the Interim Judiciary Committee, the director of Utah's Office of Recovery Services testified that the state would lose \$7.5 million in federal funding to collect delinquent child-support payments if the state was not in compliance by fall. Instead of making the existing guidelines presumptive, the Committee voted to have the Office of Recovery Services (ORS) draft new guidelines.

The new ORS guidelines, drafted over a two-week period through a process of decidedly non-public meetings, were presented to a newly elected Judiciary Committee in December (McGee, 1989). Critics termed them "an arbitrary and politically motivated reduction of the Judicial Council's figures, written from the point of view of how much the non-custodial parent will pay rather than the standard of living of the child." House Bill 203, which gave ORS authority to establish and evaluate statewide child support guidelines, was introduced in January. Under the terms of the bill, the award levels contained in the accompanying schedule would be presumed to be the correct amount of child support unless a written finding made under criteria established in the guidelines, says application of the guidelines in a particular case would be unjust or inappropriate.

The Chief Justice of the Supreme Court, who serves as chair of the Judicial Council, in an extremely conciliatory letter, asked the legislature to make the Judicial Council/Task Force guidelines presumptive until the legislature drafted and enacted new guidelines in the 1990 session. Utah Children, a non-profit children's advocacy group, spearheaded a lobbying effort to kill or modify the ORS guidelines--to no avail. The proposed law was never heard in a House or Senate Committee. In the hours just before adjournment, HB 203 passed the Senate 25-1, and the House 65-0. Utah divorces prior to July, 1989, will have child support set by the Judicial Council's schedule; and by the ORS guidelines thereafter.

Based upon the economic methodology developed by Williams, the new guidelines call for equal sharing of extraordinary medical expenses and child care for employed custodial parents, despite the fact that Utah women have only 53 percent of the earning power of Utah men. The new guidelines provide a deduction for previously assessed child support whether or not the child support obligation has been paid, and specifies no adjustment by children's ages. The new guidelines also provide for 50 percent reduction of support when the child spends more than 25 days in a 30-day period with the non-custodial parent, even though fixed expenses of the custodial parent do not decrease by more than 10-20 percent during periods of extended visitation (Getman, 1987; H.B. 203, 1989).

One feature of the new law is the creation of an Advisory Committee, named by the Governor. This committee is charged with the responsibility for reviewing the guidelines and making recommendations back to the legislature in a timely and specific fashion. Data from every Utah divorce decree between July and October will be tabulated by an independent research institute. Hopefully, needed modifications of the current law will be made in the best economic interest of Utah's children.

APPENDIX

GUIDELINE OBJECTIVES

1. To provide as simple as possible a uniform child support guideline to facilitate understanding by the parties and efficient administration by the courts.
2. To provide a uniform, consistent and objective method for determining child support obligations to enable parents and attorneys to estimate a child support award.
3. To ensure that inadequate child support doesn't contribute to the number of children living in poverty.
4. To protect children as much as possible from the adverse economic consequences of family breakup or non-formation.
5. To encourage joint parental responsibility by allocating support in proportion to each parent's income. To the extent either parent enjoys a higher standard of living, the child is entitled to share in that higher standard of living.
6. To allow parents to rely on the amount of the child support obligation so that both parents can plan other parts of their lives.
7. To provide a standard for reviewing the adequacy of existing child support orders.
8. To provide a method for periodic updating of child support orders.
9. To apply the uniform child support guideline without regard for the gender of the custodial parent.
10. To minimize negative effects on the major life style decisions of both parents. The guideline should avoid creating economic disincentives for remarriage or labor force participation.
11. To ensure Utah is in conformity with federal law and therefore qualifies for continued federal funding for state and federal welfare programs.

REFERENCES

Getman, K.A. (1987). A critique of the effect of non-traditional visitation and custody arrangements on child support awards under current guidelines and formulas. In Essentials of child support guidelines development: Economic issues and policy considerations (pp. 127-142). Washington, DC: Women's Legal Defense Fund.

McGee, R. (1989). The tilted playground. Unpublished manuscript.

Pub. L. No. 98-378, 98 Stat. 1305 (1984).

45 C.F.R. 302.56(c) (1986).

Utah Ann. Code 30-3-5 (1986-87 Supp.).

H.R. 1720, 100th Cong., 2nd Sess. (1988).

H.B. 203, Utah State Legislature, 48th Sess. (1989).

HOW HAVE CHILD SUPPORT GUIDELINES AFFECTED AWARDS? AN ANALYSIS OF THE EVIDENCE

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Court records data from four Ohio counties were used to compare child support awards before and after 1987 federally mandated guidelines. Guidelines increased probability of child support award and predictability of amount. Although award amount did not change between 1985 and 1987, the probability of receipt increased significantly and the standard deviation and variance of the award variable decreased. The influence of procedural decisions on award declined; the only significant post-guideline variable was number of children.

Award and amount of child support is a national concern due to lack of financial support from absent parents and the resulting costs to the social welfare system. Concern prompted a 1984 federal mandate for the establishment of guidelines for child support award amounts within each state. The response in Ohio was a set of recommendations designed to provide for more uniformity in child support awards. The purpose of this paper is to document the effects, with respect to equity and predictability, of the 1987 Ohio child support guidelines. Data from court records were used to compare actual amounts and variation in amount of child support awards before and after the 1987 change.

A brief review of child support awards shows that amount and incidence of support orders has increased over time. However, the likelihood of a small award amount remains. Analysis of support awards using Current Population Survey data (Beller & Graham, 1986; Robins & Dickinson, 1985) revealed that 72.6 percent of the divorced or currently separated women in the sample received a child support award. Probability of award was related to the characteristics of the legal system and to a set of sociodemographic variables reflecting needs of the mother, ability and desire of the father to pay, and the ability of both parents to use the legal system.

Studies, each in a particular jurisdiction, show that probability of award has improved over time, but the value of payments in real dollars has declined. The proportion of fathers' incomes paid in child support decreased between 1965 and 1978 and was lower for higher income fathers (Permanent Commission on Status of Women, 1979). Further, variability in awards has been a concern. Although White and Stone (1976) found judges in Orange County, Florida, to have a high degree of individual predictability in making awards, variability among judges in using statutory determinants of awards was high.

Variation among judges was also relevant in a study by Yee (1979). Other factors increasing variation in award amounts were income and representation by an attorney.

In addition to setting minimum amounts for awards, a primary objective of the Ohio guidelines was to increase uniformity in awards. The guidelines set dollar amounts based on legislated considerations for child support in Ohio: financial resources of the child, financial resources and needs of the parents, standard of living the child would have enjoyed, physical/emotional needs of the child, and child's educational needs (Ohio Revised Code, 1987). Before the 1987 dollar figures were established, these considerations were the sole guideposts for judges.

Amounts established in the guideline tables were to be used as a starting point in setting support amounts. Deviations below the minimum amounts in each income category require documentation. Dollar amounts are set for cases with gross income between \$500-\$10000 per month. Cases with less than the minimum income are reviewed individually and amounts between \$20-\$50 monthly are usually awarded; cases at the upper end of the income scale are also individually determined. Income is established after subtracting amounts for previous child support obligations and premiums for health insurance coverage for the dependent children. Child care costs are added to the support obligation; other expenses (educational, medical) are left to settlement within the court order (The Supreme Court of Ohio, 1987).

SAMPLE

Data on divorces filed in 1985 and in the first six months after the guidelines went into effect (October 1987) were obtained from court records in one urban county and three rural counties in Ohio. A random sample of 10 percent of the 1985 cases in the urban county, 50 percent of the 1985 rural cases, 20 percent of 1987 urban cases, and all 1987 rural cases was drawn. For 1985 the resulting sample size was 554 cases with children under eighteen. For 1987, the number of cases with children under eighteen was 301. Descriptions of the sample are presented in Table 1.

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TABLE 1 Sample Description

Explanatory Variables	1985	1987-88
Dissolution	45.7%	37.2%
Wife was plaintiff	87.6%	78.7%
Number of wife's motions	.75	.39
Number of husband's motions	1.87	.80
Wife contested	8.8%	3.7%
Husband contested	16.7%	13.0%
Wife only had attorney	43.8%	34.0%
Both had attorney	32.6%	46.5%
Years married	9.56	9.66
Number of children	1.76	1.62
Rural	40.5%	21.6%
Shared custody	8.8%	9.3%
Father pays support	78.8%	78.7%
Father pays designated expenses	79.3%	100%
Number of properties	.68	.89
Child support in 1987\$	\$48.24	\$49.75

Variables

The variables in these analyses were selected to focus on four aspects of a divorce settlement involving minor children. The first is the need of the children for support. Expense of rearing a child varies with age of child, i.e., the older the child, the greater the expense, and number of children in the family. The proxy for age of children was years of marriage. Years of marriage was defined as the difference between date of divorce decree and date of marriage. Cases with a missing marriage date were rare and eliminated from the analysis. The longer the marriage the older the children could be, and probably are. Although long marriages could have only young children, visual perusal of the cases indicated that was unusual, if not nonexistent, in this sample. Number of children also affects expense because there are economies of size in rearing children, i.e. the greater the number of children the smaller the percapita expense. Children can share toys and rooms; they can wear the clothes of older siblings. Number of children was measured as actual number of minor

children of that marriage, not number of children at home.

Shared custody and payment of designated expenses in addition to cash can decrease the amount of cash needed. Shared custody was defined as either joint parental custody of all children or split custody in which each parent has custody of at least one child. Shared custody is unusual in Ohio. When parents communicate well enough to share custody of their children there is more contact between parents and between parents and children. The probability of payment of children's expenses out of nonsupport monies rises, and the amount of support needed, ceteris paribus, declines. The same argument can be made for designated expenses. If designated expenses are paid, then, when incurred, the expenses do not come out of support monies and less support provides a comparable level of living.

Ability to pay support was indicated by the number of properties divided in the divorce settlement and the gender of the support payer. Number of properties is monotonically related to income and serves as an income proxy: the more income available, the more support suggested by the guidelines. Males earn more than females, both because they have higher wage rates and they work longer hours. On average, fathers can be expected to have more income than mothers and, consequently, pay more support.

The background situation of the particular case can play a role in determining the outcome. Background is controlled by including rural/urban character of the county and four measures of the contentiousness of the divorcing couple. Contentiousness was indicated by whether the husband or wife contested the divorce and the number of motions filed by the wife and husband. The effects of the background variables remains an empirical question.

The shadow of the law is represented in the analyses by years (whether before and after the support guidelines) representation of the divorcing couple by attorneys, type of divorce action taken, and role of plaintiff. The guidelines are expected to have increased the probability of receipt and amount of child support. These were the intended outcomes of the policy change represented by the guidelines. Having an attorney represent you in a divorce proceeding brings in additional resources in the form of specialized knowledge of the legal system. Having an attorney is expected to benefit the person represented by the attorney. If the person is the custodial parent, having an attorney is expected to increase child support. If the person is the noncustodial parent, having an attorney is expected to affect the probability of receipt of child support. Seeking a dissolution rather than a divorce is expected to increase the probability of receipt and amount of child support. Dissolutions require better relations between the divorcing parties than do divorces. The better relations may spill over into a willingness to pay more support. On the

other hand, the better relations may lead to the custodial parent requesting less, in confidence that if more is needed it will be supplied. Dissolution settlements can not be reopened; child support in a dissolution agreement can not be modified. This feature of dissolution settlements provides an incentive to agree on higher initial amounts to hedge against future inflation and increases in the cost of rearing children as they age. Plaintiffs seek divorce actions; they take the initiative. When the woman is both the plaintiff and the custodial parent, being a plaintiff is expected to increase the child support requested, *ceteris paribus*.

Results

One outcome of increased fairness and predictability is reduced capriciousness. Capriciousness, the obverse of predictability, manifests itself in the form of variability: children from comparable families get different amounts of child support. Accordingly, the first analysis was an examination of the distribution of child support before and after the guidelines and a *t* test for difference in means. The mean amount of child support remained the same after the guidelines. The \$1.50 increase in average per capita child support was not a significant difference. However, the distribution of child support was noticeably tighter after imposition of the guidelines. The standard deviation and variance declined; they dropped from 119.88 and 14,369.9 before to 73.37 and 5,383.53 afterward. The amount of child support was more predictable in 1987.

Receipt of a child support award also was more predictable. The probability of receiving child support increased significantly post guidelines, even though the characteristics and legal procedures followed by divorcing couples with children did not differ. It should be noted that the only difference between nonrecipients before and after the guidelines was in the incidence of paternal custody. In 1985 may more nonrecipients were in the custody of their fathers than in 1987-88.

TABLE 2 Receipt of Child Support

Explanatory Variables	1985	1987
	Regression Coefficient (std. error)	Regression Coefficient (std. error)
Rural	-0.17 (0.20)	0.03 (0.05)
Number of children	0.14* (0.08)	-0.01 (0.03)
Length of marriage	0.01 (0.01)	-0.01* (0.003)

continued

Explanatory Variables	1985	1987
	Regression Coefficient (std. error)	Regression Coefficient (std. error)
Wife only had attorney	0.03 (0.20)	0.21* (0.06)
Both had attorney	-0.09 (0.16)	-0.003 (0.07)
Husband only had attorney		omitted
Wife was plaintiff	-0.03 (0.16)	0.10 (0.07)
Husband was plaintiff		omitted
Dissolution	-0.02 (0.21)	-0.11 (0.10)
Divorce		omitted
Wife contested	0.03 (0.38)	0.10 (0.11)
Husband contested	0.29 (0.22)	-0.01 (0.09)
Number of motions by husband	-0.07 (0.10)	-0.03* (0.02)
Number of motions by wife	-0.08 (0.08)	0.004 (0.10)
Intercept	0.85 (0.27)	0.73 (0.10)
N	301	556
R	0.04	0.05
F	1.01	2.68

To further assess the ramifications of the guidelines, we replicated one of our previous analyses of receipt and amount of child support awards in 1985 using the data from 1987-88. The determinants of child support changed after adoption of the guidelines. In 1985 receipt of child support was significantly affected by length of marriage, whether the wife only had an attorney, and the number of motions made by the husband. In 1985, the longer the woman had been married, the older the children were, and the more motions made by the husband the less probable a child support award. If the wife had an attorney and the husband did not, child support was more probable. On the other hand, in 1987-88, only number of children affected receipt of child support. Each child increased the probability of receipt of child support 14 percent. The most noticeable differences are in the influence of number of children and the wife's attorney. In 1985, each child decreased the probability of receipt of child support one

percent rather than increasing the probability substantially. In 1987-88 the wife only having an attorney increased the probability of child support only three percent rather than 21 percent.

TABLE 3 Amount of Child Support, Model 1

Explanatory Variables	1985	1987
	Regression Coefficient (std. error)	Regression Coefficient (std. error)
Rural	25.68* (11.36)	-8.37 (13.29)
Number of children	-3.73 (6.19)	-16.60* (5.68)
Length of marriage	1.80* (0.81)	0.25 (0.46)
Wife only had attorney	22.18* (13.69)	18.02 (13.27)
Both had attorney	12.54 (14.97)	-9.99 (10.83)
Husband only had attorney		omitted
Wife was plaintiff	5.35 (14.96)	-2.11 (10.56)
Husband was plaintiff		omitted
Dissolution	-9.49 (20.43)	19.92 (14.36)
Divorce		omitted
Wife contested	-3.21 (24.07)	-10.01 (25.59)
Husband contested	-4.03 (19.10)	2.81 (14.75)
Number of motions by Husband	0.84 (2.12)	3.02 (5.98)
Number of motions by Wife	-4.31 (4.42)	7.16 (7.10)
Intercept	5.40 (21.64)	50.00 (17.96)
N	554	624
R-square	0.0306	0.0512
F	1.55	1.42

The determinants of amount of child support also changed after the guidelines. In 1985 years married, rural, and wife had attorney significantly increased the amount of per capita child support awarded. In 1987-88, on the other hand,

number of children significantly decreased the amount of per capita child support awarded. The negative coefficient on number of children is a reflection of the marginal expense basis for the Ohio guidelines. Although the marginal expense feature of the Ohio guidelines has not been explicitly recognized, it is an integral feature of the income shares model on which the Ohio guidelines were based. The negative sign confirms the marginal basis and the size of the coefficient for number of children indicates the amount of anticipated economies of size. Not only do the significant variables differ before and after the guidelines, the size and sign of the coefficients differ. Taken altogether, the results in Table 3 indicate a substantially different decision making process leading to child support determinations after imposition of the guidelines.

Whereas the analyses in Tables 2 and 3 examined the influence of procedural decisions during divorce on child support awards, the analysis in Table 4 examined the influence of the legal system, the shadow of the law, while controlling for need, ability to pay, and the background situation of the case. The results of this analysis also indicated the existence of a substantially different procedure to determine amount of per capita child support after imposition of the guidelines. In 1985, before the guidelines, five variables significantly increased the amount of child support awarded. In 1985 the social milieu and its attendant value structure affected the amount of child support. Rural counties awarded higher child support than urban counties. The legal system exerted its influence via the legal representation of the divorcing parties. Wives represented by an attorney received more child support. Need for child support was the major determinant of amount of child support. Years married, age of children, shared custody and designated expense payment all significantly increased the amount of child support awarded. Although shared custody and designated expense payment decreased the need for cash child support, in 1985 they were better indicators of willingness to pay. Number of properties and support paid by father instead of mother did not affect amount of child support. In 1987-88 only the number of children significantly affected the amount of child support awarded. Number of children is legally mandated to influence the amount of child support. It is gratifying to find that it does. The other mandated influence is income. Number of properties, which should be positively correlated with income, had a positive coefficient in 1987-88, but it was insignificant. None of the variables which significantly increased child support in 1985 affected child support in 1987-88.

TABLE 4 Amount of Child Support, Model II

Explanatory Variables	1985	1987
	Regression Coefficient (std. error)	Regression Coefficient (std. error)
Rural	24.15* (10.30)	-9.20 (10.57)
Length of marriage	1.63* (0.80)	0.21 (0.46)
Number of children	-2.93 (6.05)	-16.08* (5.68)
Number of properties	-4.29 (11.67)	3.19 (14.32)
Wife only had attorney	26.37* (13.42)	14.84 (12.25)
Both had attorney	-5.95 (12.74)	-5.71 (10.42)
Husband only had attorney	omitted	
Father pays support	3.66 (13.27)	-3.96 (11.43)
Shared custody	30.81* (18.69)	-15.93 (15.09)
Dissolution	-8.83 (11.71)	10.58 (10.44)
Divorce	omitted	
Number of expenses paid	14.72* (3.05)	-0.42 (0.58)
Intercept	-14.66 (20.23)	72.59 (29.69)
<hr/>		
N	554	624
R-square	0.0755	0.0499
F	4.44	1.53

The child support guidelines in Ohio increased the probability of receipt of child support and the amount became more predictable. They also increased the influence of number of children, not only on the amount but the nonreceipt of child support. The influence of procedural decisions declined after the guidelines. While the guidelines appear to be functioning rather well as a floor, they are also functioning as a ceiling. Child support for children in low income families appears to have improved. Child support for children in middle to upper income families may have declined. The damping effect of the guidelines may warrant examination. Child support awards in Ohio never have been generous; they have been in the bottom quintile of the states. Ohio remains there, and it is not in the

bottom quintile in income. Thus, it would seem that the guidelines have improved predictability more than fairness.

REFERENCES

- Beller, Andrea H. and John W. Graham (1986). "The Determinants of Child Support Income." Social Science Quarterly. 67 (June): 353-364.
- Ohio Revised Code, Section 3113.21 (1987). Payment of Support: Enforcement Procedures.
- Permanent Commission on the Status of Women (1979). Marital Dissolution: The Economic Impact on Connecticut Men and Women. State of Connecticut.
- Robins, Philip K. and Katherine P. Dickinson (1985). "Child Support and Welfare Dependence: A Multinomial Logit Analysis." Demography. 22 (No.3; August): 367-380.
- The Supreme Court of Ohio (1987). Court Adopts Child Support Guidelines. (August 4) Columbus.
- White, Kenneth R. and Thomas R. Stone (1976). "A Study of Alimony and Child Support Rulings With Some Recommendations." Family Law Quarterly, 10 (Spring): 75-91.
- Yee, Lucy M. (1979). "What Really Happens in Child Support Cases: An Empirical Study of Establishment and Enforcement of Child Support Orders in the Denver District Court." Denver Law Journal. 57:21-65.

AN OVERVIEW OF SELECTED CONSUMER DECISION RULES

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Abstract

Consumers may choose to use general guidelines or rules of thumb to limit the amount of prepurchase search. This paper reviews rules that consumers may use as substitutes for information about product quality (i.e., price indicates quality) and rules used instead of information about price (i.e., larger sizes are better buys).

Search theory assumes that consumers determine the optimal amount of search based on the costs and benefits (Stigler 1961; Nelson 1970). However, consumers may substitute general guidelines or "rules of thumb" for information search. The substitutions will occur if consumers believe that the costs of search are high and/or the benefits are low compared to those incurred when rules are used.

Research indicates that consumers respond to perceived risks by using heuristics or seeking out product information (Lutz and Reilly 1974; Roselius 1971; Sheth and Venkatesan 1968; Taylor 1974). Several factors may lead consumers to perceive risk, including product-related factors such as technological complexity and high price and consumer-related factors such as inexperience with the product and importance attached to the purchase (Folkes 1988).

Consumers may choose to substitute rules of thumb for search to avoid information overload. (See Jacoby, Speller, and Berning (1974) and Jacoby, Speller, and Kohn (1974) for a discussion of the concept; Keller and Staelin (1987) examine the effects of information quality and quantity on decision effectiveness.) Olshavsky and Rosen (1985) and Rosen and Olshavsky (1987a, 1987b) found results consistent with the view that strategies can be used to limit search activity.

The rules that consumers use can generally be divided into two categories: those that substitute for information about quality and those that substitute for information about price. Because rules about product quality are far more numerous than those about price, the discussion will begin with quality rules.

Rules of Thumb About Product Quality

The literature indicates a variety of rules that consumers may use as substitutes for objective information about the quality of products². Brand name, level of advertising, store image, product warranties, and seals of approval have all been identified as extrinsic cues that

consumers might use as proxies for objective information about a product's quality.

Respondents in a study by Mazursky and Jacoby (1985) selected brand name more frequently than any other information in forming impressions about the quality of merchandise. [See also Jacoby et al. (1978) and Jacoby, Szybillo, and Busato-Schach (1977)]. Maynes (1976) has described this as use of the rule, "Once excellent, always excellent. Buy a known brand." Research by Morris (1971b) and Cude (1988b) has, however, demonstrated that past performance of a brand is an ineffective predictor of future quality.

Morris examined the quality ratings of all models marketed by each of 18 firms and tested by Consumer Reports (CR) from 1960 to 1969. She devised three mathematical procedures, each of which assigned a single quality score, to summarize the overall quality ranking of each firm. Cude (1988b) replicated Morris' study using CR data for 1975 to 1984 for 14 manufacturers. The mean quality score of 2347 models in 500 product tests in Morris' research was 55.6 percent; Cude found a mean score of 53.9 percent. In both studies, wide year-to-year variations in firms' annual quality scores were common, suggesting that reliance on past experience with brand names may lead consumers astray in their search for product quality.

Research by Nelson (1970, 1974), Milgrom and Roberts (1986), and Schmalensee (1978) provides evidence that consumers may use level of advertising as an indicator of product quality. Consumers may believe that a higher level of advertising indicates quality because it signals that the company thinks the goods are worth advertising. Reliance on level of advertising as a quality cue may be greater for experience goods than for search goods. Research demonstrates, however, at best limited support for the validity of the rule (Rotfeld and Parsons 1989).

Research also indicates that consumers may use store image as a proxy for objective measures of product quality for some products (Wheatley and Chiu 1977). Product warranties may also be used as a market signal to indicate reliability, one component of product quality. Research provides conflicting evidence on the validity of the rule, however. Wiener (1985) found that the product warranty was an accurate sign of product reliability for air conditioners, televisions, washers, and dryers. Gerner and Bryant (1981) examined a similar set of durable goods and concluded that the different manufacturers' warranties were so similar that they were of little or no use as market signals of quality. Consumers may also use third-party certification marks to indicate quality. In a survey of

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² The rules seem to apply exclusively to goods, not services.

consumers, Laric and Sarel (1981) found that most believed that products with the Good Housekeeping Seal are of better quality than products without the seal.

Alba and Marmorstein (1987) have suggested that consumers may use a very simple rule to judge product quality -- i.e., frequency knowledge. Consumer decisions may be influenced by the mere number of positive and negative attributes associated with a brand or by the mere number of dimensions on which one brand outperforms another. The knowledge does not contain specific facts about the brand and attributes. Unlike other heuristics, use of frequency knowledge does not require the decision maker to evaluate the performance of a brand on any substantive dimensions. Thus, the rule can lead consumers to ignore important information but is likely to be used by consumers seeking guidelines with low implementation costs.

Rosen and Olshavsky (1987b) have identified rules that rely on the use of recommendations from others to limit search activities. They have hypothesized that consumers may limit information search to a set of recommended brands or use a referred brand as a standard for comparison to other brands the consumer has identified as options.

Morris (1971a) examined the validity of a rule that associates higher quality with top-of-the-line models. For many appliances and other durables, the bottom of the line is usually a basic or "no-frills" model. With each step up the line, more features are added and the price increases. Morris' research indicated that with big jumps up the product line, product quality did improve. However, consumers who purchase top-of-the-line models may pay for features they do not want or need.

Price as an indicator of perceived quality is the rule of thumb that has received the greatest attention in both the marketing and consumer economics literature. Research has demonstrated that consumers do believe there is a positive relationship between price and perceived quality (Rao and Monroe 1988; Monroe and Krishnan 1985; Rao 1971). Scitovsky (1945) explained that the use of price to indicate quality is a logical approach, since it implies the belief that price is set by the competitive interplay of supply and demand. A higher price suggests more expensive inputs in terms of factors of production which suggest higher quality.

Researchers have also attempted to identify consumer characteristics associated with use of the price-indicates-quality rule. Studies by Lichtenstein, Bloch, and Black (1988) indicated that consumers with high product involvement (i.e., those who associate important functional, social, and psychological outcomes with the product) were more likely to use price-quality inferences. The researchers did not find that product knowledge was a mediating factor, however. Indeed, Rao and Monroe (1988) suggest that novice or unfamiliar buyers may not be the

only consumers to use the price-quality rule. While the novice buyer may use the rule as a substitute for information about quality, knowledgeable consumers may use it because they have information or experience that leads them to believe that, for some product classes, prices are reliable predictors of product quality.

Zeithaml (1988) developed a conceptual model that defines and relates price and perceived quality. She suggests that use of price as an indicator of quality depends on the availability of other cues to quality, price variation within a class of products, product quality variation within a category of products, level of price awareness of consumers, and consumers' ability to detect quality variation in a group of products. Research has shown that price is used as a quality cue to a greater extent when brands are unfamiliar (Smith and Broome 1966; Stokes 1985). Consumers tend to select the higher-priced product when the perceived risk of making an unsatisfactory choice is high (Lambert 1972; Peterson and Wilson 1985).

Several studies have demonstrated, however, a poor price-quality correlation. Research has generally indicated a weak relationship between price and quality; some studies have even identified negative relationships. (See Geistfeld (1988) for a review of the price-quality literature.) Although researchers have suggested a variety of factors that might indicate that stronger price-quality relationships should exist, studies have not confirmed their hypotheses. Gerstner (1985) demonstrated that the price-quality relationship was weaker for frequently purchased items than for infrequently purchased ones. Curry and Riesz (1988) examined price-quality relationships over a period of 20 years and found that the relationship weakened over time in 65 percent of the cases. Research by Bodell et al. (1986) did not support the hypothesis that price-quality correlations are stronger for higher-priced items.

Morris and Bronson (1970) and Cude (1987) also provided evidence of a weak price-quality relationship but from a different perspective. [See also Morris (1971a), Cude (1986), and Cude (1988a)]. Morris and Bronson used data from 637 CR product tests between 1961 and 1968. They calculated the maximum monetary loss (in percent) that an uninformed consumer might incur by buying a higher-priced, qualitatively inferior item (a "worst choice") rather than a highly rated, low-priced option (a "best choice") in the same product test. Dividing the price of the worst choice by that of the best choice, Morris found that the worst choice was, on the average, from 120.73 percent to 240.67 percent more costly than the best choice.

Cude (1987) used 929 product tests in CR between January 1975 and November 1984 to replicate and extend Morris' study. She used three methods to compare the prices and quality of the best and worst choices. In methods 1 and 2, the worst

choice was qualitatively inferior to the best choice. However, in method 1 the worst choice was the most expensive lower-quality option (Morris' definition), while in method 2 it was the least expensive alternative. In method 3, both the best and worst choices were selected randomly without regard to quality rankings or prices. When the worst choice in a product test was more costly than the corresponding best choice, the price difference (in percent) was computed to estimate the returns to search in 12 product classes. In methods 1 and 2, the prices of the worst choices averaged from 2 percent to 435 percent higher than the prices of the best choices. In method 3, the worst choice prices were from 14 to 125 percent more than the prices of the best choices. In most of the 12 product classes, the worst choice was more expensive than the best choice in approximately one-half of the product tests.

Rules of Thumb About Price

The consumer education literature [see, for example, Lee and Zelenak (1982) and Wish, Steeley, and Tritten (1978)] offers numerous rules that consumers might substitute for information about the relative price of a product. Examples include rules relating greater convenience to higher price and those advocating sales purchases. However, the greatest attention has been given to one rule -- larger sizes are better buys. Generally the rule has been discussed as a substitute for the time intensive task of acquiring information about price through unit pricing. It is generally believed that consumer use of the rule is widespread. Indeed, in studies by Granger and Billson (1972) and Nason and Bitta (1983), approximately 80 percent of consumers believed that smaller sizes were more expensive per unit than larger sizes.

However, much research has also demonstrated that the larger size rule is frequently invalid. Widrick (1979a, 1979b), Walker and Cude (1984), and Nason and Bitta (1983) all identified instances in which quantity surcharges existed -- the price of a larger size of a brand was higher per unit than the price of a smaller size of the brand. The researchers identified incidences of quantity surcharges of about 18 percent (Walker and Cude 1984; Widrick 1979b), 25 percent (Nason and Bitta 1983), and near 30 percent (Widrick 1979a; Nason and Bitta 1983). Generally, surcharges were found to occur more often when numerous brand sizes were offered and non-integer package size comparisons were required. Also, personal care products had a lower incidence of surcharges than food and laundry products (Walker and Cude 1984; Widrick 1979a; Widrick 1979b).

However, Cude and Walker (1984) demonstrated that the low frequency and magnitude of the quantity surcharges were outweighed by the greater likelihood of purchasing a larger size priced at a relatively substantial discount. Among the 19 products examined, the mean surcharge ranged from \$.65 to less than one cent. Tuna fish was the only product for which the expected value of the return from buying a larger size was negative.

That is, consumers buying a larger size of tuna could expect costs \$.03 higher than if two or more smaller sizes were purchased.

Research by Nason and Bitta (1983) suggested that a substantial proportion of consumers are aware of quantity surcharges. Nearly one-half of the consumer sample indicated awareness and a majority (60.8 percent) of those who were aware of surcharges reported that they had encountered surcharges at least occasionally.

Research by Walker and Cude (1983) examined the use of the larger size rule in grocery shopping along with five other rules that consumers might substitute for unit pricing. (See also Cude and Walker 1985). The strategies included buying generic products, buying sale items, and brand-specific decision rules. Quantity thresholds were set to define "larger" sizes and to implement the brand-specific strategies brand names were randomly selected for each of the 23 items in the market basket. Price and size data collected from three supermarkets were used to simulate use of the strategies.

Unit pricing produced the lowest money cost at each store but required over 200 price comparisons to implement. The larger size rule resulted in expenditures that were generally about \$2 higher than when unit pricing was used but the number of price comparisons was reduced to about 90. Expenditures from the buy-generic strategy were only about \$1 higher than the unit pricing results and the number of price comparisons dropped to 25. Compared to unit pricing, buying sale items increased expenditures by \$3 to \$4 and decreased the number of price comparison to less than 50. The two brand-specific strategies resulted in the highest expenditures but with fewer than 50 price comparisons.

Walker and Cude evaluated the relative efficiency of the strategies using hypothetical wage rates to impute a value for time. They concluded that the buy-generic strategy was most likely to be efficient for consumers who place a high value on their time; it was the strategy that produced money costs closest to those of unit pricing with the least time investment.

Conclusions

This paper has focused on rules related to perceived quality and relative price. Clearly these are not the only factors that consumers evaluate when making purchase decisions. (See Zeithaml 1988 for a discussion of perceived value as a purchase determinant.) Nor is it assumed that consumers always strive to find the lowest price and/or the highest quality. Yet price and quality are frequently among the factors evaluated in most purchase decisions.

The literature provides strong evidence that consumers do frequently substitute rules of thumb for information about product quality and price. It also indicates that use of some of the rules can lead consumers to select products different

from those that would be chosen if information were acquired. However, decisions made using rules may not be inefficient even if the rules lead consumers to purchase lower quality and/or pay a higher money price than they would have if they had acquired information. The lower search costs associated with the rules may more than offset the monetary or quality losses.

What role do consumer educators play in consumers' use of rules of thumb? Shaklee and Fischhoff (1982) suggest that consumers often fail to seek evidence that might disconfirm a hypothesized decision rule. Thus, consumer educators can and should make consumers aware of the validity of frequently used rules. Maynes and Assum (1982) have demonstrated that consumers are not aware of the extent of price dispersion in local markets and Zeithaml's (1988) research indicates that many consumers have only a limited awareness of product prices. Thus, consumer educators can also help consumers to become more efficient in their use of rules by increasing their awareness of information needed to implement rules (e.g., prices). Greater knowledge about marketplace conditions can also help consumers to decide which rules may be valid substitutes for information and under what conditions.

REFERENCES

- Alba, Joseph W. and Howard Marmorstein (1987), "The Effects of Frequency Knowledge on Consumer Decision Making," Journal of Consumer Research, 14(2), 14-25.
- Bodell, Richard W., Robert R. Kerton, and Richard W. Schuster (1986), "Price As A Signal of Quality: Canada in the International Context," Journal of Consumer Policy, 9(4), 431-444.
- Cude, Brenda J. (1988a), "Comparison Shopping: Estimating the Returns," Journal of Education for Business, 63(8), 369-371.
- Cude, Brenda J. (1988b), "Consistency in the Quality of Products of Fourteen Major Manufacturers, 1975-1984," in Proceedings, Vickie Hampton, ed. Columbia, MO: American Council on Consumer Interests, 226-232.
- Cude, Brenda J. (1987), "Estimating the Returns to Informed Decision-Making," Journal of Consumer Affairs, 21(1), 86-95.
- Cude, Brenda J. (1986), "Estimating the Returns to Informed Decision-Making: What Is a Subscription to Consumer Reports Worth?" in Proceedings, K.P. Schnittgrund, ed. Columbia, MO: American Council on Consumer Interests, 32-37.
- Cude, Brenda and Rosemary Walker (1984), "Quantity Surcharges: Are They Important In Choosing a Shopping Strategy?" Journal of Consumer Affairs, 18(2), 287-295.
- Cude, Brenda and Rosemary Walker (1985), "Unit Pricing and Alternatives: Developing An Individualized Shopping Strategy," Journal of Business Education, 60(4), 168-172.
- Curry, David J. and Peter C. Riesz (1988), "Prices and Price/Quality Relationships: A Longitudinal Analysis," Journal of Marketing, 52(1), 36-51.
- Folkes, Valerie S. (1988), "The Availability Heuristic and Perceived Risk," Journal of Consumer Research, 15(2), 13-23.
- Geistfeld, Loren V. (1988), "The Price Quality Relationship: The Evidence We Have, The Evidence We Need," in The Frontier of Research in the Consumer Interest, E. Scott Maynes, ed. Columbia, MO: American Council on Consumer Interests, 143-172.
- Gerner, Jennifer L. and W. Keith Bryant (1981), "Appliance Warranties as a Market Signal?" Journal of Consumer Affairs, 15(1), 75-86.
- Gerstner, Eitan (1985), "Do Higher Prices Signal Higher Quality?" Journal of Marketing Research, 22(2), 209-215.
- Granger, C.W.J. and A. Billson (1972), "Consumers' Attitudes Toward Package Size and Price," Journal of Marketing Research, 9(3), 239-248.
- Jacoby, Jacob, R.W. Chestnut, W.D. Hoyer, D.W. Sheluga, and M.J. Donahue (1978), "Psychometric Characteristics of Behavioral Process Data: Preliminary Findings on Validity and Generalizability," in Advances in Consumer Research, Vol. 5, H. Keith Hunt, ed., Ann Arbor, MI: Association for Consumer Research, 546-554.
- Jacoby, Jacob, Donald E. Speller, and Carol Kohn Berning (1974), "Brand Choice Behavior as a Function of Information Load: Replication and Extension," Journal of Consumer Research, 1(1), 33-42.
- Jacoby, Jacob, Donald E. Speller, and Carol A. Kohn (1974), "Brand Choice Behavior as a Function of Information Load," Journal of Marketing Research, 11(1), 63-69.
- Jacoby, Jacob, G.J. Szybillo, and J. Busato-Schach (1977), "Information Acquisition Behavior in Brand Choice Situations," Journal of Consumer Research, 3(4), 209-215.
- Keller, Kevin Lane and Richard Staelin (1987), "Effects of Quality and Quantity of Information on Decision Effectiveness," Journal of Consumer Research, 14(3), 200-213.
- Lambert, Zarryl (1972), "Price and Choice Behavior," Journal of Marketing Research, 9(1), 35-40.

- Laric, Michael V. and Dan Sarel (1981), "Consumer (Mis)Perceptions and Usage of Third Party Certification Marks, 1972 and 1980: Did Public Policy Have an Impact?" Journal of Marketing, 45(3), 135-142.
- Lee, Stewart M. and Mel Z. Zelenak (1982), Economics for Consumers, Belmont, CA: Wadworth Publishing Company.
- Lichtenstein, Donald R., Peter H. Bloch, and William C. Black (1988), "Correlates of Price Acceptability," Journal of Consumer Research, 15(3), 243-252.
- Lutz, Richard J. and Patrick J. Reilly (1974), "An Exploration of the Effects of Perceived Social and Performance Risk on Consumer Information Acquisition," in Advances in Consumer Research, Vol. 1, eds. Scott Ward and Peter Wright, Chicago: Association for Consumer Research, 393-405.
- Maynes, E. Scott (1976), Decision Making for Consumers, N.Y.: Macmillan Publishing Co.
- Maynes, E. Scott and Terje Assum (1982), "Informationally Imperfect Consumer Markets: Empirical Findings and Policy Implications," Journal of Consumer Affairs, 16(1), 62-87.
- Mazursky, David and Jacob Jacoby (1985), "Forming Impressions of Merchandise and Service Quality," in Perceived Quality, J. Jacoby and J. Olson, eds. Lexington, MA: Lexington Books, 139-154.
- Milgrom, Paul and John Roberts (1986), "Price and Advertising Signals of Product Quality," Journal of Political Economy, 94(4), 796-821.
- Monroe, Kent B. and R. Krishnan (1985), "The Effect of Price on Subjective Product Evaluations," in Perceived Quality: How Consumers View Stores and Merchandise, eds. J. Jacoby and Jerry C. Olson, Lexington, MA: Lexington Books, 209-232.
- Morris, Ruby Turner (1971a), Consumers Union: Methods, Implications, Weaknesses & Strength, monograph.
- Morris, Ruby Turner (1971b), "Major Firms Comparatively Evaluated," Journal of Consumer Affairs, 15(2), 119-139.
- Morris, Ruby Turner and Claire Sekulski Bronson (1970), "The Potential Loss in Money Income to the American People by Haphazard Purchasing," Journal of Consumer Affairs, 4(2), 103-112.
- Nason, Robert W. and Albert J. Della Bitta (1983), "The Incidence and Consumer Perceptions of Quantity Surcharges," Journal of Retailing, 59(2), 40-53.
- Nelson, Philip (1974), "Advertising as Information," Journal of Political Economy, 81(4), 729-754.
- Nelson, Philip (1970), "Information and Consumer Behavior," Journal of Political Economy, 78(20), 311-329.
- Olshavsky, Richard W. and Dennis L. Rosen (1985), "Use of Product-Testing Organizations' Recommendations as a Strategy for Choice Simplification," Journal of Consumer Affairs, 19(1), 118-139.
- Peterson, Robert A. and William R. Wilson (1985), "Perceived Risk and Price-Reliance Schema and Price-Perceived Quality Mediators," in Perceived Quality, J. Jacoby and J. Olson, eds. Lexington, MA: Lexington Books, 247-268.
- Rao, Vithala R. (1971), "Salience of Price in the Perception of Product Quality: A Multidimensional Measurement Approach," in Proceedings, ed. Fred C. Alvine, Chicago, IL: American Marketing Association, 571-577.
- Rao, Akshay R. and Kent B. Monroe (1988), "The Moderating Effect of Prior Knowledge on Cue Utilization in Product Evaluations," Journal of Consumer Research, 15(3), 253-264.
- Roselius, Ted (1971), "Consumer Ranking of Risk Reduction Methods," Journal of Marketing, 35(1), 56-61.
- Rosen, Dennis L. and Richard W. Olshavsky (1987a), "The Dual Role of Informational Social Influence: Implications for Marketing Management," Journal of Business Research, 15(2), 123-144.
- Rosen, Dennis L. and Richard W. Olshavsky (1987b), "A Protocol Analysis of Brand Choice Strategies Involving Recommendations," Journal of Consumer Research, 14(4), 440-444.
- Rotfeld, Herbert J. and Patrick R. Parsons (1989), "Are Heavily Advertised Products Really Better?" in Proceedings, Mary Carsky, ed. Columbia, MO: American Council on Consumer Interests, in press.
- Schmalensee, Richard (1978), "A Model of Advertising and Product Quality," Journal of Political Economy, 86(3), 485-503.
- Scitovsky, Tibor (1945), "Some Consequences of the Habit of Judging Quality by Price," The Review of Economic Studies, 12(32), 100-105.
- Shaklee, Harriet and Baruch Fischhoff (1982), "Strategies of Information Search in Causal Analysis," Memory and Cognition, 10(6), 520-530.
- Sheth, Jagdish N. and M. Venkatesan (1968), "Risk-Reduction Processes in Repetitive Consumer Behavior," Journal of Marketing Research, 5(3), 307-310.

- Smith, E.M. and C. Broome (1966), "Experimental Determination of the Effect of Price and Market-Standing Information on Consumers' Brand Preferences," in Fall Proceedings. Chicago: American Marketing Association, 520-531.
- Stigler, George J. (1961), "The Economics of Information," Journal of Political Economy, 69(3), 213-225.
- Stokes, Raymond C. (1985), "The Effect of Price, Package Design, and Brand Familiarity on Perceived Quality," In Perceived Quality, J. Jacoby and J. Olson, eds. Lexington, MA: Lexington Books, 233-246.
- Taylor, James W. (1974), "The Role of Risk in Consumer Behavior," Journal of Marketing, 38(2), 54-60.
- Walker, Rosemary and Brenda J. Cude (1984), "The Frequency of Quantity Surcharges: Replication and Extension," Journal of Consumer Studies and Home Economics, 8(2), 121-128.
- Walker, Rosemary and Brenda J. Cude (1983), "In-Store Shopping Strategies: Time and Money Costs in the Supermarket," Journal of Consumer Affairs, 17(2), 356-369.
- Wheatley, John J. and John S.Y. Chiu (1977), "The Effects of Price, Store Image, and Product and Respondent Characteristics on Perceptions of Quality," Journal of Marketing Research, 14(2), 181-186.
- Widrick, S.M. (1979a), "Measurement of Incidents of Quantity Surcharge Among Selected Grocery Products," Journal of Consumer Affairs, 13(1), 99-107.
- Widrick, S.M. (1979b), "Quantity Surcharge: A Pricing Practice Among Grocery Store Items -- Validation and Extension," Journal of Retailing, 55(2), 47-58.
- Wiener, Joshua Lyle (1985), "Are Warranties Accurate Signals of Product Reliability?" Journal of Consumer Research, 12(3), 245-250.
- Wish, John R., Donald G. Steely, and Stephen E. Tritten (1978), The Consumer, Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Zeithaml, Valarie A. (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," Journal of Marketing, 52(3), 2-22.

PRODUCT PRICE, A REFLECTION OF SELLER CHARACTERISTICS?

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The purpose of this study was to make a preliminary effort toward addressing the hypothesis that seller characteristics affect the relationship between product price and quality. Results for a pilot study indicate that the amount of search cost reducing characteristics provided by the seller is significant in explaining price variation of a small electrical appliance in the Columbus, Ohio market.

INTRODUCTION

In a recent review of the literature examining the association between objective quality and price, Geistfeld (1988) noted that much of this literature uses Consumer Reports as the source for quality and price data. This raises an important question as to how relevant these studies are to specific local markets. The problem was recognized in the late 1970's when Sproles (1977) noted that there may be variability in prices and specific brands which are available in local markets based on retailing factors such as the size and number of competitive retailers, size of the trading area and local economic conditions. Geistfeld, Maynes and Duncan (1980) provide an analysis of data collected in three markets: Ann Arbor, Michigan; Ithaca, New York; and Minneapolis/St. Paul, Minnesota. They report that the Minneapolis/St. Paul market generally has the largest number of sellers for a given product/brand/model, the number of brand/models for a given product was generally lowest in Ithaca, and it was not clear whether or not one market was systematically more "expensive" than another. Geistfeld (1988) noted that the trend toward the use of price data obtained in specific local markets needs to be continued. In addition, he noted that the closer we get to the actual price paid for a variety by the consumer, the better will be the measure of market imperfections but, that when collecting market specific prices, one is forced to address the issue of seller characteristics. If seller characteristics are a significant aspect of a product price, clearly, studies relating the price of a good to objective quality derived from sources such as Consumer Reports may not reflect what is actually happening in the marketplace.

It was not until the early 1980s that research findings appeared giving clues to the possible effect of seller characteristics on product

price. Unfortunately these studies provide conflicting evidence. Duncan (1981) studied the dynamics of a local consumer market focusing on cameras using quality scores reported in Consumer Reports and price data collected in Ann Arbor. He reports that the price levels among stores exhibited a high correlation over time. However, a more detailed look at the evidence suggested less of a tendency for some stores to be consistently higher priced or lower priced than others. Duncan (1981) noted that if the quality of services offered by a store results in higher prices charged by that store, then one would expect high-quality stores to have consistently higher prices on all their models and low-quality stores to have consistently lower prices on all their models, and such was not the case in these data. Geistfeld (1982) reported a study in which he used quality data from Consumer Reports and collected price data in Lafayette and Indianapolis, Indiana. While the primary purpose of this study was to determine the extent to which local markets differ from one another, Geistfeld (1982) reported a secondary analysis of price-quality correlations based on store type. Examining five store types he found average Spearman correlation coefficients ranging from -0.14 to 0.65. These findings lend support to the hypothesis that seller characteristics affect the relationship between price and quality.

What follows is a preliminary effort toward addressing this issue. The specific research question to be addressed in this paper is whether or not seller attributes are systematically reflected in product price of a small electrical appliance in the Columbus, Ohio market.

THE ROLE OF SELLER CHARACTERISTICS

When purchasing a good, consumers are buying characteristics inherent in the good itself (variety characteristics) and the characteristics of the seller (seller characteristics). Variety characteristics have been defined by Geistfeld, Sproles and Badenhop (1977) as any feature of a product which is intrinsic to the product and which, directly or indirectly, influences a consumer's evaluation of a specific product variety. Geistfeld (1977) and Maynes (1976) recognized this distinction when they, respectively, defined a variety to be a product/brand/model combination and a specimen as a product/brand/model/seller combination. These definitions recognize that seller characteristics are part of the purchase.

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While it is helpful to distinguish between a specimen and a variety, it is important to consider more carefully what a seller characteristic is. Seller characteristics may be classified into two types: (1) those which enhance the flow of services from a good; and (2) those which reduce cost of information search with respect to price and quality of a good. Examples of the first type of seller characteristic include warranties, seller servicing capability, return policy, etc. These characteristics reduce the risk associated with the purchase of a given flow of services from a good. For example, a consumer may be willing to pay more for a new washing machine with a 5-year warranty than for one with a 2-year warranty, since service-flow risk is reduced under the longer warranty. In essence, consumers are hedging the durability/reliability aspect of a good¹. These characteristics enhance the performance quality of a good and will be referred to risk characteristics.

The second type of seller characteristic includes seller provided situational elements that reduce the temporal, financial and/or psychological cost of search.² Examples of this type of seller characteristic would be the knowledgeability of salespersons, the depth and breadth of a seller's inventory, ease of access to a store, etc. These characteristics provide a means by which the seller may reduce the consumer's search effort prior to making the purchase decision. However, it should be noted that these characteristics do not enhance the quality or desirability of a good per se. In this study these seller characteristics will be referred to as search characteristics.

The implicit assumption underlying the research findings reported here is that all types of seller characteristics are costly for the seller to provide. This suggests that the price of a good will be positively related to the amount of risk and search characteristics provided by the seller, at least to the extent consumers are willing to pay for them.

IDENTIFICATION OF SELLER CHARACTERISTICS

Risk Characteristics

These seller characteristics reduce the effort one would have to expend in resolving problems with a defective variety, whether it be repair or replacement. The net benefit to the consumer is to increase the likelihood of receiving a flow of services from a variety.

Return Policy: flexible requirements with respect to proof of purchase and a relatively long time period over which replacement/ exchange is honored. This will reduce the costs associated with the replacement of a defective product and increase the likelihood that a minimal flow of services will be realized.

Warranty: warranties offered by a retailer or retailer handling of manufacturer warranties.

This reduces transaction costs related to warranty claims and increases the likelihood that one will be able to realize a minimal flow of services from a variety.

Service: servicing provided at point of purchase which can reduce costs associated with variety repair. This will make it more feasible to receive the expected flow of services.

Search Characteristics

These characteristics reduce the costs consumers incur when searching for price and quality information prior to making a purchase decision. There are several types of search characteristics.

Spatial: these types of search characteristics reduce the amount of time a consumer will have to spend travelling from store-to-store.

- proximity to other stores - this enables the consumer to engage in joint production thereby reducing the search cost for a single good.
- ease of access - this reduces the time needed to reach a store.

Temporal: Search characteristics of this type reduce the amount of time spent in a store or facilitate the shopping activity, per se.

- hours open to the public - this allows consumers to choose from a variety of business hours such that it may be possible for them to reduce search costs through joint production or to use "less costly time."
- adequate sales staff - this facilitates the information gathering process by enabling one to ask for information rather than ferreting it out.
- adequate check-out facilities - this reduces time spent consummating a purchase.
- variety of payment methods - sellers accepting a variety of forms of payment can reduce search costs associated with identification of payment options.

Cognitive: These search characteristics improve the information processing capability of a consumer. They range from providing information in a format more suitable to processing to facilitating product comparisons through choice.

- availability of trained personnel - trained sales personnel can assist with the purchase decision by providing information in a context where it can be tailored to a consumer's specific needs and where it is easy to ask questions of clarification.

- broad range of varieties - this would facilitate the comparison of alternatives in a given setting and would reduce the information
- processing costs inherent to visiting several retailers to acquire variety information.

These types of seller characteristics were the ones considered in this study. As noted above the motivation behind this study is to examine the extent to which seller search and risk characteristics affect variety price. However, it is important to recognize that the results reported here are preliminary.

METHOD

Data and sample

Data for this study were collected in Columbus, Ohio during 1988. A convenience sample of 28 stores selling a small appliance (electric irons) were selected for inclusion in the sample. All stores were located within the area defined by the I-270 highway which circles Columbus.

Data collection included an inventory of all varieties of electric irons sold in the store. Information with respect to brand, model (variety) numbers, price (and sale price where applicable) were obtained. Included in the data collection instrument was relevant information with respect to store characteristics and trading policy. Tables 1 and 2 provide information with respect to sample characteristics.

Nineteen of the 28 stores were located in either a strip shopping center with an anchor store, or were free standing. The majority of stores had adequate parking facilities (27/28), and only seven of the 28 store provided specialized sales staff (Table 1).

The number of hours open for business per week for stores in this sample ranged from 48 to 90 hours, with mean of 73.3 hours. Stores accepted an average of 4.82 different methods of payment (e.g., cash, checks, credit cards, store credit cards, etc.). The average number of brands of irons offered for sale in a store was 2.82, and the average number of models (varieties) of irons offered for sale in a store was 6.32 (Table 2).

Of the 28 stores in the sample, 22 required proof of purchase for exchange of a good. The majority of stores (18) allowed more than 90 days for return of a defective product, and 15 of the 28 stores provided repair facilities either at the point of purchase or a store supported central repair facility. Only 11 of the 28 stores provided a store warranty for the product thereby taking direct responsibility for product failure.

Table 3 reports price information on models of irons collected in this study. For each model (variety) the maximum and minimum price at which the model sold in the market is reported and a

variable, relative range, is calculated (Geistfeld, Maynes and Duncan, 1979) by dividing the difference between the maximum and minimum price for a specific model by the minimum price. The relative range indicates the extent to which the maximum price exceeds the minimum price for a specific model (variety) sold in the market, with larger values associated with greater price variation.

Model Estimation

To address the question whether or not seller attributes are systematically reflected in variety price when quality is held constant, two varieties of irons were selected for further analysis, a high and low priced variety. For each store selling a particular variety of iron two variables "search score" and "risk score" were calculated. Search score was calculated to reflect the degree to which the store provided characteristics could reduce the costs consumers incur when searching for price and quality information prior to making a purchase decision. Risk score was calculated to reflect the degree to which the store provided characteristics could reduce the effort one would have to expend in resolving problems related to a defective variety. Table 4 presents information on how search and risk scores were calculated. Variety price was then regressed on search and risk scores.

The following models were estimated using the SAS linear models procedure

$$(1) \quad P_{vi} = P_i [S_s , S_r]$$

$i = 1, 2$ irons

where: P_{vi} = price of iron variety
 S_s = store search score
 S_r = store risk score

From the calculation procedure for search and risk scores presented in Table 4 it may be seen that the estimate of product depth (number of brands and models of irons/toasters sold in the store) severely loads the estimated search scores. To determine whether this is indeed the case, two additional models were estimated in which variety price was regressed on product depth (number of brands of irons plus number of models of irons sold in the store).

RESULTS AND DISCUSSION

Results of model estimation are presented in Tables 5. In interpreting these results caution should be used. First, the pilot nature of this study resulted in the use of extremely small sample sizes and the asymptotic properties of the estimates cannot be guaranteed. Second, data for this study were obtained in the Columbus market and results may not be generalizable to other markets.

Results of the regression of variety price of irons on store search and risk scores indicate

that the predictor variables were significant in explaining price variation (Table 5). Models for the high and low priced irons were both significant at the .10 level, and R^2 for the models were, .27 and .63, respectively. Results indicated that the amount of search cost reducing characteristics provided by the store is significant in explaining price variation for irons. Increasing levels of search cost reducing characteristics were found to increase the price of the more expensive iron (\$0.80), and reduce the cost of the less expensive iron (-\$0.40). The reason for the difference in sign of the search score variable in the two models is ambiguous. A possible explanation for this result is that there is greater pay-off to search in the case of a more expensive iron, and that consumers are willing to pay a higher price for these seller provided services. However, the fact that greater levels of seller provided search characteristics were found to reduce the price of the less expensive iron is inexplicable. These results suggest that the signs and size of the estimates may well be an artifact of the data. However, the fact that the search score variable was significant in both models suggests that this aspect of the purchase decision warrants further investigation.

Risk score was not significant in explaining variety price of irons. This may be the result of the fact that irons are a relatively inexpensive semi-durable item and that service and repair are not salient aspects of the purchase decision. Results of the regression of variety price on the single product depth variable (Model 2 in Table 5) indicates that the construction of the search score variable may well be sensitive to specification.

ENDNOTES

- ¹ Garvin (1984) argued that reliability reflects the probability of a product's failing within a specified period of time and that durability is a measure of product life.
- ² For a discussion of search costs see Maynes (1976, Chapter 2).

REFERENCES

- Duncan, Greg J. (1981). "The Dynamics of Local Markets: A Case Study of Cameras," Journal of Consumer Affairs, 15, 64-74.
- Garvin, David A. (1984). "What Does 'Product Quality' Really Mean?" Sloan Management Review 26, 25-43.
- Geistfeld, Loren V. (1988). "The Price Quality Relationship: The Evidence We Have, The Evidence We Need." In E. Scott Maynes (Ed.) The Frontier of Research in the Consumer Interest. Columbia, MO: The American Council on Consumer Interests. 143-172.

(1982). "The Price-Quality Relationship--Revisited." Journal of Consumer Affairs, 16, 334-46.

(1977). "Consumer Decision Making: The Technical Efficiency Approach," Journal of Consumer Research, 4, 48-56.

_____, Maynes, E. Scott and Duncan, Greg (1980). "Informational Imperfections in Local Consumer Markets: A Preliminary Analysis." In Jerry C. Olson (Ed.) Advances in Consumer Research, Volume VII. Ann Arbor, MI: Association for Consumer Research. 180-85.

_____, Sproles, George B. and Badenhop, Suzanne B. (1977). "The Concept and Measurement of a Hierarchy of Product Characteristics," in William Perreault (Ed.), Advances in Consumer Research, Volume 4, Atlanta: Association for Consumer Research. 302-307.

Maynes, E. Scott (1976). Decision-Making for Consumers. An Introduction to Consumer Economics. New York: MacMillan.

Sproles, George B. (1977). "New Evidence on Price and Product Quality." Journal of Consumer Affairs, 11, 63-77.