

The Economics Of Status: How Relative
Deprivation Affects The Demand For Apparel

Horacio Soberon-Ferrer, The University of Maryland

This paper analyzes the effect of social status deprivation, on the demand for apparel. An analytical model that incorporates the concept of relative status deprivation and which is also consistent with standard axiomatic consumer theory is utilized. The results of the empirical analysis validate the model's hypotheses that lower status households will have higher demand for apparel, as well as a larger income elasticity as compared to higher status households.

INTRODUCTION

Status seeking has long been recognized as a major influence in the behavior of consumers. Sociologists as well as Economists have addressed the issue of the impact of status seeking on the demand for "luxury" goods. Examples of the interest of sociologists can be traced back to Max Weber (1968). Sociologists have traditionally explained the difference in demand patterns among different social groups in terms of basic motivations, which they assumed would be different for different groups of people. Some of these motivations were given highly descriptive terms such as "impulse renunciation" (a characteristic of the middle class), "impulse following" (a characteristic of the lower class), "compensatory consumption" (a means to make up through the consumption of a luxury good the deficiencies in an otherwise lacking existence) (Davis and Dollard, 1948).

Early Economists also recognized the importance of Social Status as a determinant of economic behavior. According to Becker (1974), Bentham listed among the determinants of wants the pleasures of a good name and Marshall stressed the influence on productive economic activities of the desire for distinction. Thorstein Veblen (1899), one of the founding fathers of the American Institutional School theorized, that a person's consumption behavior is shaped in an interdependent context where the consumption of a good by an individual depends as much on the intrinsic value of the good to the individual as it does on the way that

such consumption alters the perception that of this individual society has. Unfortunately Veblen's observations and theory have not been as popular among Neoclassical Economists as they have been among other Social Scientists; probably because he never bothered to express his theory within the context of orthodox economic modeling. He as a member of the Institutionalist school did not care very much for the highly axiomatic structure of Economics as a discipline. Becker (1974) for instance, refers to him as a sociologist. According to some authors (Becker, 1974; Frank 1985) more recent attempts to include attributes of others to explain economic behavior such as "bandwagon", "relative income", "snob" effects, have not been unified under an encompassing theory, nor have they captured the dominance of social interaction.

New theoretical developments such as Becker's concept of "social income" (Becker, 1974), and Frank's (Frank, 1985b) fit of Veblen's theories into the theoretical framework of utility maximization, have rekindled new interest in the formal study of models where behavioral interdependence by utility maximizing rationally-behaved individuals is the norm rather than the exception. One such type of behavior is status-seeking.

In this paper I will apply some of the concepts mentioned above, to study the effect of status-seeking on the demand for apparel in the United States. First I will use a theoretical framework, then I will propose an empirical model that, I hope, will corroborate the hypothesis set forth by the theoretical construct.

THEORETICAL FRAMEWORK

Following Davis' (Davis, 1959) theory of Relative Deprivation, suppose that we have a population that can be partitioned in one or more ways into different classes, according to a "value" on which there is consensus among the population. (e.g. young vs. old, wealthy vs. non-wealthy). This partition will then divide the population into deprived and non-deprived. When a person (ego) compares

himself with another (alter) and perceives alter to have a larger degree of deprivation, then ego will experience utility in the form of "relative gratification". On the other hand if ego perceives alter to be in a less deprived position, then ego will experience disutility in the form of "relative deprivation". Ego's membership in a particular relatively non-deprived category provides utility to him only when he is able to identify alter as belonging to a relatively deprived category. Economic theory predicts that he will spend resources to identify alter as belonging to such group, and the amount he is willing to spend is directly related to his degree of relative gratification.

One common way of partitioning society is in terms of Social Class. For the purposes of this paper I will use Albert Reiss' concept of Social Class (Reiss, 1961) that is centered on the individual's occupational role, as reflected in the individual's command of human and financial resources, decision making authority, opportunity for personal fulfillment and satisfaction through upward mobility, and service to society. In as much as these things reflect what society regards as important, this partition criterion will divide the population in groups among which a hierarchy of relative deprivation will exist.

Again, since the utility derived from relative gratification is exploited only when membership in the different hierarchies is known, resources will be used to identify individuals with their hierarchical status. In a society with a few members, continuous social interaction makes it possible for its members to identify the social position of everybody else economically (that is spending as few resources as possible in this activity). An example of such behavior could be gossiping which is more common in small social groups. However in larger societies, this method would be very costly, so signaling devices are used. A group of such signaling devices is made up of "positional goods". Positional goods are according to Frank (Frank, 1985b), "those things whose value depends relatively strongly on how they compare with things owned by others", that is those goods whose consumption is going to determine your perceived position in the deprivation hierarchy. Since ego and the members of his group can not force other members of a relatively deprived group to consume a positional good that will identify them as members of a

relatively deprived good, the option left to alter's group is to distinguish itself by consuming a differentiating basket of positional goods. One such good being apparel.

The demand for apparel in the United States has been extensively studied (Dardis, et.al.1981;Hager, and Bryant, 1977;Norum, 1989; Winakor,1989; Deweese, 1987;Nelson, 1989). The theoretical approach to these studies has been either the traditional utility maximization consumer theory, or the household production function theory as proposed by Becker. These approaches have been lacking in that the importance of apparel as a signaling device, i.e, a positional good has been either incorporated into the all encompassing black box called "tastes", or just ignored.

The above mentioned omission is no small thing. For the average individual, expenses on apparel would be minimal if he/she did live in a Robinson Crusoe island. He/she would not have to worry about "looking good", "making a good first impression", etc. That the positional nature of clothing is common knowledge can be proven by the way Madison Avenue advertises apparel.

The apparel consumer faces the following utility maximization problem:

$$\text{Max } U = U(X, Y, \Phi(X))$$

$$\text{S.T. } P_x X + P_y Y = M$$

Where: X=consumption of apparel,
Y=Consumption of other goods,
 $\Phi(X)$ =Status provided by
consumption of apparel.
 $\phi(X) = \int \phi(X) dX,$

From the above discussion we can think of status as an ordinal relationship. Then $\phi(X)$ can be seen as the percentile positioning in the population which is achieved through the consumption of apparel. Thus $\int \phi(X) dX$ is the density that generates such ranking when x_0 = subsistence level consumption of apparel, and x_n = the amount consumed. The solution to the maximization problem is given by²:

$$\frac{MU_x + \phi(X)}{MU_y} = \frac{P_x}{P_y} \dots \dots \dots (1)$$

² For simplicity of exposition, the utility function is assumed to be strongly separable in X, Y, and $\phi(X)$.

Following the principle of diminishing marginal utility, changes in utility due to an upward move in the status ladder will be an inverse function of the degree of relative deprivation. Thus we can expect the demand for apparel to vary directly with the degree of relative deprivation. That is, $\phi(X)$ becomes smaller as deprivation decreases, and so does the demand for apparel. An inspection of equations (2) and (3) makes the above argument clear:

$$P_x = \left[\frac{MU_x + \phi(X)}{MU_y} \right] P_y \dots\dots\dots(2)$$

$$P_x = \left[\frac{MU_x}{MU_y} \right] P_y \dots\dots\dots(3)$$

Equation (2) represents the demand for apparel when apparel is a positional good. Equation (3) represents the demand for apparel when apparel is not a positional good, i.e, $\phi(X)$ has become null.

The hypothesis implied by the model is:

H1: A person who is relatively deprived of status will have higher demand for apparel relative to the nondeprived counterpart.

METHODOLOGY

To test the working hypothesis it is necessary to estimate an empirical demand model which allows for variations in social status across individuals. To this end a variable which can be used as a proxy to indicate an individual's social position has to be employed. The Socio-Economic Status Index (SES), as developed by the Bureau of the Census (Bureau of the Census, 1960) will be used in this instance.

The SES ranks 3-digit level Census Occupational Titles. The ranking is done by averaging for each occupational title the median income and education of its membership. These median averages are then used to rank occupations. Socioeconomic classes are then created by partitioning the population of ranked occupations into sextiles (for this study). Thus an individual will be assigned to a particular group depending on its occupation.

The above method is consistent with our definition of social class as well as

with the concept of relative deprivation, in as much as the higher ranked occupations are the ones that are held in higher esteem by society as reflected by their command of financial and human resources.

Previous research Dardis, et.al. 1981; Hager, and Bryant, 1977; Norum, 1989; Winakor, 1989; Deweese, 1987; Nelson, 1989), suggests groups of variables that are important determinants of the demand for apparel, among these are: Family composition, geographical region, race, house tenure, occupation and working status, and prices and income. These variables will be used except for prices, which will be assumed constant given the cross-sectional nature of the data. Also given that education enters into the demand structure through its role as the determinant of occupation, and since our SES rankings are based on occupation, there is no need to enter education as an explicit regressand, even though it will be implicit in the SES variables.

The demand equation to be estimated is:

$$LAPPAR = \beta_0 + \sum \beta_i LTOTEXP + \sum \beta_j F + \sum \beta_k H + \sum \beta_l R + \sum \beta_m S + \beta_n ABOVEMED + \beta_o BLACK + \epsilon$$

Where: LAPPAR = Log of apparel expenditures.
 LTOTEXP = Log of total expenditures.
 F = Family Variables.
 H = Housing tenure related variables.
 R = Geographical region variables.
 S = Socioeconomic status variables.
 ABOVEMED = Reflects a household with income above the median relative to its own SES.
 BLACK = Household headed by a black person.

The family variables include the log of the age of the reference person (LAGEREF), the log of family size (LFAMSIZE), categorical variables to indicate: A family with no children (NOCHILD), a family with children (CHILD), a female headed household (FEMHEAD), a household where the wife works part time (WWIFEPT), a household where the wife works fulltime (WWIFEFT), and a household where the head has retired (RETIRED). Previous research generally indicates that the signs for these variables will be:

Negative for LAGEREF: Because apparel is a durable an inventory tends to accumulate through a person's lifetime, at least for items which are not as fashion or body-change sensitive such as overcoats, as this inventory grows the need to add to it through an expense decreases. From an status seeking point of view a negative sign should also be expected, as a person goes through life the need to signal his status through positional goods will decrease because as a person ages its geographical mobility diminishes and so the person has had more time to establish its relative position through other means. A positive sign is expected from LFAMSIZE, a larger family has larger needs and our dependent variable is household based rather than individual based. A married couple is expected to spend less than single persons, even when there are no children (NOCHILD) because they have already selected a mate and apparel as a positional good loses some of its attractiveness, one of the benefits of signaling a high social position is the attractiveness of such position to potential mates (Frank, 1985). It is expected that families with children (CHILD) will spend less in apparel than single people when we control for family size. Families where the wife works are expected to show higher apparel expenses than non working wife households (Dardis, Soberon-Ferrer, Tsay, 1989).

Housing variables are expected to show that demand is lower for households who are making mortgage payments on their home (MORTGAGE) than those who own their home but have no mortgages, partly because the mortgage payment reduces their budgeting flexibility as well as their disposable income. The demand by those who rent is expected to be higher than those who own without a mortgage. The reason is that home ownership confers status in our society, thus homeowners being relatively less status deprived than renters do not value the positional ability of apparel as highly as renters (principle of diminishing marginal utilities).

Regional variables are supposed to show the effects of conditions which are geographically determined, such as weather. Thus one would expect that households located in regions where climatological conditions make necessary to own different summer and winter outfits will show higher demand for apparel. Rural areas where the need for positional signaling is reduced because of low population density will show lower demand.

We have six socioeconomic status variables to indicate membership in any of the classes, these are: HHIGH, LHIGH, HMED, LMED, HLOW, LLOW, which are listed in descending order. The leftout category in our estimation will be LLOW, thus all comparisons are made with regards to this the relatively most deprived category. The hypotheses put forth in the previous section imply that the signs for these variables be negative, i.e, demand will be lower for each of the other categories.

To estimate this demand model a double log model specification has been selected. The reasons for the choice are: a) A double log specification has been the functional form specification of choice for previous research. Thus the estimation results of this effort can be compared to that previous research. b) It is convenient, the estimated coefficients can be directly interpreted as elasticities. c) It provides good fit, research using this same data set (Chern and Soberon-Ferrer, 1987) used the Box-Cox transformation to obtain the best fitting functional form. The income elasticity provided by the Box-Cox transform is very similar to the one obtained here.

The method of estimation was ordinary least squares (OLS). It is known that if the error terms in the regression model are non-spherical, OLS is theoretically inferior to Generalized Least Squares (GLS) since the GLS estimates are best linear unbiased. For this estimation problem, there is a possibility that heteroskedasticity might be a problem, since it is a cross-sectional analysis (Green, 1990) that involves a family spending dependent variable (Prais and Houthaker, 1955). This possibility was explored. Heteroskedasticity was found to be present, but not of a large magnitude. According to Griliches and Rao (Kennedy, 1985), the nonsphericalness of the error terms must be quite severe to make the estimable generalized least squares estimators superior to their OLS counterparts. So OLS was used, however instead of using the usual t and F tests for significance, which would no longer be valid because the OLS estimated variance-covariance matrix of the estimates is incorrect and produces biased results, an alternative estimator for this variance-covariance matrix proposed by White (Green, 1990) which is robust to heteroskedasticity problems was used to compute the appropriate t-tests. To test for the significance of groups of variables, the Wald test was used. This test is

also robust with respect to non-spherical disturbances (Green,1990). Results are presented in tables 1 and 2.

Table 1: Ordinary Least Squares Results Corrected for Heteroskedasticity

Variable	Coefficient	T-ratio	Pr(t:>x)
INTERCEPT	-4.88108	-13.303	0.00000
LTOTEXP	1.29118	36.385	0.00000
WELFARE	0.05535	0.729	0.46598
ABOVEMED	0.16929	5.649	0.00000
LFAMSIZE	0.09809	1.856	0.06342
LAGEREF	-0.28962	-6.065	0.00000
NOCHILD	-0.11693	-2.050	0.04038
CHILDREN	-0.16022	-2.040	0.04130
RETIRED	-0.05187	-0.847	0.39725
FEMHEAD	0.49129	7.573	0.00000
WWIFEPT	0.10156	2.668	0.00763
WWIFEFT	0.08615	2.593	0.00951
MORTGAGE	-0.08354	-2.173	0.02978
RENTER	0.08128	1.825	0.06807
NORTHC	0.14808	3.895	0.00010
NORTHE	0.13270	3.325	0.00089
SOUTH	0.02637	0.650	0.51575
RURAL	0.00696	0.119	0.90557
HHIGH	-0.30866	-3.846	0.00012
LHIGH	-0.23302	-4.278	0.00002
HMED	-0.10083	-2.398	0.01647
LMED	-0.20046	-5.036	0.00000
HLOW	-0.06960	-1.837	0.06615
BLACK	0.16835	3.205	0.00135
R ² = 0.56		N=3770	

Table 2: Wald Tests for Significance of sets of Variables

Variables	Wald Statistic ¹
Family	120.23 ²
Housing	19.65 ²
Region	24.15 ²
Social Status	32.17 ²

¹The Wald Statistic follows a Chi-Sq. Distribution with d.f. =Number of restrictions.

² Significant at better than .001

The data used to estimate the model come from the 1980-81 Bureau of Labor Statistics' Consumer Expenditure Survey (CES), the sample used represent a subsample of 3769 households who completed a full year of expenditure reports. The decision to use households with a full year's worth of data, rather than the quarterly samples reported by BLS, rests on the assumption that clothing consumption might not be randomly distributed throughout the year but may respond to seasonal stimuli (such as end of summer sales, etc.). The year of data reported does not necessarily correspond to a calendar year (January-December) but for example it might go from the second quarter of 1980 to the first quarter of 1981. The assumption that prices were constant is necessary since the data has been aggregated and we do not know the average price paid for the bundle of goods (apparel) purchased, since the parts of the bundle were bought at different times. However this assumption is not farfetched as 1980-1981 was a period marked by recession, and by very moderate change in prices.

ANALYSIS OF RESULTS

Since the estimated equation has a double log specification the coefficients of the continuous variables can be interpreted as elasticities. In order to interpret the coefficients of the dummy variables as differences in consumption it is necessary to use the following transformation:

$$\Delta\% = e^{\beta_1} - 1$$

Where: $\Delta\%$ = Percent change in consumption due to dummy variable=1;

β_1 = Coefficient for dummy variable.

The coefficients have the predicted signs for all the variables, however some of them are not significant. Welfare which represents whether a person received welfare or not, shows a positive sign but it is not significant. Being that one would associate receiving welfare with relative severe status deprivation the non significance of the coefficient probably reflects the fact that most welfare recipients are classified in the lower SES groups, which show high significance and the hypothesized sign. This would mean that after controlling for social class being a welfare recipient does not increase feelings of relative deprivation. The implications of this deserve further analysis.

Female headed households show a significantly larger demand for apparel (63% larger than male headed households), this probably reflects that the level of expenditure needed to overcome relative deprivation is larger for females than it is for males. Remember that relative deprivation exists whenever a group is partitioned according to some criteria. Women are more likely than men to be partitioned according to criteria that are dependent upon physical appearance.

Thus this result is consistent with the model. Since apparel can enhance physical appearance we would expect women to consume more apparel than men. Also notice that people who have above median incomes with respect to their own SES groups have larger expenditures (18% larger), than those who are below the median. This is also consistent with the model since we are controlling for social class and apparel is considered a normal good, so people with higher incomes have higher demands.

Black households spend more (18%) than non-black households. The result is not surprising since it coincides with most other research on the demand for apparel. This result has usually been explained in other research in terms of either a history of discrimination in the acquisition of other goods such as housing (Alexis, 1962), or that since the characteristics associated with race are highly visible, when enhanced by clothing, serve to demarcate the boundaries of Afro-americans as an ethnic group (Barth, 1969). Our model would explain the difference in terms of relative status deprivation. Even when SES is controlled for, within a given SES group blacks would be relatively deprived of status as a consequence of real or perceived racial prejudice. This status deprivation increases the marginal utility of apparel thus increasing their demand level.

The coefficients for the Socioeconomic Status variables show that all the socioeconomic groups spend from 26% (corresponding to the highest SES group) to 6% (corresponding to the next to lowest SES group) less in apparel than the most deprived group. This finding is in keeping with the working hypothesis.

Table 2 shows that the groups of variables employed were all significant, this reiterates findings of previous studies, as well as underlines that the explanatory power of SES variables is significant in the

presence of the other variables. To that extent this study reinforces and expands on previous research.

CONCLUSION

This paper has presented a formal model of demand that explicitly incorporates status seeking in the utility function. The concept of relative deprivation is used to theoretically introduce social status induced consumption of apparel. The theoretical model gives plausible explanations to empirically observed consumption patterns. The demand for apparel was found to be larger for female headed households, single people, people who live in rented housing, and households where the wife works. It was also found that people in the lower socioeconomic strata have a larger demand for apparel and that such demand can be explained in a utility maximization context.

Future research in this area could include the analysis of other positional goods, such as automobiles or housing, or services, such as food away from home.

REFERENCES

- Alexis, Marcus (1962). Some Negro-White Differences in Consumption American Journal of Economics and Sociology, 21.pp11-28
- Barth, Frederick (1969). Ethnic Groups and Boundaries Boston: Little, Brown and Co.
- Becker, Gary S. (1974). A Theory of Social Interactions, Journal of Political Economy, Vol.82,no.6 pp1063-1093.
- Bureau of the Census (1960). Methodology and Scores of Socioeconomic Status. Bureau of the Census Working Paper Series, no 15.
- Chern W.S.and Soberon-Ferrer (1987) . Engel Curve Estimation for a Complete System of Aggregate Expenditure Components. Proceedings of the XXXIII ACCI Annual Conference.
- Dardis R, Soberon-Ferrer H, Tsay Y. (1989) Determinants Of Household Expenditures for Services AACI Conference Proceedings 1989.

- Dardis, R. Derrick, F. and Lehfeld A. (1981) Clothing Demand in the United States: A Cross Sectional Analysis. Home Economics Research Journal, Vol 10, no 2. pp 212-221.
- Davis, A and Dollard J. Children Of Bondage, Washington D.C. American Council on Education, 1948.
- Davis, James A. (1959). A Formal Interpretation of the Theory of Relative Deprivation, Sociometry, 22, pp280-296
- Deweese Gail (1987). The Impact Of Married Women's Employment On Household Expenditures For Clothing. PhD dissertation. Virginia Polytechnic Institute and State University.
- Frank, Robert H. (1985). The Right Pond. New York. Oxford University Press.
- Frank, Robert H. (1985b). The Demand for Unobservable and Other Nonpositional Goods, The American Economic Review 1985. Vol 75 no 1. pp101-116.
- Green, William (1990). Econometric Analysis, McMillan, New York
- Hager C. J. and Bryant K. (1977). Clothing Expenditures of Low Income Rural Families. The Journal of Consumer Affairs. Vol 11, no 2. pp 127-132.
- Kennedy Peter (1985). A Guide to Econometrics, MIT Press. Cambridge, Mass.
- Nelson Julie A. (1989). Individual Consumption Within the Household: A Study of Expenditures on Clothing. The Journal Of Consumer Affairs. Vol 23, no 1. pp 21-44
- Norum Pamela S. (1989). Economic Analysis of Quarterly Household Expenditures on Apparel. Home Economics Research Journal. Vol 17 no 3. pp228-240.
- Prais, S.J. and Houthtakker, H.S. (1955). The Analysis of Family Budgets, The University Press, Cambridge, Mass.
- Reiss Albert J. (1961) Occupations and Social Status, The Free Press of Glencoe, New York, 1961.
- Veblen, Thorstein. (1899). The Theory of the Leisure Class. New York, McMillan.
- Wagner Janet (1986). Expenditures for Household Textiles And Textile Home Furnishings: An Engel Curve Analysis. Home Economics Research Journal Vol 15. no 1. pp21-31.
- Weber Max (1968). Economy and Society: An Outline of Interpretive Sociology. New York. Bedminster Press, 1968.
- Wheaton, William, C. (1977). A Bid Approach to Housing Demand. Journal of Urban Economics, Vol 4, pp200-217
- Winakor Geitel (1989). The Decline in Expenditures for Clothing Relative to Total Consumer Spending, 1929-1986. Home Economics Research Journal, Vol.17 no 3, pp195-215.