The Frequency of Consumer Expenditure: An Empirical Analysis

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ABSTRACT

How does the observed pattern of household purchases vary, as we extend or shorten the period of observation? Over the course of a year, how often do households tend to purchase certain goods? These questions have implications for the empirical measurement of consumption, for the econometric treatment of zero expenditures, and for survey design and data imputation. An empirical analysis of data from the U.S. Consumer Expenditure Survey, Interview Survey, from 1987-1989, reveals that there is considerable heterogeneity across disaggregate goods and across households in the frequency of expenditure. Issues of data quality are discussed.

KEY WORDS: consumption, demand, frequency of expenditure, zero expenditures, U.S. Consumer Expenditure Survey, data quality

I. Why Study the Frequency of Expenditure?

Most economic studies of consumer behavior focus on how much people spend on particular goods, over a given period of time. In this paper, in contrast, the question of the level of expenditure is temporarily set aside, in order to turn attention to the period of time over which expenditure is defined. Looking only at the question of whether individual households do or do not purchase particular goods during a given time span, how does this pattern vary as we change the observation period from one month to three months, or to a year? Over the course of a year, in how many months or quarters, on average, do households spend on a particular good? These questions will be investigated using Consumer Expenditure (CE) Survey, Interview Survey, data from 1981-1989.

While the frequency of expenditure is of interest in its own right, in describing one dimension of household behavior, it also has implications for the study of a wider range of economic and statistical issues.

First, economic and econometric interpretation of expenditure data depends on the time period of observation. Most theoretical economic models are formulated in terms of an agent's *consumption,* not an agent's *expenditure.* While consumption is usually conceived of as a relatively smooth flow, expenditure events are discrete and take place at specific points in time. As the time period of observation of expenditure gets longer, we are more likely to get a less noisy measure of consumption. This point is illustrated in Nelson (1994), which shows, using CE data, how the use of a three-month measure of consumption as contrasted to a one-month measure dramatically reduces the estimated standard errors associated with a measure of the effect of changes in income on changes in consumption. Lengthening the time period is not costless,

however, even in a modeling sense. As the time period gets longer, we risk losing the ability to analyze changes in the economic fundamentals which create changes in consumption behavior.

Second, econometric problems arise when we observe *non*-purchase of a good, that is, expenditure on any particular good equal to zero. Such a zero expenditure may be due to misreporting, or may represent a "corner solution" where a consumer chooses not to consume at given prices and income, or may represent underlying tastes, such that a consumer would not consume the particular good at any price or income. But it may also represent infrequency of purchase, that is, the case in which a household usually consumes the item, but is not recorded as making expenditures for it within the constraints of the length and timing of the survey. For example, a household might be asked about something they normally purchase every other month during a nonspending month, or asked in the winter about something they normally purchase in the summer. Appropriate econometric treatment of observed zeros depends on which of these many factors is thought to be the cause (e.g., Blundell and Meghir 1987; Deaton and Irish 1984; Kay, Keen, and Morris 1984). Yet in the literature to date, the decision about how to categorize observed zeros has nearly always been made on a priori rather than data-informed grounds. The information in this paper will help to empirically distinguish the infrequency of purchase case from the cases of misreporting, corner solutions, or underlying tastes, in one data source.

Third, the frequency of expenditure should be, and often is, a factor in survey design. A critical number of observations (for statistical purposes) of purchases of a certain type can be gathered. with a shorter survey, the more frequently the purchases are commonly made. Infrequent purchases require a longer time frame. The U.S.

Consumer Expenditure Survey is already divided into two parts, for this reason. While the Diary Survey collects data on many frequently purchased goods (like specific food items) using a two-week diary, the Interview Survey collects data on less-frequently purchased goods (as well as global estimates of some smaller items such as food expenditure) using interviews that cover three months, and which are repeated for up to a year. In contrast, the United Kingdom's Family Expenditure Survey largely uses a two-week diary, but supplements this with information on certain goods known to be purchased less frequently.

Lastly, the frequency of purchase presents problems for the data user who would like to impute missing observations. For example, some households do not complete the full set of CE interviews which would yield data on a complete year of expenditures. While many users of this data exclude households that are not full-year (which may lead to certain biases), some researchers estimate full-year expenditure by appropriately grossing up those interviews which are reported (see for example, Betson 1990, Ferreira and Buse 1993, Rubin et al. 1990). While this grossing-up procedure is probably not misleading for goods whose purchase is frequent and habitual, applying this to goods which are purchased infrequently is more problematic. To take an example, while it is plausible that the household's purchases of food during a missing interview quarter are much like its purchases in non-missing interviews, it is less plausible that its purchases of automobiles or seasonal vacation travel can plausibly be so imputed. This paper provides information for finer distinctions along these lines, for goods somewhere on the continuum between food and vacations or automobiles.

Section II describes the CE survey data used in this study. Section III contains the results of the empirical study. Section IV investigates the extent to which certain

data problems may add qualifications to the analysis. Section V concludes.

II. The U.S. Consumer Expenditure Survey

The data used in this paper are from the Interview portion of the Consumer Expenditure Survey (CE), conducted by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). Beginning in 1980, this survey has been conducted on an ongoing basis, with households introduced into the sample every month, interviewed up to five times, and then dropped from the sample on a rotating basis. The first interview is used solely for bounding purposes (that is, to prevent the respondent from "helping out" the interviewer by reporting purchases that occur before the desired sample period), and the data from this interview is not released for research use. Each of the subsequent four interviews collects data on expenditure types and amounts on a threemonth recall basis. For some categories of goods, households are also asked to report the specific month of purchase. Households who complete the full sequence of surveys, then, have recorded a full year of information on expenditures in three-month, and for some goods, monthly, increments. Increments finer than one month are not available in these data. Because the households begin and end at different times, survey years and interviews do not usually correspond to calendar years and calendar quarters. In addition to information on expenditures, the survey gathers information. on the composition of the "consumer unit" (roughly equivalent to, and henceforth referred to, as a "household"), employment, income, and other socio-economic variables.

Roughly 7,000 households begin the survey during a calendar year; of these, somewhat more than half usually complete all the interviews. A recent reorganization of the publicly released data for 1980-1989 allows household-level data to be easily

followed across interviews (Nelson 1992). Because the number of disaggregate expenditure records exceeds one million for each year, for tractability this paper uses data only from households whose last interview took place in 1988 or 1989 (so their expenditures may have taken place in 1987, 1988, or 1989). There were 7667 households in this period who completed all interviews, and hence provide information on a full year of expenditures.

For coding purposes, the types of goods purchased are matched with a set of over four hundred Universal Classification Codes. Such codes can be very fine, as for example, distinguishing between portable and non-portable dishwashers and between pants and shorts. For the purposes of this study, goods are more highly aggregated into sixty categories, and then into nine categories, following the categorization scheme used in preparation of the U.S. Consumer Price Index.' Data on gift purchases (for persons inside or outside the household) are included in each category.

III: Expenditure Frequencies

Table 1 presents summary statistics on household purchases on sixty categories of goods. Column (a) shows the percentage of the 7667 households who made a purchase in the category sometime during their survey year. The percentage of households who report a purchase during as interview (3-month) period is also of interest. Column (b) reports the average, over interviews two through five, of the percentage of households reporting a purchase in this part of their interview sequence.

The categories are listed in order of "habitualness," which is defined as the ratio of column (b) to column (a). That is, given that one purchases the item during the year,

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[1]A complete description of the aggregation scheme can be found in Nelson (1992).

"habitualness' is higher the more regularly purchases are made during the year. Looking at line 3, for example, 99.2% of households report paying for piped gas and electricity during the year, and nearly everyone who purchases these at all, reports purchasing them at every interview (on average, 98.3% in each interview). Line 6, rent of dwelling, is an example of a service which is not purchased by the majority of the sampled households (only 29.5% of the sample purchase over the year), but which is a habitual purchase for the minority who constitute purchasers (28.1% of the sample report payment in an average interview). Moving to the end of the table, it is no surprise that purchases of new vehicles are distinctly non-habitual. While 11.9% of the households surveyed report a purchase in this category over a twelve-month period, only 2.9% (on average) report such a purchase over a three-month period. Major household appliances and used vehicles, the other major consumer durables, also appear as particularly low on the "habitualness" ranking. (Personal care appliances is a very small category).

For the goods for which information on the month of purchase is available, Columns (c), (d), and (e) report on the average, minimum, and maximum number of households reporting purchases in each calendar month. [3] In addition, columns (f) and (g) name the highest two months of expenditure, for goods for which a seasonal pattern is discernible. If only one month is named, it is a particular outlier; if the data is collected by month but no month is named, the distribution is close to uniform.[4] The

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[2]The average is shown rather than the percentage for each interview, since there is relatively little variation across interviews. Since interviews many cover any three consecutive months, this measure has no seasonality implications. The calculation for interview two, for example, is the percentage of households who report a purchase in their second interview, no matter when--in calendar time--that interview took place.

[3]In contrast to the calculations for the interview column, the monthly columns use calendar time in order to bring out seasonal effects. No distinction is made as to whether the calendar month fell in 1987, 1988, or 1989.

table indicates that monthly payments are the norm for "other utilities and public services," piped gas and electricity, mortgage interest, and auto finance' charges. Presumably this is also true for some other items such as rent, for which only quarterly data is available. For most other goods for which monthly data are available, the likelihood of observing a household making payment for it during a month is substantially lower than the likelihood of observing a payment during a three-month period or a year. Strong seasonal increases can be observed for various reasons: December holiday buying (for example, for all of the apparel and footwear categories, other housefurnishings, watches and jewelry); winter weather (for fuel oil); summer vacations (lodging while out of town); and the beginning of school terms (girl's and boy's apparel and footwear, tuition, lodging at school). The reasons for other seasonal swings, such as the upswing in property taxes (line 47) in October and November, or in car sales (lines 57 and 60) in spring and summer, are less obvious, though there may be behavioral or institutional reasons far this not known to the author.

Tables 2 and 3 examine the data from a slightly different perspective. Rather than taking the time period as the unit of analysis and counting up households, the household is taken as the unit of analysis, and the number of purchase occasions is counted up.[5] Taking only those households who purchased at some time during the year, what can we say about the frequency of purchase?

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[4]Specifically, the two highest months containing at least 9% of the total purchase occasions in the year are named. A uniform distribution would have 100%/12 or 8.33% in every month.

[5]The number of purchase occasions" is defined here in terms of the shortest observable time frame, rather than in terms of numbers of actual market transactions. Since we do not observe the timing of transactions over periods shorter than a quarter (some categories) or a month (other categories), it makes no difference to the analysis whether a "purchase" required one or twenty checks or trips to the store. A household can report a maximum of tour quarterly or twelve monthly "purchases," as the term is used here.

Table 2 reports on the number of interviews in which a purchase was reported, for households who reported some purchase during their survey year. Column (a) reports the mean number of interviews in which a purchase was recorded. The listing of goods is ordered by this column, and is nearly identical to the ordering of the same goods by "habitualness" in Table 1. The modal number of interview-purchases is reported in column (b), dropping from a value of four for the more habitual goods, though a short mixed section, to a value of one for less frequently purchased goods. Public transportation (line 23), it can be noted, includes not only intra-city transportation that might be expected to be purchased frequently, but also airfares and inter-city bus and train, for which a modal interview-purchase of one is not unbelievable.

Columns (c) through (f) exhaustively describe the frequency of purchases, measured at the interview level. For example, only .1% of household record purchasing food at home (line 1) during only one interview, while recording no purchases in that category for the remaining three interviews. This .1% case probably reflects bad data. Small percentages report food purchases in only two or only three interviews. More comfortingly, 98.8% of food at home purchasers report purchasing food in all four interviews. Column (g), which reports the number of households reporting purchase at some point during the year, confirms, at line 1, that 100% of the 7667 households in the sample report food at home purchase at some time during the survey year.[6] Scanning down the table, one gets an impression of how the patterns of purchasing vary by household. While more than half the (purchasing) households report purchasing the goods represented by lines 1-10 in every interview, a smaller percentage purchase in only

[6]The number in column (g) of Table 2 is the denominator for Table 2, columns (c)-(f), and the numerator for Table 1, column (a).

three interviews. While it is not a monotonic decrease in all cases, the distribution tends to be skewed to the left: in many cases a few less households reports purchases in two interviews than in three. and still fewer in only one interview than in two. Starting with line 11 (alcoholic beverages at home), less than half the purchasers purchase in all four interviewers. Continuing down the table, the distribution across columns (c)-(f) becomes progressively more uniform, and then finally more skewed towards the right as a single purchase becomes the mode. Except for at the extreme top and bottom rows of the tables, households appear to be heterogeneous in their behavior with respect to purchase frequency.

Table 3 performs a similar analysis for goods categories for which monthly data is available. Columns (a) and (b) present the mean and modal number of months in which purchases were reported. To save space, the frequencies of purchase are reported for only selected numbers of months (one, three, six, nine, and twelve) in columns (c)-(g). Column (h) reports the number of households reporting at least one purchase at any time during the year. With one exception, column (b) indicates that the modal number of months in which a purchase is recorded is either twelve or one. The case of women's apparel, for which the modal number of purchases is five, seems to be exceptional, both in having a mode in the middle of the distribution and in having a higher mean number of purchases than all the other apparel categories. While, as in the previous table, it is only at the very top and bottom that households act in anything like a homogeneous manner, purchasing in a single month out of the year appears to dominate for most of the middle section of the table, with a dramatic trailing off for number of purchases above three.

Tables 4 and 5 report the same information as Tables 1 and 2; except with the

expenditures now aggregated into only nine categories. Transportation, for example, includes vehicle purchases and rentals, motor fuel and motor oil, repairs, auto insurance and finance charges, miscellaneous charges such as tolls and registration, and public transportation. Shelter includes rent (for renters), household or tenants' insurance, expenditures on home maintenance, household fuels and utilities, lodging out of town, mortgage interest (for owners) an a few minor other categories. [7] As one would of course expect, non-purchase is less frequently observed the broader one defines the category. Yet even for the broad category of household furnishings and operations (which includes furniture and appliances, textile and non-textile housefurnishings, home business machines, TV and sound equipment, and housekeeping services) where 95.6% of households report some purchase over the survey year, only 80.3% report a purchase over an average interview quarter, and only 61.6% report purchases in all four interview quarters.

IV. Data issues

Tables 1 to 5 are only a valid indicator of consumer behavior to the extent that Consumer Expenditure Survey data, as publicly released, accurately captures this behavior. The (usual) problems of data gathering and dissemination suggest some caveats and cautions in regard to the above analysis.

[7]Person who own homes without mortgages probably make up most of the nonpurchasers of "shelter," since mortgage interest is the major component of shelter costs for homeowners by the definition used here. This is obviously not an accurate way of measuring shelter *consumption.* The CE survey also contains information that can be used to calculate estimates of annual rental equivalence for many households, for studies where a measure of consumption rather than of expenditure is required.

Data, Processing

As with most large data sets, the CE Interview data gathered on the questionnaires is put through a series of edits and checks prior to public release. While a thorough explanation of the processes applied to the CE data is beyond the scope of this paper, it should be noted that these processes may be influencing the frequency of expenditures, and especially *monthly* expenditures, reported in these tables. In fact, for a few cases (mortgage interest and auto finance charges among them) monthly payments are actually computed by BLS from other information (the date and terms of the loans). While for the vast majority of "monthly" goods, the month of expenditure is explicitly asked, if a respondent is vague about an amount spent, or the month in which it was spent, or the specific goods category on which an expenditure was made, the BLS will often impose (plausible) assumptions. A substantial percentage of expenditure records are flagged to note modification by computation (simple calculation), allocation (assignment of a vague response to more specific disaggregate groups), or (more rarely) imputation (of an expenditure value). While these processes may include assigning vaguely reported expenditures to random months (or one-third to each month) within an interview, a study by researchers at the BLS showed that such imputations of reference months occur in less than 1% of the expenditures recorded by month (Silberstein and Jacobs 1989). These data processing concerns should have. less effect on the reporting by interview quarter, however, since allocations are made only within, and not across, interviews.

Sample Selection

The use in this study of only those households who completed all interviews

means that the frequencies may not be representative of the full sample. Households may fail to complete all interviews if they decide not to cooperate, if they move, or if they are away on a trip at the time of an interview. A comparison of full-year vs. partyear participants (Nelson 1992) shows that full-year reference persons are more likely to be older, to be homeowners and to have somewhat higher income than are part-year reference persons. It is unclear what biases, if any, this selection has imposed on Tables 1 to 3.

Quality of Response

The way in which the data are released makes it impossible to distinguish true zero expenditures from non-response. If the household reports purchasing the good then there is a record reporting this purchase; if the household does not report the good, either because they did not purchase it or because they have forgotten about it or are not taking the survey seriously, then there is simply no record. This may be one factor underlying the dramatic difference between reported numbers of purchases of women's apparel vs. other types of apparel: women are more likely to be the respondents to the survey (Silberstein 1937) and so may have better information about purchases for themselves.

There is little one can do, once the data is gathered, to remedy this problem." If it is thought that poor responses to expenditure questions might be correlated with poor responses to questions about income sources, a variable reporting on quality of income response might be used to select the better responders. The Bureau of Labor Statistics.

[8]The BLS also releases files ("EXPN") that are more detailed than the general files ("MTAB") that form the base for this study, but these files are not standardized across goods categories and the non-response flags are often still difficult to interpret.

codes a household as a "complete income respondent" if they report values for their major components of income. When Tables 1 to 3 were rerun using a subsample of "complete" income reporters only (N=6696), results change only slightly. For example, 86.3% of "complete" income respondents report purchasing entertainment services, compared to 86.2% of the full sample (Table 1); 57.3% of the purchasers in the "complete" subset report purchasing entertainment services in all four interviews, compared to 56.1% (Table 2) in the full sample. A slight shift towards more reporting is observed for some goods, and towards less reporting for others. It seems, then, that income response and frequency of reported purchase are not closely related.

The fact that monthly expenditures are recovered using recall over a three month period may also influence the observed frequency of expenditure. Expenditures three or two months prior to an interview may be more difficult for respondents to remember, than expenditures in the month immediately prior to an interview. This may lead to underreporting in the early months in each interview period. Indeed, in these data a disproportionate number of purchase occasions are recorded as taking place in the last month of each interview quarter, as can be seen for selected categories in Table 6. The first month is the one farthest in the past from the interview date; the third month is the most recent. The sample used is the same as in Table 3, and the percentages are for the sample as a whole. If respondents are reporting entirely accurately, there is no reason to expect more purchases, in the aggregate, in one month than in any other. Note that calendar time is not an issue here, since these months are defined in regard to their relationship to an interview, and an interview can take place any time of the year. In the utilities categories, where the respondents are explicitly asked about monthly bills received, the upward trend with proximity of the interview is

slight. For large irregular purchases, such as vehicles and major home appliances, the trend is somewhat greater, while for smaller irregular purchases the trend can be dramatic. Only 24.5% of purchases of boy's and girl's footwear, for example, are reported as taking place three months prior to the interview, while 45.9% are reported as taking place in the most recent month. Since it is highly unlikely that people tailor their consumption patterns around their interview schedule, poor recording seems to be the cause.

The poor reporting may not always imply underreporting, however. Instead of (or in addition to) forgetting earlier purchases, respondents may "telescope" into the most recent months) expenditures that actually happened earlier. If the problem were pure telescoping, then the expenditure reporting for the quarter as a whole would still be accurate (that is, there would be no overall underreporting) even though the monthly reports are inaccurate. Whether the problem is recall or telescoping, it is likely that the frequencies in the first and second months are underreported, especially the smaller and more irregular the purchase. The reports in the third month may be close to accurate (if there the pattern is due to recall bias) or be overly high (if there is telescoping). The patterns of spending described earlier in Table 3, then, probably in all underestimate the number of months in which many purchases, and especially small and infrequent purchases, occur.

A study by BLS researchers Silberstein and Jacobs (1989) found similar evidence of recall bias and/or telescoping by month, looking at mean ***expenditures*** aggregated over households in 1952-33 CE Interview data. They also investigated whether respondents tended to report more or less expenditure as their length of time in the sample increased. The time in the survey may affect the responses, as respondents

progressively learn how to do the survey and/or tire of doing the survey. Silberstein and Jacobs found that the variation in expenditure reporting with the interview sequence was statistically insignificant in over half the goods categories they examined. For those categories in which aggregate expenditures significantly increased or decreased with the interview number, a variety of patterns (rising with interview number, falling, rising then falling...) was observed, and the degree of change was at most "moderate" (300). The quarterly patterns reported in Table 2, then, are unlikely to be much influenced by time in sample effects.

V. Conclusion

While the CE survey is designed to capture expenditures at monthly intervals for many goods, an analysis of the data suggests that such monthly reports may be unreliable for small and infrequently purchased goods. For economic analysis, then, the data should probably be treated as a panel of monthly observations only for larger purchases. In regards to survey design, there is evidence that three months may be too long a recall period for some goods. Whether or not there is underreporting in expenditures reported at, or aggregated to, a quarterly basis is less clear, depending on whether recall bias or telescoping predominates.

The examination of the reported frequencies of purchase (at either the interview, of more questionable monthly, levels) reveals considerable heterogeneity across goods. An overview of the tables may suggest a multiplicity of (sometimes overlapping) reasons for these varying frequencies of expenditure. Some goods for which there is a steady stream of expenditure correspond to fixed, regular bills (e.g., utilities, insurance, rent); others are necessary nondurables (food at home). The most irregular purchases

are for durable goods (e.g. vehicles, major appliances). In between, we find irregular purchases of semi-durables (e.g. apparel, textile housefurnishings), luxury nondurables (food away, alcohol away, lodging away from home), and goods whose purchase may represent shocks to consumption (e.g. hospital services, home repair services). While the data on monthly purchases was found to be suspect, whether or not a non-purchase in a given quarter represents non-consumption (over a year) or simply infrequency of purchase can probably be reasonably inferred from the tables presented.

The analysis also reveals considerable heterogeneity among households. Goods may be on average purchased with more or less frequency, but within any goods category some households report purchases much more frequently than others. This empirical finding is interesting, since in the (small) frequency-of-expenditure econometric literature (e.g. Blundell and Meghir 1987; Deaton and Irish 1984; Kay, Keen and Morris, 1984), a single, exogenous purchase probability is assumed to be common to all households. Further analysis of this point, at yet at a very preliminary stage, suggests that the usual sharp distinction between corner solutions and infrequency of purchase, which leads to separate treatment of the two issues in econometric theory, may not be empirically helpful. This distinction is itself intimately related to the question of the time period of observation..

TABLE 2

Patterns of spending: Households Reporting Positive Expenditure In Year Only: Quarterly Data

	Category	Mean (a)	Mode (b)	Percent of Households Reporting Expenditures in Exactly X Quarters: One (c)	Two (d)	Three (e)	Four (f)	N (g)
1	Food at home	4.0	4	0.1	0.2	1.0	98.8	7667
2	Motor fuel, motor oil, coolant, etc.	3.9	4	2.3	1.9	2.8	92.9	7133
3	Rent of dwelling	3.8	4	4.7	0.8	3.6	90.9	2262
4	Food away from home	3.6	4	5.2	6.8	12.3	75.7	7258
5	Health insurance	3.5	4	7.3	7.0	13.9	71.8	5210
6	Personal care services	3.5	4	7.1	8.2	13.9	70.9	6979
7	Reading materials	3.5	4	7.3	8.4	13.7	70.5	7026
8	Tobacco & smoking products	3.4	4	9.8	9.1	14.3	66.8	3513
9	Personal insurance other than health	3.2	4	14.1	10.4	12.5	63.0	4671
10	Entertainment services	3.2	4	11.7	12.7	19.6	56.1	6611
11	Alcoholic beverages at home	2.9	4	19.7	15.8	19.7	44.9	4405
12	Ground rent, owned & owned vacation	2.9	4	23.7	12.3	15.1	48.9	219
13	Toys, hobbies, other entertainment	2.8	4	18.8	20.1	24.8	36.3	6158
14	Apparel services	2.7	4	22.4	19.5	19.3	38.9	5843
15	Alcoholic beverages away from home	2.6	4	28.5	19.3	19.0	33.2	4288
16	Vehicle insurance	2.5	2	20.3	30.6	24.3	24.7	5880
17	Auto maintenance & repair	2.4	3	24.4	27.6	28.3	19.7	6020
18	Housekeeping services	2.4	1	30.0	23.7	19.9	26.5	5394
19	Vehicle rental, registration, other	2.4	2	24.1	30.1	25.1	20.7	6505
20	Personal expenses	2.4	1	30.8	23.7	19.0	26.6	5614
21	TV & sound equipment	2.1	1	36.8	28.3	20.9	14.0	4923
22	Household insurance	2.1	1	46.7	19.4	11.0	22.9	3675
23	Public transportation	2.0	1	45.2	24.0	13.8	17.0	3813
24	Tenants insurance	1.8	1	59.7	18.1	6.9	15.3	360
25	School books & supplies	1.6	1	60.2	26.1	10.4	3.3	1920

TABLE 3

Patterns of Spending: Households Reporting Positive Expenditure In Year Only: Monthly Data

	Category	Mean (a)	Mode (b)	Percent of Households Reporting Expenditures in Exactly X Months: One (c)	Three (d)	Six (e)	Nine (f)	Twelve (g)	N (h)
1	Mortgage interest	11.8	12	0.1	0.5	0.4	1.0	95.2	3440
2	Other utilities & public services	11.8	12	0.0	0.3	0.5	1.2	90.6	7608
3	Gas (piped) & electricity	11.5	12	0.1	0.4	1.9	2.4	79.1	7284
4	Auto finance charges	10.1	12	2.2	3.2	3.7	4.2	66.6	3341
5	Prescription drugs	5.4	1	16.6	11.6	6.8	5.5	10.3	5769
6	Women's apparel	5.3	5	10.5	11.2	10.3	6.3	2.7	6556
7	Professional medical services	4.8	1	14.0	13.5	9.4	4.8	2.9	6482
8	Other house furnishings	4.5	1	16.3	13.5	9.6	4.6	1.6	6436
9	Tuition, other school fees	3.8	1	32.3	12.6	3.7	4.0	4.4	2418
10	Fuel oil & other household fuel commod.	3.6	1	26.7	16.2	7.6	2.4	2.1	2047
11	Men's apparel	3.5	1	20.5	17.5	7.2	1.4	0.1	5819
12	Girl's apparel	3.5	1	31.0	12.5	6.1	2.7	0.4	2549
13	Boy's apparel	3.1	1	32.3	12.5	5.9	1.3	0.2	2426
14	Infant's apparel	3.0	1	42.5	10.9	2.9	1.7	3.8	2997
15	Home maintenance & repair services	2.6	1	48.6	11.6	3.5	2.4	3.7	3293
16	Boy's & girl's footwear	2.6	1	30.0	20.9	3.4	0.2	-	2386
17	Lodging while at school	2.3	1	49.4	11.5	2.1	0.8	0.4	243
18	Auto parts and equipment	2.3	1	41.2	15.1	2.0	0.3	0.1	4748
19	Textile housefurnishing	2.3	1	40.7	14.9	2.4	0.3	-	4658
20	Sporting goods, equipment	2.2	1	44.5	12.9	2.3	0.3	-	3200
21	Women's footwear	2.2	1	38.4	17.8	1.5	0.1	-	5047
22	Home maintenance & repair commod.	2.1	1	49.4	18.6	2.4	0.3	0.0	2354
23	Hospital & related services	2.1	1	57.4	10.8	1.6	0.8	1.4	1833
24	Watches & jewelry	2.1	1	45.2	14.3	1.9	0.0	0.0	4026
25	Lodging while out of town	2.0	1	46.8	13.8	1.5	0.2	0.0	3863
26	Sewing materials & Luggage	1.9	1	55.4	10.9	1.6	0.3	-	2305
27	Men's footwear	1.7	1	54.4	12.0	0.3	-	-	3716
28	Property taxes owned & owned vac.	1.6	1	53.6	10.2	-	-	-	4002
29	Furniture and bedding	1.6	1	60.0	9.6	0.1	-	0.0	3307
30	Nonpresc. drugs, med. supplies	1.6	1	65.9	7.5	0.7	0.0	0.2	2715
31	Home business mach., smoke alarms	1.5	1	71.0	6.1	0.4	0.1	-	1818
32	Personal care applicances	1.3	1	79.2	3.0	-	-	-	1382
33	Used vehicles	1.2	1	81.7	3.1	-	-	-	1502
34	Major household appliances	1.2	1	84.5	1.5	-	-	-	1824
35	New vehicles	1.0	1	95.4	0.1	-	-	-	849

TABLE 5

Patterns of spending: Households Reporting Positive Expenditure During Year Only: Aggregate Quarterly Data

	Category	Mean (a)	Mode (b)	Percent of Households Reporting Expenditures in Exactly X Quarters: One (c)	Two (d)	Three (e)	Four (f)	N (g)
1	Food and beverages	4.0	4	0.0	0.0	0.2	99.7	7667
2	Fuels and other utilities	4.0	4	0.1	0.3	0.7	98.8	7641
3	Transportation	3.9	4	1.6	1.8	2.8	93.8	7479
4	Other goods and services	3.8	4	1.6	2.5	6.1	89.7	7584
5	Shelter	3.7	4	2.4	5.6	9.9	82.1	7598
6	Entertainment	3.7	4	3.6	5.0	8.6	82.8	7423
7	Apparel and upkeep	3.7	4	2.9	5.5	13.0	78.6	7519
8	Medical care	3.6	4	5.4	6.7	11.5	76.3	7277
9	Household furnishings and operations	3.4	4	7.1	11.5	19.8	61.6	7333

TABLE 6

Percent of Households Reporting Expenditure

By Order of Month Within Interview

Category	*First*	*Second*	*Third*
Gas (piped) & electricity	33.1	33.7	33.2
Other utilities & public services	33.2	33.4	33.4
New vehicles	32.7	31.5	35.8
Used vehicles	32.1	31.9	36.0
Major household appliances	29.0	33.1	37.9
Home maintenance & repair services	27.7	33.6	38.7
Women's apparel	27.6	32.6	39.8
Nonpresc. drugs, medical supplies	28.0	32.0	40.0
Textile housefurnishing	26.5	31.9	41.6
Watches & jewelry	26.9	29.7	43.4
Boy's & girl's footwear	24.5	29.6	45.9
Housekeeping supplies	19.6	23.5	56.9

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