

Consumer Expenditures for Alcohol in 2000

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In 2000, per capita consumption of alcoholic beverages was 24.9 gallons, mostly in the form of beer (21.7 gallons).¹ That same year, according to the Consumer Expenditure (CE) Survey, the average consumer unit² reported expenditures of \$372 for alcoholic beverages; that is, about \$1 was spent on alcohol for every \$8 spent on food at home.³ Other recent studies have cited similar figures, as well as health and social concerns, as reasons for studying the consumption of alcoholic beverages.⁴ These studies examine either the consumption of a specific beverage by a specific group or the consumption of alcohol in countries other than the United States. By contrast, this article focuses on U.S. domestic consumer expenditures on alcohol in 2000—specifically, the demographic patterns involved, the mean weekly expenditure on alcohol, the probability of purchase of alco-

hol either at home or away from home (such as a drink at a restaurant or bar), and the type of alcohol purchased (beer, wine, or other alcohol, such as whiskey).

The Data

Data for the CE Survey are derived from two sources: The Interview survey, which is a rotating-panel quarterly recall survey, and the Diary survey, in which respondents record all their expenditures during the 2-week survey period. Data from the two sources are integrated into tables for analysis and subsequent publication. The data for this article are taken from the Diary component of the 2000 CE Survey. In the published CE Survey, one item—alcoholic beverages purchased on trips—is taken from the Interview component. However, this item (which is collected solely in the Interview survey) accounts for only about \$34, or less than 10 percent of average total expenditures for alcohol in 2000, so it is safe to exclude it from the current analysis. Using only Diary data also allows the regression results (described later) to be compared with the expenditure data examined herein.

Caution should be exercised in attempting to interpret some of the data shown. Expenditures for alcohol are subject to a great deal of “allocation” during the publication process. That is, when a respondent records “expenditures for alcohol” or “meal at restau-

¹ *Statistical Abstract of the United States, 2002* (U.S. Census Bureau, 2002), p. 130, table 197, “Per Capita Consumption of Selected Beverages by Type: 1980 to 2000.”

² See the glossary at the end of this anthology for the definition of a *consumer unit*.

³ *Consumer Expenditure Survey, 1999–2001*, Report 966 (Bureau of Labor Statistics, April 2003), table A, “Average annual expenditures of all consumer units and percent changes,” p. 3.

⁴ J. R. Blaylock and W. N. Blisard, “Wine Consumption by U.S. Men,” *Applied Economics*, May 1993, pp. 645–51; and Mohamed Abdel-Ghany and J. Lew Silver, “Economic and Demographic Determinants of Canadian Households’ Use of and Spending on Alcohol,” *Family and Consumer Research Journal*, September 1998, pp. 62–90.

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rant, including alcohol,” but provides no details on the type or amount of alcohol purchased, the expenditure is estimated on the basis of the total expenditure reported by the respondent for alcohol or the meal at the restaurant, together with an allocation factor that is in turn based on responses from those who record specifically what was purchased. At the aggregate level, this technique presumably has little impact on total expenditures for alcohol, but it could cause a larger share of those expenditures to be accounted for by either beer, wine, or other alcoholic beverages than is actually the case; in addition, at the individual-record level, a consumer unit might show expenditures for beer, wine, and other alcohol, even though that consumer unit purchased only one of those items. For example, suppose a respondent purchases beer for \$10 and records a \$10 expenditure for alcohol. Then, because the fact that all \$10 went for beer is not recorded, the consumer unit might show expenditures of \$7 for beer, \$2 for wine, and \$1 for other alcohol, assuming allocation factors of 70 percent for beer, 20 percent for wine, and 10 percent for other alcohol. The actual number of records created through allocation as opposed to reporting varies by the type of alcohol purchased. (For example, 43 percent of beer-at-home reports⁵ are the result of allocation, compared with 76 percent of wine-at-home reports and 92 percent of other-alcohol-at-home reports.) Overall, about 46 percent of expenditures reported for specific types of alcohol are created by allocation from general reports of alcohol either at home or away from home.

⁵ The CE Survey uses the terminology “at home” and “away from home” to describe places at which goods are purchased, rather than where they are ultimately consumed. For example, when an expenditure is reported for “food at home,” it means that the food was purchased at a grocery store or similar vendor, rather than at a restaurant, cafeteria, or bar. The food purchased may have been consumed elsewhere—for example, a person buys fruit and takes some to the office for lunch or packs a sandwich for the child’s lunch at school. Even though the food was not eaten in the home, the food was purchased at a grocery store and is therefore

Methodology

This article investigates expenditures in several ways. First, expenditure values and the percent of consumer units that report purchasing alcohol (that is, the percent reporting) are examined for three demographic categories: Income quintile, age of reference person, and sex of reference person for single consumers only.⁶ The analysis is extended through the use of logistic regression, or “logit,” a technique that enables one to predict the probability that an event (in this case, the purchase of alcohol) will occur, given that certain conditions (in this case, demographic characteristics) are held constant. By means of regression analysis, it is possible to isolate relationships between these characteristics and the probability of purchase of some kind of alcohol. For example, the probability of purchasing wine rises steadily with income and increases with age until the reference person is 45 to 54, after which it decreases with age. Given that income also increases with age until the reference person is 45 to 54 and starts to decrease with age thereafter, it is difficult, in the absence of regression analysis, to say which characteristic—age

designated as “food at home.” Similarly, when a person has a pizza delivered from a local restaurant, the amount paid is classified as an expenditure for “food away from home,” despite the fact that the pizza was eaten in front of the living room television. The reason is that the vendor was a restaurant. With alcoholic beverages, the same rules apply. An expenditure for beer, wine, or other alcohol that is purchased from a grocery, liquor, or convenience store is considered an expenditure for “alcohol at home,” even though the purchaser may have taken the bottle of wine to a dinner party or taken the beer to a local park to drink at a picnic or while watching a softball game. In the case of alcohol, however, it is not likely that alcohol classified as “away from home” would have been consumed inside the home, because restaurants and bars usually restrict alcohol purchased to be consumed on the premises. For consistency with the classifications used in the CE Survey, the terms “at home” and “away from home” will be used in this article to describe expenditures for alcohol, regardless of where the alcohol was actually consumed.

⁶ See “Glossary” in Appendix A at the end of this anthology for the definitions of *reference person* and *income quintile*.

or income—is more strongly related to the purchase of alcohol. Logit is used to estimate the probability of purchasing alcohol in general, as well as that of purchasing alcohol at home, away from home, or both. Logit also is used to predict the probability of purchasing beer, wine, or some other alcoholic beverage. (The appendix to this article describes the use of logit in more detail.)

Except for the data in the logit analyses, the data used in this article are weighted to reflect the population. (The reasons why the data employed in the logit analyses are not weighted will be presented shortly.) The data used in the article also are limited to consumer units whose reference person is at least 21 years old—that is, the legal age to purchase alcohol in the United States. (Those under the legal age may be more likely than those who are at least 21 years old to omit expenditures for alcohol from their diaries.) Specific income data (such as mean values and quintile assignments) are derived from complete income reporters only, unless otherwise specified; or best results, families that reported income losses (for example, through self-employed business loss or rental property loss) also are excluded from the sample.⁸

⁷ See “Glossary” in Appendix A at the end of this anthology for the definition of *complete income reporter*.

⁸ The income used in the CE Survey results is found by summing the value of all sources of income reported. When losses occur, the negative income is added to the total (or the loss is subtracted, depending on how one looks at it), which has the result of artificially lowering total income. Sometimes, the losses are large enough to cause total income to be negative. Losses make comparison across consumer units difficult. For example, a family in which one member receives \$50,000 in salary appears to have the same income as another family in which one member receives \$75,000 in income, but in which another member incurs a loss of \$25,000. Both consumer units have \$50,000 in income, according to the survey results, but each may have different spending patterns; the losses may be temporary and anticipated, for example, causing the consumer unit incurring the losses to spend differently than the unit that regularly receives \$50,000 in income. Including the loss could substantially increase the variance for the income data and could also bias parameter estimates in the regression section. For these reasons, consumer units reporting losses are omitted from the sample.

Demographic analysis

By any measure shown in table 1, beer is the most popular form of alcohol purchased by the average consumer unit. Whether one looks at percent reporting or mean weekly expenditure, beer is at the top of the list, both at home and away from home. However, this ranking changes when one looks at the mean weekly expenditure of only those consumer units reporting purchases of alcohol, a figure that can be calculated by dividing mean weekly expenditure by percent reporting. In this case, the largest average expenditure for all consumer units is for wine at home (\$23.29). Other alcohol at home is second (\$19.36), with beer at home a distant third (\$16.39). In contrast, the largest expenditure for alcohol away from home is for other alcohol (\$12.08). The smallest expenditure obtained by using this measure is that for wine away from home (\$9.73).

Income. As one might expect, expenditures for alcohol increase with income. (See table 2.) This statement holds true regardless of the type of alcohol purchased and regardless of whether it is alcohol at home or away from home. What is more interesting is the *rate* of increase with income. For example, while the fifth income quintile spends about 3.5 times as much for alcohol as does the first income quintile, it spends only 2.7 times as much for alcohol at home, compared with more than 7.1 times as much for alcohol away from home. When the types of alcohol purchases are analyzed, the ratios of the fifth to the first income quintile range from 1.6 (for beer at home) to 9.2 (for other alcohol away from home).

The percent reporting follows a similar pattern. For alcohol at home, the percent reporting for the fifth quintile (29.1 percent) is more than double the percent reporting for the first quintile (11.9 percent). For alcohol away from home, the differences across quintiles are even more dramatic, ranging from 6.9 percent for quintile 1 to 25.6 percent for quintile 5. The smallest range is for other types of alcohol at home, which only doubles from the lowest to

the highest quintile (2.3 percent to 5.1 percent). The largest range in absolute terms is for beer away from home (6.1 percent to 22.6 percent). However, the percent reporting other alcohol away from home is still more than 6 times higher for the fifth quintile (11.8 percent) than it is for the first (1.8 percent).

Age. In all cases, expenditures for alcohol away from home rise with age up to a point and then decline. (See table 2.) The pivotal age group is the one whose reference persons are 35 to 44 years old. For alcohol at home, wine follows the pattern, except that expenditures peak for those aged 45 to 54. However, expenditures for beer and other (that is, nonwine) alcohol at home actually decline with age. For beer at home, expenditures range from a high of \$5.48 for the under-25 group to a low of \$0.65 for the 75-and-older group, a decrease of 88 percent over that entire age range. Stated another way, the youngest group spends 8.4 times as much for beer at home as does the oldest group. The percent of those reporting expenditures for beer at home follows a similar pattern: nearly 1 in 4 consumer units in the youngest group report such expenditures, compared with fewer than 1 in 20 consumer units in the oldest group. Most other expenditures for alcoholic beverages follow the same pattern for percent reporting, peaking either for the under-25 group or the 25- to 34-year-old group. The lone exception is wine: the percent reporting expenditures for wine peaks with the 45- to 54 year-old group (13 percent), and the group with the lowest percent reporting is again the 75-and-older group (6 percent). The percent reporting wine away from home is only about 4 to 5 percent for those under 65, but decreases for those aged 65 and older (of whom less than 2 percent report such expenditures).

Singles. Single individuals spend their money differently than do nonsingles. (See table 3.) Interestingly, though, when the data are classified by the sex of the reference person, it becomes clear that single men spend more, on average, than do nonsingles (of both

sexes) for all alcoholic beverages, except wine at home, while single women spend less than non-singles on all alcoholic beverages (including wine at home). The same pattern holds for the percent of consumer units reporting expenditures on alcohol. That is, except in the case of wine at home, single men have the largest percent reporting, followed by nonsingles and then single women. The difference also affects the total percent reporting expenditures for wine generally, but here single men run a close second (10.3 percent reporting) to nonsingles (10.7 percent reporting), with fewer single women reporting purchases (6.2 percent).

Predicted probabilities

Given the similarity in trends for expenditures for alcoholic beverages at home and for those away from home (for example, percent reporting increases steadily with income for both types of purchase), logit is used only to analyze total purchases of beer, wine, and other alcohol once the probability of purchase for alcohol in general is examined by type of purchase. Accordingly, the first set of analyses to follow examines the probability of purchasing alcohol in general. The rest of the analyses examine probabilities of purchasing specific beverages. In other words, what is the probability of purchasing alcohol at home as opposed to the probability of purchasing alcohol away from home? What is the probability that a consumer will purchase both alcohol at home and alcohol away from home, rather than one or the other? What is the probability of purchasing beer, wine, or other alcohol? The results of the logits, used to answer these questions, should be interpreted with caution. Those who did not purchase alcohol may have chosen not to do so for any number of reasons, including the fact that they had enough liquor in the cabinet to last for the week during which they filled out the diary or that they may be persons who choose not to consume alcohol on any occasion at all. Because it is not possible to distinguish "potential" purchasers from "nondemanders" in the Diary survey,

the answers can be interpreted to predict only the probability of actual purchase during the previous week, rather than the probability of actual use (or nonuse) of alcohol by the consumer unit over longer periods.

Also, unlike the data in the previous section, the logit results here are not weighted to reflect the population. Previous experience has shown that weighting logistic regressions for that purpose yields parameter estimates similar to the unweighted results, but with much smaller standard errors. This has the effect of making every parameter estimate appear to be statistically significant. Therefore, to be conservative in the estimates, unweighted regressions are used to estimate probabilities of purchase in this article.

In using regression analysis, a “control group” is standardly identified to serve as a reference point for the analysis. In this article, parameter estimates that have negative coefficients are predicted to have lower probabilities of purchase than the control group, while those with positive coefficients have a higher predicted probability of purchase than the control group. Here, the control group consists of consumer units whose reference person (1) is 35 to 44 years old; (2) reports income in the middle quintile; (3) is a single, white, non-Hispanic male employed as a manager or professional receiving a wage or salary; (4) owns his home, but pays a mortgage; and (5) is living in the urban South. Comparisons with the control group are made by changing one characteristic at a time; for example, in attempting to find the relationship of region of residence to purchases of alcohol, one assumes that all characteristics of the members of the group to be tested are identical to those of the members of the control group (that is, every member of each group is a single, white, non-Hispanic male, aged 35 to 44 years old, with an income in the middle quintile, and so forth), except that the members of the group to be tested live in the Northeast instead of the South. Such comparisons are known as “*ceteris paribus*” comparisons in economics—comparisons in which “all else is held equal.”

General purchases of alcohol. The probability of purchasing alcohol for the general adult population appears to follow the trends already described, at least with respect to age, income, and sex of the reference person. That is, the predicted probability of purchase, which is about 38 percent for the control group, is highest for the youngest group (46 percent) and lowest for the oldest group (22 percent). Similarly, the probability of purchase is lowest for the first income quintile (29 percent) and highest for the fifth (50 percent). Single women are less likely to purchase (23 percent) than are single men (38 percent).

The logit regressions also allow comparisons across a variety of other characteristics. For example, ethnicity appears to have little relationship to the probability of purchasing alcohol in general: the parameter estimate for “Hispanic” is small in magnitude (−0.0628) and is not statistically significant. Race, by contrast, appears to play a role in probability of purchase: black and Asian consumers have much lower probabilities of purchase than do white consumers, and those of other races appear to be similar to Asians in their purchasing behavior. (The coefficient associated with “other race” is nearly equal to that of Asians, while it is not statistically significant.) Occupation has a less strong relationship: although persons in technical, sales, or service positions and those in agricultural fields (forestry and farming) have positive, statistically significant coefficients, no other working group is predicted to be statistically significantly different from salaried (or wage-earning) managers and professionals in their purchases of alcohol in general. Of those who do not work, retirees have a fairly small coefficient that is not statistically significant. The long-term unemployed⁹ have a large, but not statis-

⁹ The survey question on occupation asks at what profession the person earned the most money in the previous year. If the reference person received unemployment insurance and then did not work or worked only sporadically, the person could be reported to have “earned” the most through unemployment.

tically significant, negative coefficient, indicating that they are a lot less likely to purchase than are managers and professionals. The sample size for this group is small, so it is difficult to say whether the negative relationship is indicative of the general population in the group. However, those who are not working for reasons other than that they are a member of the long-term unemployed (for example, they may be attending school, working without pay, too ill to work, or doing something else) also have a large negative coefficient that, this time, is statistically significant. The predicted probability of purchase for this group is 31 percent, compared with 38 percent for managers and professionals. Finally, the South appears to be the region with the lowest probability of purchasing alcohol (38 percent); persons in other regions have predicted probabilities ranging from 44 percent to 46 percent. Rural men are about 9 percent less likely than their urban counterparts to purchase alcohol. (That is, their predicted probability of doing so is 29 percent, about 9 percentage points lower than that of urban single men.)

Probabilities for specific purchases of alcohol. The remaining sets of regression results are for specific types of alcohol purchase—at home, away, or both; and for beer, wine, or other alcohol. Once again, several demographic characteristics appear to be related to the probability of purchase. For example, the probability of purchasing alcohol at home is negatively related to age, as is the purchase of alcohol in general. The youngest age group has a 30-percent predicted probability of purchase at home compared with a 12-percent probability for the oldest group. The coefficients for each of these groups are statistically significant at the 99-percent confidence level, as are all of the age coefficients, with the exception of the 25- to 34-year-old age group (significant at the 95-percent level) and the 45- to 54-year-old age group (not statistically significant). Income, by contrast, is positively related to the purchase of alcohol at home,

ranging from 18 percent for the lowest quintile to 29 percent for the highest. Interestingly, the presence of children or a single adult woman in the home appears to lower the probability of purchasing alcohol at home. Single men (the control group) have a predicted probability of purchase of 24 percent, while single women have only an 11 percent probability. Single mothers have an even lower predicted probability: 9 percent. Husband-and-wife families with children have a lower probability of purchasing alcohol at home (20 percent) than the 24-percent probability of single men. Families with a husband and wife only, however, with a 23-percent probability of purchasing alcohol at home and a coefficient that is not statistically significant, are similar to single men in that type of purchase. Like husband-and-wife-only families, other-husband-and-wife families in which children are present have a predicted probability of purchase of alcohol at home of 23 percent, with a coefficient that is not statistically significant.) Here, too, ethnicity appears to play no role in the probability of purchase, but race does: both black and Asian families have a lower predicted probability of purchase (18 percent) than that of the control group, and both coefficients are statistically significant at the 99-percent confidence level. Families of other nonwhite races appear to have a similarly lower probability (17 percent), but their coefficient is not statistically significant. Occupation also appears to play a role: technical, sales, and service workers (29 percent), as well as blue-collar workers (28 percent), have slightly higher probabilities of purchasing alcohol at home than do managers and professionals (24 percent); however, agricultural workers (40 percent) and armed-service workers (41 percent) have substantially higher probabilities of purchase. Work status, by contrast, plays less of a role: the self-employed, with a probability of purchase of 24 percent, are not statistically significantly different from wage or salaried families, and, although retirees are predicted to have a higher probability of purchase (29 percent) than

wage or salaried families, those who are unemployed or who are not working for another reason are not statistically different from wage or salaried families. Region plays a role (the Northeast has the highest predicted probability of purchasing alcohol at home, 28 percent), as does degree of urbanization (with rural "control" families 7 percent less likely than similar urban families to purchase). Finally, the purchase of alcohol away from home is also positively related to the purchase of alcohol at home. The coefficient is positive and significant at the 99-percent level. However, it is so small (0.0173), that it is economically not significant in its relationship to the probability of purchase.

For purchases of alcohol away from home, the findings are similar, but not identical. First, the probability of purchase is lower (21 percent) for the control group in this case than it is for the probability of purchase of alcohol at home (24 percent). Second, the probability of purchase of alcohol away from home is higher for 25- to 34-year-olds than for those under 25, but it peaks for the former (at 27 percent) and declines with age thereafter. It is also positively related to income, but the range of predicted probabilities is wider (from 14 percent to 33 percent) than it is for alcohol purchased at home. Although husband-and-wife-only families are not statistically significantly different from single men in respect of purchasing alcohol away from home, all other types of family are. Single women have a 16-percent predicted probability of purchase, compared with 21 percent for single men. The presence of children also appears to be related to the probability of purchase, with single fathers, single mothers, and husband-and-wife families with their own children only all having a lower probability of purchasing alcohol away from home (12 percent) than single men without children. Other husband-and-wife families with children have a higher probability of purchase (16 percent), but it is still lower than that for single men. Perhaps this is because the other members of the consumer unit also are likely to be

adults (such as the parent or sibling of one of the spouses), and, therefore, the additional adults contribute to the total probability of purchasing alcohol away from home. Unlike its weak relationship to alcohol purchased at home, ethnicity now is strongly related to the probability of purchase. Hispanics (15 percent) have a much lower probability of purchase than do non-Hispanics (21 percent); the same is true for Asians (16 percent) and, especially, blacks (11 percent). Region makes a difference, but now the Midwest is the region with the highest predicted probability of purchase (26 percent). Rural families are still less likely to purchase (18 percent), and the purchase of alcohol at home also makes a statistically, but not economically, significant difference in the probability of purchasing alcohol away from home.

The probability of purchasing both alcohol at home and alcohol away from home is only about 12 percent. The probability of purchasing both appears to be negatively related to age: the youngest group (those under 25) has the largest coefficient, but it is not quite significant at the 95-percent confidence level. Taken at "face value," though (that is, without regard to statistical significance), the predicted probability for the youngest group is 16 percent, compared with 5 percent for the oldest group (75 and older). The positive relationship to income still holds, with the predicted probability of purchase ranging from 7 percent to 20 percent. Again, the presence of children or a single woman appears to lower the probability of purchasing alcohol for both purposes. Single women have a predicted probability of purchase of 5 percent, while single mothers have an even lower 3-percent probability. The lowest probability of all, however, is that for single fathers: 2 percent. Married couples whose children are biologically related to both parents or have been jointly adopted by them have a 6-percent probability of purchasing both alcohol at home and alcohol away from home. This probability, although larger than that for single parents, is still only about half the predicted probability for

single men (12 percent). Hispanics also have a lower predicted probability of purchase (9 percent) than do non-Hispanics (12 percent), but race lowers the predicted probability even more: both blacks and Asians are about half as likely (6 percent) as whites to purchase both alcohol at home and alcohol away from home. Finally, neither occupation nor region plays a major role in the predicted probability of purchase. Rural consumers (9 percent) appear to be less likely than urban consumers (12 percent) to purchase alcohol for both purposes, but the coefficient is significant only at the 10-percent confidence level.

It is also interesting to examine predicted probabilities for purchasing specific types of alcohol. Although, in these regressions, the same variables are retained as predictors of probability, three new independent variables are added to each equation. The first two are binary variables and indicate that the purchaser purchased some other type of alcohol than the type under study. For example, in predicting the probability of purchasing beer, the first binary variable describes whether the consumer unit did or did not purchase wine, and the second variable describes whether the consumer unit did or did not purchase other alcohol. In predicting the probability of purchasing wine, the first binary variable describes whether the consumer unit did or did not purchase beer, and the second describes whether the consumer unit did or did not purchase other alcohol. And in predicting the probability of purchasing other alcohol, the first binary variable describes whether the consumer unit did or did not purchase beer, and the second describes whether the consumer unit did or did not purchase wine. The third term is an "interaction term" indicating that the consumer unit purchased both remaining types of alcohol, given the particular dependent-variable alcohol. (For example, if the probability of purchasing beer is being predicted, the interaction term will be equal to unity if the consumer unit purchased *both* wine and other alcohol, but will be equal to zero if the consumer unit bought *only* wine

or other alcohol or bought *neither* wine nor other alcohol.) These variables are added to the analysis to see whether different types of alcohol are "substitutes" or "complements," at least in terms of their probability of purchase. Once again, the total sample includes all consumers who purchased at least some type of alcohol during the week they filled in the diary.

Beer. As mentioned earlier, beer is the most popular alcoholic beverage. The parameter estimate associated with the intercept is -1.1944 , indicating that the control group's predicted probability of purchasing beer is 23 percent. The probability of purchase is strongly related to age, declining from 29 percent for the youngest group (under 25) to 10 percent for the oldest group (75 and older). The probability of purchase also is related to income, although only the lowest and highest quintiles have statistically significant coefficients. The probability for the lowest quintile is 17 percent, compared with 27 percent for the highest quintile. Single men are again the most likely to purchase beer (23 percent), single women (12 percent) and single mothers (9 percent) the least likely. Married couples without children are not different from single men to a statistically significant degree, but when children are added to the family, the probability of purchase drops slightly, to 17 percent. When ethnicity and race are considered, only blacks (16 percent) are significantly different from the control group. Among salaried workers, occupation makes a difference, with technical, sales, and service workers (28 percent), blue-collar workers (30 percent), agricultural workers (35 percent), and members of the armed services (38 percent) all having higher predicted probabilities of purchasing beer than do managers or professionals (23 percent). Neither the self-employed nor nonworkers are significantly different from wage and salaried workers, although retirees appear to have a higher probability of purchasing beer (28 percent) than do wage and salaried workers. (The coefficient is positive, but

statistically significant only at the 90-percent level.) The Midwest has the highest probability of purchase (29 percent), and the purchase of wine (57 percent) or of some other alcohol (65 percent) strongly increases the probability of the purchase of beer. However, the purchase of both wine and another alcohol does not significantly increase the probability beyond what is predicted when the coefficient for purchasing wine alone and that for purchasing another alcohol alone are incorporated into the equation. (That is, without including the interaction effect, a member of the control group who purchases both wine and another alcohol has a predicted probability of purchasing beer of 89 percent. When the interaction term is incorporated, the probability rises to 91 percent. This 2-percent difference is not statistically significant, because the coefficient for the interaction term is not statistically significant.)

Wine. The probability of purchasing wine is much lower than the probability of purchasing beer: only 1 in 20 consumer units (5 percent) in the control group is predicted to buy wine during the week its respondent fills out the diary. Age does not appear to be strongly related to the purchase of wine, although 45- to 54-year-olds have the only statistically significant coefficient and thus the highest predicted probability of purchase of any age group. However, at 6 percent, this difference is not economically significant. The probability of purchasing wine increases with income, although only the highest quintile has a statistically significant coefficient associated with it. Once again, without regard to statistical significance, the lowest quintile has a predicted probability of purchase of 4 percent, compared with a predicted probability of purchase of 7 percent for the highest quintile. Family type is not related to the purchase of wine to a statistically significant degree, while ethnicity is perhaps weakly related: the predicted probability for Hispanics (4 percent) is different from the probability for non-Hispanics (5 percent) only

at the 10-percent confidence level. However, blacks (4 percent) and Asians (3 percent) do have statistically significant coefficients at the 95-percent confidence level. (The coefficient for Asians actually is significant at the 99-percent confidence level.) Occupation plays little role; although blue-collar workers have the lowest predicted probability of purchasing wine (3 percent) of all working consumers. Similarly, those who are not working for reasons other than retirement or unemployment have a lower probability than other groups (3 percent). Region plays little role in predicting the probability of purchasing wine, but rural consumers also are less likely (3 percent) than urban consumers (5 percent) to purchase. However, both the purchase of beer (18-percent probability) and the purchase of other alcohol (17-percent probability) substantially increase the probability of purchasing wine. Nevertheless, purchasing both beer and some other alcohol adds little to the probability of purchasing above what purchasing beer or another alcohol alone adds.

Other alcohol. As with wine, the predicted probability of purchasing other alcohol is low—only 4 percent for the control group. However, demographics play a larger role in predicting the probability of purchasing some other alcohol than wine, in that more coefficients are statistically significant.

Although age does not have a statistically significant relationship to the probability of purchasing some alcohol other than wine or beer, both the fourth and fifth income quintiles (6 percent) are more likely to purchase than is the control group. Family type plays a role as well, with female-headed consumer units having lower predicted probabilities (3 percent for single women and 2 percent for single mothers) than do single-male households. In addition, husband-and-wife couples with their own children only have a lower predicted probability of purchasing some other alcohol (2 percent) than have single men. Hispanics and Asians both have lower predicted probabilities

(2 percent) than do white non-Hispanics (4 percent). In respect of occupation, only blue-collar workers have a statistically significant coefficient, with a predicted probability of purchase of 3 percent. By region, only the Midwest has a statistically significant coefficient, raising its probability of purchasing some other alcohol to 5 percent. Once again, the predicted probability of purchase rises sharply when either beer (21 percent) or wine (16 percent) is purchased, but purchasing both beer and wine has no additional effect on the probability of purchasing some other alcohol than is accounted for by including the coefficients for purchasing beer and wine separately. (That is, the expenditures on alcohol of those who purchase beer, but not wine, or wine, but not beer, are not statistically significantly different from those who purchase both beer and wine.)

Summary

This article has examined expenditures for alcohol from several perspectives, including mean weekly expenditures, percent reporting expenditures, and predicted probability of purchase for consumers with different demographic characteristics. Expenditures for alcohol are analyzed both by place of purchase (at home or away) and by type of alcohol purchased (beer, wine, and other alcohol, such as whiskey). Consistent with national sales figures, beer appears to be the most popular form of alcohol purchased, both at home and away from home. Beer has the largest average weekly expenditure for all consumer units and the largest percent of all consumer units reporting the purchase of alcohol. However, when the average expenditure for those who actually purchase alcohol is examined, wine has the largest average expenditure, followed by other alcohols.

Expenditures for alcohol at home rise substantially with income and decrease with age. The exception is expenditures for wine at home, which peak for consumers aged 45 to 54. Expenditures for alcohol away from home also rise with income, but, like expenditures for wine at home, rise with age to a point and

then decline. Regardless, single men spend more on alcohol than do single women, with nonsingles in the middle for expenditures on all alcoholic beverages except wine at home, for which nonsingles spend the most, on average, followed by single men.

When characteristics are held constant by means of regression analysis, the trends in the predicted probability of reporting appear generally to match those described for the observed percent reporting. Other characteristics also appear to be related to the purchase of alcohol, including race and ethnicity, occupation, and region of residence. However, the parameter estimates associated with these variables are not always statistically significant, especially for specific categories of characteristics. (For example, with regard to the purchase of specific types of alcohol, Asians are predicted to be less likely than whites to purchase wine, but the Asian coefficient for the predicted purchase of beer is not statistically significant.) Also, the probability of purchasing one type of alcohol is strongly related to the purchase of another type of alcohol. For instance, consumers who purchase wine or some other alcohol are more likely to purchase beer as well, but the coefficient for the purchase of both wine and another alcohol is not statistically significant, indicating that there is no “additional effect” on the probability of purchasing beer when both wine and another alcohol are purchased than is captured by including the effects of wine and other purchases of alcohol separately.

APPENDIX:

The Use of Logistic Regression (LOGIT) as a Probability Predictor

Logistic regression, or “logit,” is often used to predict the probability that an event will occur, based on a series of

observed variables. In this approach, the probability of incurring expenditures for alcoholic beverages away from home, given a series of demographic characteristics, is examined.

One of the advantages of logit is that the coefficients are easily converted into probabilities without having to resort to special tables or other means of calculation. The formula for such a probability is

$$P_j = \frac{\exp(a + b_1 X_{1j} + \dots + b_n X_{nj})}{1 + \exp(a + b_1 X_{1j} + \dots + b_n X_{nj})}$$

where b_1, \dots, b_n are parameter estimates and X_{1j}, \dots, X_{nj} are characteristics for the j th unit.

In the simplest example in this study, suppose one wants to calculate the probability of purchasing alcohol away from home for the control group described in the text of this article (that is, single men in the middle-income group, and so forth). Because all the independent variables in this case are binary, the only coefficient of concern is that for the intercept. In other words, using the results for the purchase of alcohol

in general yields

$$P = \frac{\exp(-0.4741)}{1 + \exp(-0.4741)} = 0.384.$$

However, suppose one wanted to know the predicted probability for single women instead of single men. That probability is

$$P = \frac{\exp(-0.4741 - 0.7493)}{1 + \exp(-0.4741 - 0.7493)} = 0.227.$$

The coefficient for single women (-0.7493) is simply added into the equation as appropriate. ■

Table 1. Purchases of alcohol by income quintile and selected demographic characteristics, 2000

	All consumer units (21 and older)	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Incomplete reporters
Number of consumer units	80,020,767	13,215,599	14,720,627	14,628,126	14,613,513	14,653,034	8,189,868
Sample size	11,276	1,727	2,010	2,063	2,138	2,202	1,136
Income before taxes (complete reporters only, except where designated otherwise)	\$48,248	\$8,914	\$20,191	\$34,647	\$55,141	\$118,611	\$7,576
Age of reference person	49.3	56.4	50.7	45.6	44.5	45.3	57.3
Percent							
Family type:							
Husband and wife only	21.5	8.9	22.4	21.8	23.7	25.8	27.4
Husband and wife, all children under 18	20.3	4.8	12.0	19.3	30.9	38.1	11.2
Husband and wife, at least one child 18 or older	6.4	1.8	2.9	6.2	8.1	11.4	8.7
Single parent (male)	7	0.5	0.4	1.3	1.0	0.2	0.3
Single parent (female)	5.4	8.7	10.5	5.9	2.2	0.6	4.7
Single man	12.3	20.0	17.6	13.4	9.4	5.9	5.6
Single woman	15.7	42.3	16.2	11.8	6.6	2.1	19.9
Other family	17.7	13.0	18.1	20.2	18.2	16.0	22.3
Ethnic origin:							
Hispanic	9.1	10.9	13.8	11.4	7.5	4.4	5.4
Non-Hispanic	90.9	89.1	86.2	88.6	92.5	95.6	94.6
Race:							
White	83.4	78.3	81.4	84.6	84.7	88.5	82.1
Black	12.4	18.0	14.6	12.0	11.2	6.2	13.7
Asian	3.4	2.7	2.7	2.8	3.3	5.1	3.4
Other race	0.8	1.0	1.3	0.6	0.8	0.2	0.8
Occupation:							
Works for wage or salary:	65.1	36.5	57.0	74.7	84.8	85.2	37.9
Managers and professionals	20.3	4.4	8.3	16.8	28.2	48.2	9.9
Teachers	3.7	1.3	1.8	4.6	6.4	5.6	1.7
Technicians, sales, and services	25.6	21.5	29.8	32.2	29.4	20.9	14.2
Blue collar	14.2	8.5	15.1	18.9	19.4	9.6	12.0
Agriculture (farming, forestry, or fishing)	0.9	0.8	1.9	1.6	0.6	0.2	0.1
Armed services	0.4	0.0	0.1	0.6	0.8	0.7	0.0
Self-employed	5.0	4.1	4.6	5.9	3.1	5.9	7.4
Not working:	32.1	59.3	38.6	19.3	12.2	9.0	54.5
Retired	19.9	37.9	27.7	12.1	7.7	3.7	41.0
Unemployed	2.4	1.1	0.0	1	0.2	0.0	0.2
Other not working	9.8	20.3	10.9	7.2	4.3	5.3	13.3
Housing tenure:							
Homeowner:	66.8	48.3	56.9	61.4	75.2	86.7	73.2
Has mortgage	41.8	14.0	24.5	39.2	59.3	75.5	30.5
Owens without mortgage	25.0	34.3	32.4	22.2	15.9	11.2	42.7
Renter	33.2	51.7	43.1	38.6	24.8	13.3	26.8
Region of residence:							
Northeast	19.6	17.5	17.6	22.3	18.5	20.3	22.8
Midwest	24.1	21.2	22.8	24.3	28.0	23.6	25.2
South	35.1	40.3	39.5	32.7	32.0	30.8	35.5
West	21.2	21.0	20.1	20.7	21.5	25.3	16.5
Degree of urbanization:							
Urban	86.9	82.2	85.4	85.5	88.3	91.3	88.8
Rural	13.1	17.8	14.6	14.5	11.7	8.7	11.2

Table 1. Purchases of alcohol by income quintile and selected demographic characteristics, 2000

	All consum- er units (21 and older)	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Incomplete reporters
Percent reporting							
Purchase of alcohol:							
Alcohol, total	29.0	16.7	22.9	30.9	35.8	43.2	18.6
At home	20.4	11.9	16.9	22.3	24.8	29.1	13.4
Away from home	14.6	6.9	9.2	14.4	19.8	25.6	8.5
Both types purchased ²	6.0	2.1	3.2	5.8	8.8	11.5	3.3
Beer:	23.7	13.1	19.8	26.1	28.9	35.2	13.7
At home	14.4	8.4	13.5	17.3	17.0	18.7	8.5
Away from home	12.8	6.1	8.1	12.4	17.3	22.6	7.4
Wine:	9.9	4.3	5.5	9.0	12.4	19.3	7.3
At home	7.0	3.3	3.9	6.1	8.4	13.9	5.5
Away from home	3.7	1.2	1.9	3.3	5.0	7.7	2.1
Other alcohol:	8.3	4.0	4.9	7.4	11.2	15.1	5.8
At home	3.7	2.3	2.3	3.6	4.8	5.1	3.9
Away from home	5.3	1.8	3.0	4.4	7.2	11.4	2.3
Mean weekly expenditure							
Alcohol, total	\$7.05	\$3.72	\$4.09	\$6.49	\$9.22	\$13.15	\$3.94
At home	4.71	3.05	3.07	4.51	5.37	8.35	3.01
Away from home	2.34	0.67	1.02	1.98	3.85	4.80	0.93
Beer:	3.70	2.24	2.68	4.18	4.93	5.48	1.70
At home	2.36	1.83	2.06	2.92	2.67	2.96	1.15
Away from home	1.34	0.41	0.62	1.26	2.26	2.52	0.55
Wine:	1.98	0.93	0.77	1.12	2.34	5.00	1.37
At home	1.63	.83	0.65	0.85	1.76	4.19	1.22
Away from home	0.36	0.10	0.12	0.27	0.58	0.81	0.15
Other alcohol:	1.36	0.55	0.64	1.19	1.95	2.67	0.87
At home	0.72	0.39	0.36	0.74	0.94	1.20	0.64
Away from home	0.64	0.16	0.28	0.45	1.01	1.47	0.23

¹ Less than 0.5 percent.

²This group is included in both alcohol-at-home and alcohol-away-from-home groups. When the figure shown is subtracted from the at-home and the away-from-home totals, the total percent reporting alcohol is obtained.

Table 2. Purchases of alcohol by age group and other selected demographic characteristics, 2000

	All consumer units (21 and older)	Under 25	25-34	35-44	45-54	55-64	65-74	75 and older
Number of consumer units	80,020,767	4,271,663	14,262,057	18,057,721	14,844,186	10,265,925	9,498,725	8,820,490
Sample size	11,276	591	2,073	2,517	2,093	1,477	1,287	1,238
Income before taxes (complete reporters only, except where designated otherwise)	\$48,248	\$24,207	\$46,818	\$60,703	\$61,814	\$49,729	\$33,191	\$22,659
Age of reference person	49.3	22.5	29.8	39.4	49.2	59.4	69.4	80.5
Percent								
Family type:								
Husband and wife only	21.5	12.2	12.5	8.9	19.1	37.6	42.7	28.3
Husband and wife, all children under 18	20.3	12.7	36.9	40.6	17.4	4.6	0.3	³
Husband and wife, at least one child 18 or older	6.4	0.0	0.2	5.6	15.0	9.5	6.3	3.1
Single parent (male)	0.7	0.4	0.7	1.5	0.8	0.2	³	³
Single parent (female)	5.4	9.9	8.9	10.1	5.3	0.3	³	³
Single man	12.3	24.2	12.3	10.9	11.9	10.6	10.0	14.9
Single woman	15.7	14.3	9.3	6.1	10.4	18.5	24.9	42.4
Other family	17.7	26.3	19.1	16.3	20.0	18.6	15.9	11.3
Ethnic origin:								
Hispanic	9.1	11.1	16.6	9.6	9.6	5.3	4.6	3.7
Non-Hispanic	90.9	88.9	83.4	90.4	90.4	94.7	95.4	96.3
Race:								
White	83.4	82.2	78.8	82.8	82.1	84.3	86.9	90.0
Black	12.4	12.8	14.0	13.7	12.7	12.9	11.1	7.8
Asian	3.4	4.8	6.2	2.1	4.0	2.8	1.7	2.1
Other race	0.8	0.2	1.0	1.4	1.2	¹	0.3	0.1
Occupation:								
Works for wage or salary:	65.1	89.9	86.7	84.3	79.7	59.5	22.6	4.4
Managers and professionals	2.3	15.7	26.9	27.8	25.3	19.8	8.3	1.4
Teachers	3.7	3.4	5.3	3.3	6.2	4.9	0.5	0.1
Technicians, sales, and services	25.6	50.7	33.4	30.5	31.5	21.0	10.3	2.5
Blue collar	14.2	15.7	18.9	21.9	15.9	12.8	3.3	0.4
Agriculture (farming, forestry, or fishing)	0.9	3.5	1.4	0.1	0.8	0.6	0.2	³
Armed services	0.4	0.9	0.8	0.7	³	0.4	³	³
Self-employed	5.0	2.0	3.2	5.3	6.1	6.4	6.1	3.9
Not working:	32.1	8.2	10.2	9.3	14.2	34.0	71.3	91.6
Retired	19.9	0.4	0.1	0.2	1.2	18.3	65.1	86.3
Unemployed	2.4	³	0.3	0.3	0.3	¹	0.5	³
Other not working	9.8	7.8	9.8	8.8	12.7	15.7	5.7	5.3
Housing tenure:								
Homeowner:	66.8	15.5	47.5	66.2	73.8	73.8	83.4	78.1
Has mortgage	41.8	11.9	42.3	58.2	58.1	58.1	24.9	9.8
Owns without mortgage	25.0	3.6	5.2	8.0	15.7	15.7	58.5	68.3
Renter	33.2	84.5	52.5	33.8	26.2	26.2	16.6	21.9
Region of residence:								
Northeast	19.6	9.5	18.9	18.6	19.7	21.8	21.6	23.0
Midwest	24.1	22.8	23.5	25.1	23.9	22.2	24.3	26.3
South	35.1	38.6	32.7	35.2	35.0	36.4	38.2	31.8 West
West	21.2	29.1	24.9	21.1	21.4	19.6	15.9	18.9
Degree of urbanization:								
Urban	86.9	91.3	88.2	86.9	88.6	85.4	80.4	88.1
Rural	13.1	8.7	11.8	13.1	11.4	14.6	19.6	11.9

Table 2. Purchases of alcohol by age group and other selected demographic characteristics, 2000

	All consumer units (21 and older)	Under 25	25-34	35-44	45-54	55-64	65-74	75 and older
Percent reporting								
Purchase of alcohol:								
Alcohol, total	29.0	34.6	36.5	31.7	31.5	27.4	21.3	14.3
At home	20.4	26.4	26.1	22.6	22.5	18.3	14.2	9.2
Away from home	14.6	14.9	19.4	16.0	15.6	14.9	9.9	7.1
Both types purchased ²	6.0	6.7	9.0	6.9	6.6	5.8	2.8	2.0
Beer:	23.7	31.3	32.1	27.1	24.9	21.3	14.8	9.9
At home	14.4	23.2	21.4	17.5	14.4	10.6	7.6	4.6
Away from home	12.8	13.8	16.7	14.1	14.2	13.0	8.2	6.1
Wine:	9.9	9.1	11.1	10.4	12.7	10.0	7.0	5.9
At home	7.0	5.8	7.5	7.1	9.3	7.1	5.5	4.3
Away from home								
Other alcohol:	8.3	8.7	10.3	8.9	8.9	8.6	6.5	4.3
At home	3.7	4.8	3.4	3.8	3.2	4.5	4.2	2.6
Away from home	5.3	4.7	8.0	5.8	6.2	4.9	2.8	2.0
Mean weekly expenditure								
Alcohol, total	7.05	9.65	8.18	8.57	7.60	6.69	4.72	2.81
At home	4.71	7.46	5.18	5.33	5.10	4.35	3.78	2.12
Away from home	2.34	2.19	3.00	3.24	2.50	2.34	0.94	0.69
Beer:	3.70	6.85	4.95	4.58	3.91	3.09	1.56	1.05
At home	2.36	5.48	3.24	2.77	2.50	1.69	0.97	0.65
Away from home	1.34	1.37	1.71	1.81	1.41	1.40	0.59	0.40
Wine:	1.98	1.34	1.66	2.29	2.40	2.23	2.13	1.05
At home	1.63	1.04	1.23	1.79	2.00	1.86	2.00	.92
Away from home	0.36	0.30	0.43	0.50	0.40	0.37	0.13	0.13
Other alcohol:	1.36	1.46	1.57	1.70	1.29	1.37	1.03	0.71
At home	0.72	0.94	0.71	0.77	0.60	0.80	0.81	0.55
Away from home	0.64	0.52	0.86	0.93	0.69	0.57	0.22	0.16

¹Less than 0.5 percent.

²This group is included in both alcohol-at-home and alcohol-away-from-home groups. When the figure shown is subtracted from the at-home and the away-from-home totals, the total percent reporting alcohol is obtained.

³No data reported.

Table 3. Purchases of alcohol by marital status and other selected demographic characteristics, 2000

	All consumer units (21 and older)	Singles only		Not single
		Men	Women	
Number of consumer units	80,020,767	9,882,436	12,584,190	57,554,141
Sample size	11,276	1,365	1,708	8,203
Income before taxes (complete reporters only, except where designated otherwise)	\$48,248	\$35,788	\$22,042	\$56,108
Age of reference person	49.3	48.2	60.0	47.1
Percent				
Family type:				
Husband and wife only	21.5	¹	¹	29.8
Husband and wife, all children under 18	20.3	¹	¹	28.2
Husband and wife, at least one child 18 or older	6.4	¹	¹	8.9
Single parent (male)	0.7	¹	¹	0.9
Single parent (female)	5.4	¹	¹	7.6
Single man	12.3	100.0	¹	¹
Single woman	15.7	¹	100.0	¹
Other family	17.7	¹	¹	24.6
Ethnic origin:				
Hispanic	9.1	5.7	3.1	11.0
Non-Hispanic	90.9	94.3	96.9	89.0
Race:				
White	83.4	85.6	84.8	82.7
Black	12.4	10.9	12.0	12.8
Asian	3.4	2.9	2.8	3.6
Other race	0.8	0.6	0.4	0.9
Occupation:				
Works for wage or salary:.....	65.1	65.4	45.6	69.4
Managers and professionals	20.3	20.7	15.0	21.4
Teachers	3.7	2.4	4.6	3.8
Technicians, sales, and services	25.6	23.7	22.3	26.6
Blue collar	14.2	16.4	3.4	16.2
Agriculture (farming, forestry, or fishing)	0.9	1.7	0.3	0.9
Armed services	0.4	0.5	³	0.5
Self-employed	5.0	6.4	2.6	5.3
Not working:	32.1	28.0	52.0	25.4
Retired	2.4	0.1	0.2	0.3
Other not working	9.8	8.2	9.2	10.2
Housing tenure:				
Homeowner:	66.8	49.4	58.2	71.6
Has mortgage.	41.8	26.2	20.5	49.1
Owns without mortgage	25.0	23.2	37.7	22.5
Renter	33.2	50.6	41.8	28.4
Region of residence:				
Northeast.....	19.6	19.8	21.3	19.2
Midwest	24.1	23.5	27.4	23.5
South	35.1	35.0	32.0	35.8
West	21.2	21.7	19.3	21.5
Degree of urbanization:				
Urban	86.9	90.5	89.0	85.8
Rural	13.1	9.5	11.0	14.2

Table 3. Purchases of alcohol by marital status and other selected demographic characteristics, 2000

	All consumer units (21 and older)	Singles only		Not single
		Men	Women	
Percent reporting				
Purchase of alcohol:				
Alcohol, total	29.0	34.4	16.9	30.7
At home	20.4	25.0	9.3	22.0
Away from home	14.6	17.4	10.1	15.2
Both types purchased ²	6.0	8.0	2.5	6.5
Beer:				
At home	23.7	30.0	12.0	25.2
Away from home	14.4	19.8	4.4	15.7
Wine:				
At home	12.8	15.3	8.6	13.3
Away from home	9.9	10.3	6.2	10.7
Other alcohol:				
At home	7.0	5.7	4.3	7.8
Away from home	3.7	5.7	2.2	3.7
Other alcohol:				
At home	8.3	11.2	4.6	8.6
Away from home	3.7	4.4	2.2	3.8
Away from home	5.3	7.7	2.7	5.4
Mean weekly expenditure				
Alcohol, total				
At home	7.05	10.44	2.79	7.40
Away from home	4.71	6.08	1.69	5.14
Beer:				
At home	2.34	4.36	1.10	2.26
Away from home	3.70	5.80	1.38	3.86
Wine:				
At home	2.36	3.57	0.67	2.53
Away from home	1.34	2.23	0.71	1.33
Other alcohol:				
At home	1.98	2.43	0.80	2.16
Away from home	1.63	1.55	0.65	1.85
Other alcohol:				
At home	0.36	0.88	0.15	0.31
Away from home	1.36	2.21	0.61	1.38
At home	0.72	0.96	0.37	0.76
Away from home	0.64	1.25	0.24	0.62

¹ Not available.

² This group is included in both alcohol-at-home and alcohol-away-from-home groups. When the figure shown is subtracted from the at-home and the away-from-home totals, the total percent reporting alcohol is obtained.

³ No data reported.

Table 4. Parameter estimates and other results of the logit regressions on alcohol purchase patterns, 2000

Characteristic (control group value in parentheses)	Logit results			
	Parameter estimate	Standard error	Chi-square	Pr > chi-square
Alcohol, total				
Intercept	-0.4741	0.1047	20.4963	<0.000
Age of reference person (35 to 44):				
Under 25	0.3076	0.1053	8.5411	0.0035
25 to 34	0.2466	0.0659	13.9996	0.0002
45 to 54	-0.1135	0.0678	2.7993	0.0943
55 to 64	-0.3159	0.0828	14.5675	0.0001
65 to 74	-0.4296	0.1100	15.2484	<0.0001
75 and older	-0.8070	0.1300	38.5615	<0.0001
Income quintile (quintile 3):				
Quintile 1	-0.4375	0.0878	24.8015	<0.0001
Quintile 2	-0.2861	0.0739	14.9804	0.0001
Quintile 4	0.1532	0.0685	5.0008	0.0253
Quintile 5	0.4824	0.0727	44.0884	<0.0001
Incomplete income reporters	-0.4096	0.0920	19.8067	<0.0001
Family type (single man):				
Husband and wife only	-0.0925	0.0791	1.3676	0.2422
Husband and wife, own children only	-0.4797	0.0814	34.6906	<0.0001
Other husband and wife with children	-0.1951	0.1057	3.4057	0.0650
Single father	-0.2906	0.2414	1.4494	0.2286
Single mother	-1.0723	0.1316	66.4027	<0.0001
Single woman	-0.7493	0.0905	68.5886	<0.0001
Other family	-0.2896	0.0795	13.2701	0.0003
Ethnic origin of reference person (non-Hispanic):				
Hispanic	-0.0628	0.0779	0.6499	0.4201
Race of reference person (white):				
Black	-0.5253	0.0810	42.0712	<0.0001
Asian	-0.3847	0.1096	12.3303	0.0004
Other race	-0.3502	0.2669	1.7217	0.1895
Occupation of reference person (manager or professional, wage or salaried):				
Teacher	-0.0911	0.1173	0.6039	0.4371
Technical, sales, or services	0.1292	0.0626	4.2587	0.0390
Blue collar	0.0346	0.0751	0.2122	0.6451
Agricultural	0.4531	0.2136	4.5014	0.0339
Armed services	0.2514	0.2837	0.7854	0.3755
Self-employed	0.0129	0.1073	0.0144	0.9046
Retired	0.0723	0.1059	0.4662	0.4948
Unemployed long term	-0.6179	0.6308	0.9596	0.3273
Not working, other reason	-0.3305	0.0950	12.1095	0.0005
Housing tenure (homeowner with mortgage):				
Homeowner no mortgage	-0.0477	0.0674	0.4992	0.4798
Renter	-0.0155	0.0575	0.0723	0.7880
Region of residence (South):				
Northeast	0.2978	0.0639	21.6987	<0.0001
Midwest	0.2903	0.0602	23.2703	<0.0001
West	0.2285	0.0600	14.5163	0.0001
Degree of urbanization (urban):				
Rural	-0.4238	0.0842	25.3511	<0.0001
Alcohol at home				
Intercept	-1.1579	0.1168	98.2728	<0.0001
Age of reference person (35 to 44):				
Under 25	0.3185	0.1138	7.8368	0.0051

Table 4. Parameter estimates and other results of the logit regressions on alcohol purchase patterns, 2000

Characteristic (control group value in parentheses)	Logit results			
	Parameter estimate	Standard error	Chi-square	Pr > chi-square
Alcohol at home—Continued				
25 to 34	0.1773	0.0720	6.0620	0.0138
45 to 54	-0.0441	0.0745	0.3503	0.5540
55 to 64	-0.3031	0.0934	10.5272	0.0012
65 to 74	-0.4555	0.1263	13.0060	0.0003
75 and older	-0.8446	0.1518	30.9599	<0.0001
Income quintile (quintile 3):				
Quintile 1	-0.3573	0.0995	12.8953	0.0003
Quintile 2	-0.2210	0.0823	7.2202	0.0072
Quintile 4	0.0545	0.0759	0.5164	0.4724
Quintile 5	0.2399	0.0802	8.9408	0.0028
Incomplete income reporters	-0.3521	0.1038	11.5177	0.0007
Family type (single man):				
Husband and wife only	-0.0521	0.0875	0.3543	0.5517
Husband and wife, own children only	-0.2185	0.0891	6.0163	0.0142
Other husband and wife with children	-0.0531	0.1156	0.2113	0.6457
Single father	-0.3249	0.2718	1.4284	0.2320
Single mother	-1.1369	0.1574	52.1439	<0.0001
Single woman	-0.9314	0.1089	73.1263	<0.0001
Other family	-0.1672	0.0872	3.6803	0.0551
Ethnic origin of reference person (non-Hispanic):				
Hispanic	0.1099	0.0830	1.7526	0.1855
Race of reference person (white):				
Black	-0.3580	0.0899	15.8760	<0.0001
Asian	-0.3680	0.1246	8.7175	0.0032
Other race	-0.4521	0.3068	2.1715	0.1406
Occupation of reference person (manager or professional, wage or salaried):				
Teacher	-0.1204	0.1363	0.7798	0.3772
Technical, sales, or services	0.2559	0.0697	13.4980	0.0002
Blue collar	0.2208	0.0823	7.1906	0.0073
Agricultural	0.7617	0.2191	12.0920	0.0005
Armed services	0.7945	0.2840	7.8288	0.0051
Self-employed	-0.0083	0.1229	0.0045	0.9464
Retired	0.2674	0.1217	4.8284	0.0280
Unemployed long term	-0.1551	0.6299	0.0606	0.8055
Not working, other reason	-0.1162	0.1054	1.2149	0.2704
Housing tenure (homeowner with mortgage):				
Homeowner no mortgage	-0.0192	0.0761	0.0636	0.8009
Renter	0.0035	0.0635	0.0030	0.9567
Region of residence (South):				
Northeast	0.2379	0.0710	11.2192	0.0008
Midwest	0.1854	0.0674	7.5557	0.0060
West	0.1813	0.0665	7.4371	0.0064
Degree of urbanization (urban):				
Rural	-0.4292	0.0964	19.8406	<0.0001
Type of alcohol purchased:				
Alcohol for consumption away from home.....	0.0173	0.0022	61.4922	<0.0001
Alcohol away from home				
Intercept	-1.3053	0.1314	98.6242	<.0001
Age of reference person (35 to 44):				
Under 25	0.1957	0.1380	2.0110	0.1562
25 to 34	0.3044	0.0824	13.6458	0.0002

Table 4. Parameter estimates and other results of the logit regressions on alcohol purchase patterns, 2000

Characteristic (control group value in parentheses)	Logit results			
	Parameter estimate	Standard error	Chi-square	Pr > chi-square
Alcohol away from home—Continued				
45 to 54	-0.1808	0.0864	4.3757	0.0365
55 to 64	-0.2171	0.1045	4.3120	0.0378
65 to 74	-0.3970	0.1441	7.5897	0.0059
75 and older	-0.5690	0.1716	10.9909	0.0009
Income quintile (quintile 3):				
Quintile 1	-0.4909	0.1225	16.0642	<0.0001
Quintile 2	-0.3016	0.1011	8.8954	0.0029
Quintile 4	0.2862	0.0873	10.7341	0.0011
Quintile 5	0.6007	0.0910	43.5773	<0.0001
Incomplete income reporters	-0.3696	0.1280	8.3396	0.0039
Family type (single man):				
Husband and wife only	-0.0995	0.0984	1.0234	0.3117
Husband and wife, own children only	-0.6775	0.1035	42.8473	<0.0001
Other husband and wife with children	-0.3196	0.1351	5.5944	0.0180
Single father	-0.6523	0.3300	3.9073	0.0481
Single mother	-0.7275	0.1724	17.7999	<0.0001
Single woman	-0.3575	0.1131	9.9967	0.0016
Other family	-0.3951	0.1023	14.9156	0.0001
Ethnic origin of reference person (non-Hispanic):				
Hispanic	-0.4688	0.1153	16.5228	<0.0001
Race of reference person (white):				
Black	-0.7365	0.1202	37.5312	<0.0001
Asian	-0.3744	0.1436	6.7928	0.0092
Other race	-0.1918	0.3554	0.2914	0.5893
Occupation of reference person (manager or professional, wage or salaried):				
Teacher	-0.0630	0.1384	0.2073	0.6489
Technical, sales, or services	-0.0965	0.0757	1.6263	0.2022
Blue collar	-0.3175	0.0966	10.8138	0.0010
Agricultural	-0.4291	0.3224	1.7721	0.1831
Armed services	-0.4104	0.3782	1.1774	0.2779
Self-employed	-0.0111	0.1305	0.0073	0.9319
Retired	-0.2224	0.1377	2.6092	0.1062
Unemployed long term	-11.5682	201.4000	0.0033	0.9542
Not working, other reason	-0.6136	0.1330	21.2917	<0.0001
Housing tenure (homeowner with mortgage):				
Homeowner no mortgage	-0.1362	0.0886	2.3609	0.1244
Renter	-0.0819	0.0740	1.2256	0.2683
Region of residence (South):				
Northeast	0.2340	0.0824	8.0587	0.0045
Midwest	0.2829	0.0769	13.5133	0.0002
West	0.1778	0.0779	5.2164	0.0224
Degree of urbanization (urban):				
Rural	-0.2208	0.1095	4.0682	0.0437
Type of alcohol purchased				
Alcohol for consumption away from home.....	0.0181	0.0016	125.3391	<0.0001
Alcohol at home and alcohol away from home				
Intercept	-1.9918	0.1829	118.5713	<0.0001
Age of reference person (35 to 44):				
Under 25	0.3589	0.1880	3.6434	0.0563
25 to 34	0.3085	0.1132	7.4340	0.0064
45 to 54	-0.1963	0.1205	2.6563	0.1031

Table 4. Parameter estimates and other results of the logit regressions on alcohol purchase patterns, 2000

Characteristic (control group value in parentheses)	Logit results			
	Parameter estimate	Standard error	Chi-square	Pr > chi-square
Alcohol at home and alcohol away from home —Continued				
55 to 64	-0.3268	0.1507	4.7008	0.0301
65 to 74	-0.8113	0.2330	12.1242	0.0005
75 and older	-0.8939	0.2811	10.1150	0.0015
Income quintile (quintile 3):				
Quintile 1	-0.6653	0.2013	10.9182	0.0010
Quintile 2	-0.3272	0.1535	4.5440	0.0330
Quintile 4	0.3343	0.1249	7.1651	0.0074
Quintile 5	0.5858	0.1295	20.4516	<0.0001
Incomplete income reporters	-0.3699	0.1991	3.4501	0.0632
Family type (single man):				
Husband and wife only	-0.1450	0.1363	1.1324	0.2873
Husband and wife, own children only	-0.7011	0.1415	24.5382	<0.0001
Other husband and wife with children.....	-0.2276	0.1837	1.5344	0.2154
Single father	-1.7053	0.7267	5.5062	0.0189
Single mother	-1.3269	0.3028	19.2059	<0.0001
Single woman	-0.8691	0.1854	21.9819	<0.0001
Other family	-0.4285	0.1423	9.0715	0.0026
Ethnic origin of reference person (non-Hispanic):				
Hispanic	-0.3771	0.1595	5.5871	0.0181
Race of reference person (white):				
Black	-0.8317	0.1873	19.7237	<0.0001
Asian	-0.7441	0.2331	10.1877	0.0014
Other race	-0.3315	0.5238	0.4007	0.5268
Occupation of reference person (manager or professional, wage or salaried):				
Teacher	-0.3262	0.2108	2.3936	0.1218
Technical, sales, or services	-0.0185	0.1044	0.0315	0.8591
Blue collar	-0.2494	0.1349	3.4196	0.0644
Agricultural	-0.0917	0.4091	0.0503	0.8226
Armed services	0.3739	0.3985	0.8807	0.3480
Self-employed	-0.0689	0.1903	0.1310	0.7174
Retired	-0.0978	0.2171	0.2032	0.6522
Unemployed long term	-11.2583	288.2000	.0015	0.9688
Not working, other reason	-0.6011	0.1988	9.1399	0.0025
Housing tenure (homeowner with mortgage):				
Homeowner no mortgage	-0.2426	0.1356	3.2030	0.0735
Renter	-0.1114	0.1052	1.1221	0.2895
Region of residence (South):				
Northeast	0.1459	0.1183	1.5218	0.2174
Midwest	0.1402	0.1107	1.6050	0.2052
West	0.1514	0.1095	1.9114	0.1668
Degree of urbanization (urban):				
Rural	-0.2788	0.1624	2.9457	0.0861
Beer				
Intercept	-1.1944	0.1202	98.7746	<0.0001
Age of reference person (35 to 44):				
Under 25	0.2794	0.1160	5.8050	0.0160
25 to 34	0.2044	0.0733	7.7706	0.0053
45 to 54	-0.2487	0.0776	10.2743	0.0013
55 to 64	-0.4444	0.0965	21.2240	<0.0001
65 to 74	-0.6851	0.1323	26.8169	<0.0001
75 and older	-1.0011	0.1579	4.1924	<0.0001

Table 4. Parameter estimates and other results of the logit regressions on alcohol purchase patterns, 2000

Characteristic (control group value in parentheses)	Logit results			
	Parameter estimate	Standard error	Chi-square	Pr > chi-square
Beer—Continued				
Income quintile (quintile 3):				
Quintile 1	-0.3618	0.1002	13.0291	0.0003
Quintile 2	-0.1609	0.0830	3.7578	0.0526
Quintile 4	-0.0241	0.0784	0.0944	0.7587
Quintile 5	0.1772	0.0832	4.5310	0.0333
Incomplete income reporters	-0.5580	0.1101	25.6931	<0.0001
Family type (single man):				
Husband and wife only	-0.1248	0.0908	1.8898	0.1692
Husband and wife, own children only	-0.3699	0.0919	16.1972	<0.0001
Other husband and wife with children	-0.2430	0.1226	3.9307	0.0474
Single father	-0.6450	0.2922	4.8720	0.0273
Single mother	-1.0858	0.1514	51.4280	<0.0001
Single woman	-0.8272	0.1072	59.5817	<0.0001
Other family	-0.2681	0.0905	8.7658	0.0031
Ethnic origin of reference person (non-Hispanic):				
Hispanic	0.1383	0.0862	2.5710	0.1088
Race of reference person (white):				
Black	-0.4405	0.0934	22.2337	<0.0001
Asian	-0.0272	0.1217	0.0500	0.8231
Other race	-0.4034	0.3142	1.6487	0.1991
Occupation of reference person (manager or professional, wage or salaried):				
Teacher	-0.0312	0.1386	0.0506	0.8220
Technical, sales, or services	0.2266	0.0724	9.7906	0.0018
Blue collar	0.3630	0.0846	18.3947	<0.0001
Agricultural	0.5969	0.2294	6.7688	0.0093
Armed services	0.6854	0.3022	5.1442	0.0233
Self-employed	0.0699	0.1261	0.3075	0.5792
Retired	0.2404	0.1279	3.5300	0.0603
Unemployed long term	-0.4230	0.6913	0.3744	0.5406
Not working, other reason	-0.0920	0.1084	0.7199	0.3962
Housing tenure (homeowner with mortgage):				
Homeowner no mortgage	-0.0777	0.0791	0.9634	0.3263
Renter	0.0446	0.0654	0.4655	0.4951
Region of residence (South):				
Northeast	0.2833	0.0738	14.7555	0.0001
Midwest	0.3047	0.0693	19.3346	<0.0001
West	0.1180	0.0693	2.9012	0.0885
Degree of urbanization (urban):				
Rural	-0.1413	0.0933	2.2920	0.1300
Type of alcohol purchased:				
Purchased wine	1.4732	0.0826	318.0120	<0.0001
Purchased another alcohol	1.8090	0.0953	360.5648	<0.0001
Purchased wine and another alcohol	0.2146	0.1938	1.2265	0.2681
Wine				
Intercept	-2.9972	0.1783	282.7000	<0.0001
Age of reference person (35 to 44):				
Under 25	0.2933	0.1799	2.6567	0.1031
25 to 34	0.0643	0.1094	0.3451	0.5569
45 to 54	0.3258	0.1072	9.2425	0.0024
55 to 64	0.2068	0.1334	2.4022	0.1212
65 to 74	0.0941	0.1800	0.2729	0.6014
75 and older	0.0200	0.2115	0.0090	0.9246

Table 4. Parameter estimates and other results of the logit regressions on alcohol purchase patterns, 2000

Characteristic (control group value in parentheses)	Logit results			
	Parameter estimate	Standard error	Chi-square	Pr > chi-square
Wine—Continued				
Income quintile (quintile 3):				
Quintile 1	-0.3014	0.1582	3.6306	0.0567
Quintile 2	-0.2527	0.1330	3.6102	0.0574
Quintile 4	0.1887	0.1137	2.7517	0.0972
Quintile 5	0.4614	0.1158	15.8821	<0.0001
Incomplete income reporters	0.1291	0.1490	0.7513	0.3861
Family type (single man):				
Husband and wife only	0.0787	0.1300	0.3666	0.5449
Husband and wife, own children only	0.1395	0.1345	1.0765	0.2995
Other husband and wife with children	0.1119	0.1690	0.4380	0.5081
Single father	0.2328	0.3951	0.3472	0.5557
Single mother	-0.0507	0.2258	0.0504	0.8224
Single woman	0.0302	0.1515	0.0397	0.8420
Other family	-0.0376	0.1345	0.0781	0.7798
Ethnic origin of reference person (non-Hispanic):				
Hispanic	-0.2494	0.1394	3.2015	0.0736
Race of reference person (white):				
Black	-0.2846	0.1397	4.1493	0.0417
Asian	-0.6004	0.1989	9.1125	0.0025
Other race	-0.1145	0.4709	0.0591	0.8079
Occupation of reference person (manager or professional, wage or salaried):				
Teacher	-0.1149	0.1780	0.4167	0.5186
Technical, sales, or services	-0.1094	0.0955	1.3115	0.2521
Blue collar	-0.5779	0.1294	19.9599	<0.0001
Agricultural	-0.6064	0.4275	2.0118	0.1561
Armed services	-0.7662	0.5178	2.1895	0.1390
Self-employed	-0.1024	0.1652	0.3845	0.5352
Retired	-0.1846	0.1684	1.2029	0.2727
Unemployed long term	-0.9262	1.1455	0.6537	0.4188
Not working, other reason	-0.6230	.1689	13.6054	0.0002
Housing tenure (homeowner with mortgage):				
Homeowner no mortgage	0.0162	0.1098	0.0218	0.8827
Renter	-0.2146	0.0967	4.9199	0.0265
Region of residence (South):				
Northeast	0.1805	0.1014	3.1686	0.0751
Midwest	-0.1860	0.1003	3.4416	0.0636
West	0.1555	0.0960	2.6234	0.1053
Degree of urbanization (urban):				
Rural	-0.5842	0.1591	13.4874	0.0002
Type of alcohol purchased:				
Purchased beer	1.4781	0.0823	322.3686	<0.0001
Purchased another alcohol	1.4416	0.1669	74.6139	<0.0001
Purchased beer and another alcohol	0.2136	0.1931	1.2230	0.2688
Another alcohol				
Intercept	-3.1624	0.1913	273.2494	<0.0001
Age of reference person (35 to 44):				
Under 25	-0.0362	0.1899	0.0363	0.8489
25 to 34	0.1603	0.1150	1.9423	0.1634
45 to 54	-0.1186	0.1200	0.9763	0.3231
55 to 64	-0.0669	0.1460	0.2098	0.6469
65 to 74	0.1273	0.1915	0.4417	0.5063
75 and older	-0.0402	0.2326	0.0299	0.8628

Table 4. Parameter estimates and other results of the logit regressions on alcohol purchase patterns, 2000

Characteristic (control group value in parentheses)	Logit results			
	Parameter estimate	Standard error	Chi-square	Pr > chi-square
Another alcohol—Continued				
Income quintile (quintile 3):				
Quintile 1	-0.2224	0.1700	1.7113	0.1908
Quintile 2	-0.1768	0.1425	1.5397	0.2147
Quintile 4	0.3201	0.1233	6.7399	0.0094
Quintile 5	0.4278	0.1287	11.0468	0.0009
Incomplete income reporters	0.0696	0.1686	0.1703	0.6799
Family type (single man):				
Husband and wife only	-0.1649	0.1327	1.5440	0.2140
Husband and wife, own children only.....	-0.7449	0.1433	27.0278	<0.0001
Other husband and wife with children.....	-0.1470	0.1794	0.6718	0.4124
Single father	0.2641	0.3785	0.4868	0.4854
Single mother	-0.5883	0.2501	5.5334	0.0187
Single woman	-0.4545	0.1621	7.8643	0.0050
Other family	-0.2688	0.1363	3.8901	0.0486
Ethnic origin of reference person (non-Hispanic):				
Hispanic	-0.5377	0.1629	1.8983	0.0010
Race of reference person (white):				
Black	-0.1530	0.1496	1.0460	0.3064
Asian	-0.5739	0.2180	6.9304	0.0085
Other race	0.2898	0.4528	0.4098	0.5221
Occupation of reference person (manager or professional, wage or salaried):				
Teacher	-0.1699	0.2024	0.7042	0.4014
Technical, sales, or services	-0.1351	0.1050	1.6558	0.1982
Blue collar	-0.4466	0.1387	1.3688	0.0013
Agricultural	-0.1272	0.4046	0.0988	0.7533
Armed services	-0.1766	0.4906	0.1296	0.7189
Self-employed	0.0741	0.1778	0.1735	0.6770
Retired	-0.2470	0.1856	1.7713	0.1832
Unemployed long term	0.6229	0.8580	0.5272	0.4678
Not working, other reason	-0.3382	0.1806	3.5049	0.0612
Housing tenure (homeowner with mortgage):				
Homeowner no mortgage	-0.0551	0.1242	0.1971	0.6570
Renter	0.0717	0.1034	0.4814	0.4878
Region of residence (South):				
Northeast	-0.1086	0.1173	0.8579	0.3543
Midwest	0.2482	0.1059	5.4901	0.0191
West	0.1782	0.1063	2.8119	0.0936
Degree of urbanization (urban):				
Rural	-0.4489	0.1700	6.9713	0.0083
Type of alcohol purchased:				
Purchased beer	1.8210	0.0950	367.7814	<0.0001
Purchased wine	1.4733	0.1662	78.6136	<0.0001
Purchased beer and wine	0.1604	0.1918	0.6989	0.4032