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THE U.S. WINE MARKET

Raymond J. Folwell

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ABSTRACT

U.S. wine buyers are identified by major demographic characteristics, wine products purchased, and intended use of these products. Market demand functions are estimated by wine type and region. The typical wine purchasing household, according to the survey of 7,000 households on which this study is based, has higher income, fewer members, and more education than average. About half of U.S. households never buy wine, and less than 5 percent purchase more than half the wine. Two important variables influence amount of wine purchased: wine price and income level. In some markets, total industry revenues would increase if prices were raised.

Key Words: Brands, demographic characteristic, diary, demand, elastic market, grapes, inelastic market, market concentration, market penetration, panel data, total revenue, wine, winery.

Mention of brand names does not imply endorsement by the U.S. Department of Agriculture.

Washington, D.C. 20250 December 1978

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SUMMARY

This report investigates the market structure of the U.S. wine industry, and explores who buys wine in the United States and why. It is based on a survey panel of about 7,000 households, who reported their monthly wine purchases from February 1975 through January 1976. Panel members also completed a questionnaire on their attitudes, factors leading to wine purchases, and what influenced their use of wine products. Wine products considered in this report include varietal table, nonvarietal table, dessert, sparkling, and flavored wines, as well as vermouth and brandy.

Households that bought table wine (varietal or nonvarietal) had more education and higher household incomes than the average household that bought other types of wine. The wives in these households were slightly older and the families slightly smaller than for those households that bought other types of wine. In contrast, the households purchasing dessert and flavored wines tended to be slightly less educated, with smaller household incomes and larger families.

To investigate the concentration of wine purchases, the households purchasing wines were arrayed as to the total quantity of wine purchased, and then divided into ten equal deciles. This revealed that the first decile of households purchasing wine accounted for 54.4 percent of all the wine bought by the households during the survey period. This decile accounted for only 3.5 percent of all the households on the panel. The two largest deciles bought two-thirds of the wine.

The demographics of the wine purchasing households by deciles showed that the households that bought the largest volumes of wine had the highest incomes, a highly educated male head, and smaller families, and were slightly further along in their life cycle as indicated by the age of the wife.

Households that bought the most wine paid lower average prices, gaining economies of size in their buying.

Gallo accounted for 32.9 percent of the wine market, and United Vintners for 12.9 percent. The four largest wine companies accounted for 54.1 percent of all wine purchases. The 8 largest companies accounted for 64.5 percent while the 10 largest wine companies accounted for 66.7 percent of the wine purchases reported by the panel.

The market shares held by the companies on a national basis were not necessarily reflected in their regional market shares. Many wineries service different segments of the U.S. wine markets with different products. In addition to the different relative market shares in various regions, the average prices paid per ounce for the various wine types produced by the largest companies in the United States differed among the regions. These differences in average prices are partly caused by the varying taxes imposed by States.

Brand preferences were explored. For varietal table wines, strong brand loyalty was shown for United Vintners, Mogen David, and Franzia Brothers.

Strong brand preference was assumed when a household bought at least 50 percent of a given wine product from one firm. Brand loyalty for nonvarietal table wines was weaker than that for varietal table wines, with households expressing brand loyalty only to Gallo and Canandaigua nonvarietal table wine. Brand loyalty or preference was found for dessert wines produced by Gallo, Guild, and Taylor. In the sparkling wine category, brand preferences were found for Gallo, Franzia, and Guild. Only the Gallo and Mogen David flavored wines appeared to have strong brand preferences.

While there was some degree of brand preference for all wine types, the panel of households did not show strong brand preference for all wines produced by a single company. Although there was substitution of wine purchases by the households on the panel, each company appears to serve, to some extent, unique segments of the U.S. wine market.

Over 30 percent of the panel households never drink wine. Almost 40 percent of those never drinking wine refrained because of personal or religious beliefs. This was especially true in the South. However, many nonconsumers appeared to lack enough knowledge and confidence to make their first purchase. This seems to be confirmed by the importance of brand name and advice of friends reported by the purchasing households. Sixteen percent of the panel households drank less wine during the study year than the year before.

Demand functions were estimated for each of the major wine types considered. The resulting functions were used to analyze the implications of pricing policies at the industry level, as well as to ascertain the impact on the demand for various wine types from changes in the explanatory variables. Degrees of price elasticity varied by wine type and by region. In most cases where income was statistically significant, increased income was associated with an increased demand for wine. In very few cases was the price of a substitute wine type statistically significant in explaining the variation in the quantity demanded. Usually, only price and income were the explanatory variables affecting demand.

THE U.S. WINE MARKET

by

Raymond J. Folwell

and

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I. INTRODUCTION

The U.S. wine industry has shown extraordinary growth in the 1960's and 1970's, yet little has been reported about the U.S. wine market. Who buys wine in the United States? When and for what occasions is it bought? What are the characteristics of the wine market and wine marketing in the United States?

Before this study was initiated, there was no adequate data set relating to the U.S. wine market. The only market information available to the U.S. wine industry was shipment data or volumes entering distribution channels based on tax withdrawals, inventory data, and number of wineries. But relying on this type of secondary data, it was impossible to say precisely who purchases wines and why, or to answer various marketing questions ranging from physical distribution patterns to pricing problems. The information in this report aims to answer these questions.

The Growth of an Industry

The wine industry is unparalleled in the American industrial economy in terms of its growth in sales and its market organization. It is unique in terms of the number and sizes of firms, the concentration of the industry on the East and West Coasts, the large number of different types and variations in wine products produced, and the unprecedented market growth rate some of its wine products have enjoyed (8, 19). 1/

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1/ Underlined numbers in parentheses refer to citations listed on pages 82-84 of this report.

The wine industry in the United States, which started for a second time after Prohibition, has been dominated by family-owned companies. The industry did not grow much in size until the 1960's. In the late 1960's the U.S. wine market boomed and sales rose at unprecedented annual rates--as high as 14 percent in some years (39). With the wine boom, sales grew at fantastic rates, and some wine companies were bought, merged, or consolidated with conglomerate corporations. Other wine companies remained as family owned or controlled enterprises.

This growth in sales is quantified by the following volumes of wine that entered distribution channels in the United States (39):

Type of wine	Year					
	1956	1960	1964	1968	1972	1976
			Gallons			
Per capita: 2/						
Table wine						
U.S.	.24	.26	.32	.41	.65	.85
Imported	.02	.03	.05	.06	.18	.23
Total	.26	.29	.37	.47	.83	1.08
Sparkling	.02	.02	.03	.06	.11	.10
Dessert and other 3/	.61	.59	.57	.53	.68	.57
All wine	.89	.91	.97	1.07	1.62	1.75
			1,000 gallons			
Total:						
Table wine						
U.S.	40,820	47,467	61,698	82,791	136,340	181,982
Imported	3,834	5,603	8,651	13,041	37,478	49,412
Total	44,655	53,071	70,349	95,831	173,818	231,394
Sparkling	2,779	4,321	6,543	12,513	22,299	21,764
Dessert and other 3/	102,605	105,960	108,733	105,314	140,864	123,145
All wine	150,039	163,352	185,625	213,658	336,981	376,303

2/ Based on total resident population.
3/ Computed on a residual basis by subtracting table and sparkling wine gallonage from total wine gallonage.

In terms of 4-year growth rates, the increases in the amount of wine entering distribution channels were 8.9 percent between 1956 and 1960, 13.6 percent between 1960 and 1964, 15.1 percent between 1964 and 1968, 57.7 percent between 1968 and 1972, and 11.7 percent between 1972 and 1976. The growth rates as shown by each of the changes in wine shipments over 4-year periods indicate the rapid increases in sales and then the leveling off that has characterized wine sales in more recent years. The growth rates over 4-year periods were modest until the late 1960's and early 1970's. In those years a wine boom occurred and the industry responded with new grape acreage and wineries. Not only did the traditional wine producing areas in California and New York expand, but new entities in Washington, Oregon, and other States began to appear. The industry was enjoying a period of market growth that was beyond its expectations.

Despite the wine boom and the initial growth of numerous new commercial wine industries in various States, California still accounted for 86 percent of gross U.S. wine production in 1975. New York was the second most important State in terms of gross wine production, accounting for 10 percent of the 1975 volume. The wine industry continues to be concentrated in terms of its location pattern.

For the most part, the concentration of wine production has historically centered around the major areas of grape production, California and New York. The wine industry is this Nation's leading market for grapes, which are one of the major fruit crops of the United States, frequently surpassing apples and oranges in value of production. In 1975, the year of the study, the value of production for grapes was $618 million and in 1977 the value of production was $776.1 million. Since 1970 more than 60 percent of the grape crop has been crushed for wine and juice production. Wine and its major ingredient, grapes, are an important part of American agriculture.

The Study and the Report

The data used in this analysis were gathered from a panel of households in the United States, consisting of about 7,000 households at any one time between February 1975 and January 1976. Members of this panel reported their monthly wine purchases that were related to household use of the wine. They did not include wines purchased for consumption away from a household setting, such as in a restaurant. All of the major demographic features, such as age, sex, income, occupation, education, race, marital status, and region of the country, were also available, so they could be cross tabulated with each household's purchasing patterns.

This report gives insights into consumer buying attitudes and patterns. The information includes:

1. An analysis of the demographic characteristics of wine purchasing households by type of wine purchased,

2. The proportion of the total population in a given region that buys wines (degree of market penetration),

3. The estimated market shares held by the largest wine companies,

4. The average prices paid for various types of wine in the United States, by wine type and individual company,

5. The degree of brand preference in wine purchasing,

6. The changing wine purchasing patterns in the United States,

7. Estimated statistical market demand functions for various wines and pricing policy implications, and

8. General facts about wine buying and motivation for purchasing wines.

This report is intended for an audience consisting of the wine industry, researchers, and various other industries that serve the wine industry such as manufacturers of packaging materials and advertising firms. Some of the material is analyzed in such a fashion that an individual not familiar with economics and statistics will have difficulty in fully understanding the statistical analyses. However, an effort is made to explain the implications of the results to those without a full understanding of the statistical methods employed.

II. A CROSS-SECTIONAL PROFILE OF THE PANEL AND REPORTED WINE PURCHASES

This chapter presents an overview of the household panel that reported their wine purchases via a monthly diary. The panel of households is described in terms of its selection and what the panel represents in terms of all U.S. households. The monthly diary and the limitations of market information generated in this manner are discussed. Finally, the reported wine purchases made by the panel member households are compared with the volume of wine entering distribution channels in the United States during the time period.

Representativeness of the Panel

The panel of households used in this wine research effort was maintained by National Purchase Diary (NPD) of New York City. The household panel was maintained solely for the purpose of collecting information about the purchase of various goods, principally food and grocery items. The households were selected by NPD to represent a cross section of all households in the United States. The household panel member responding was the female head of household or the wife. The households were rewarded through a gift from NPD for reporting the purchase(s) of various items in the monthly diaries.

The household panel consisted of 11,522 households from February 1975 through January 1976. Not all of the households were on the panel for the entire period, and an average of about 7,000 households participated at any one time. This report is based on all the households, regardless of the length of time they served on the panel.

The households or panelists are those defined by the Census Bureau of the U.S. Department of Commerce (38). A household as used herein is a group of two or more persons residing together in the same household.

The panel of households was not a probability sample. The households were recruited by a telephone survey to serve on the panel. Attempts were made to make the panel representative of U.S. households according to census region, age, income, and education. The households were selected and/or replaced according to household size, income, and education so that the panel would represent U.S. households as defined by the Census Bureau. Figure 1 delineates the census regions used in this study.

Because the panel was not a probability sample, because single member households were not included on the panel, and because there was some turnover in households on the panel, the panel did not match in all instances the estimated percentage distributions of households according to major census household demographics. The information in the remainder of this section provides a basis for establishing how closely the panel of households represented all U.S. households.

Age

Table 1 presents the percent distribution by age of the heads of households for the households on the panel and for all households in the United States. The table shows that the panel had a greater proportion of households in the age group 25 to 44 years. The panel had proportionally fewer male heads of households in the age groups 14 to 24 and 65 years and over than did the United States as a whole.

On a national basis, the panel truly represented the households in the middle-aged group, those with a male head of household 45 to 65 years old. The percent distributions on the panel and in the United States were almost equal. The panel overrepresented the households whose female head was less than 65 years of age. It underrepresented the households whose female head was 65 years or older. In the 14 to 24 years of age category, the panel underrepresented U.S. households on the basis of the age of the male head, and overrepresented on the basis of the female head.

The aggregate representation at the national level of all households on the panel by age of male head of household was also true on a regional 4/ basis (table 1). As an example, the age group of 45 to 64 years of age for the male head of the household, the panel contained 36.4 percent of the households

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4/ The smallest areas or regions with about the same distribution by ranges of ages were the four major Census regions of the United States. Therefore, the regions shown in fig. 1 were consolidated into the larger Census regions as follows: (1) the Northeast region consists of the New England and Middle Atlantic regions; (2) the North Central region consists of the East and West North Central regions; (3) the South region consists of the South Atlantic, East South Central, and West South Central regions; and (4) the West region consists of the Mountain and Pacific regions.

Figure 1.
U.S. Census regions used as market regions in this study

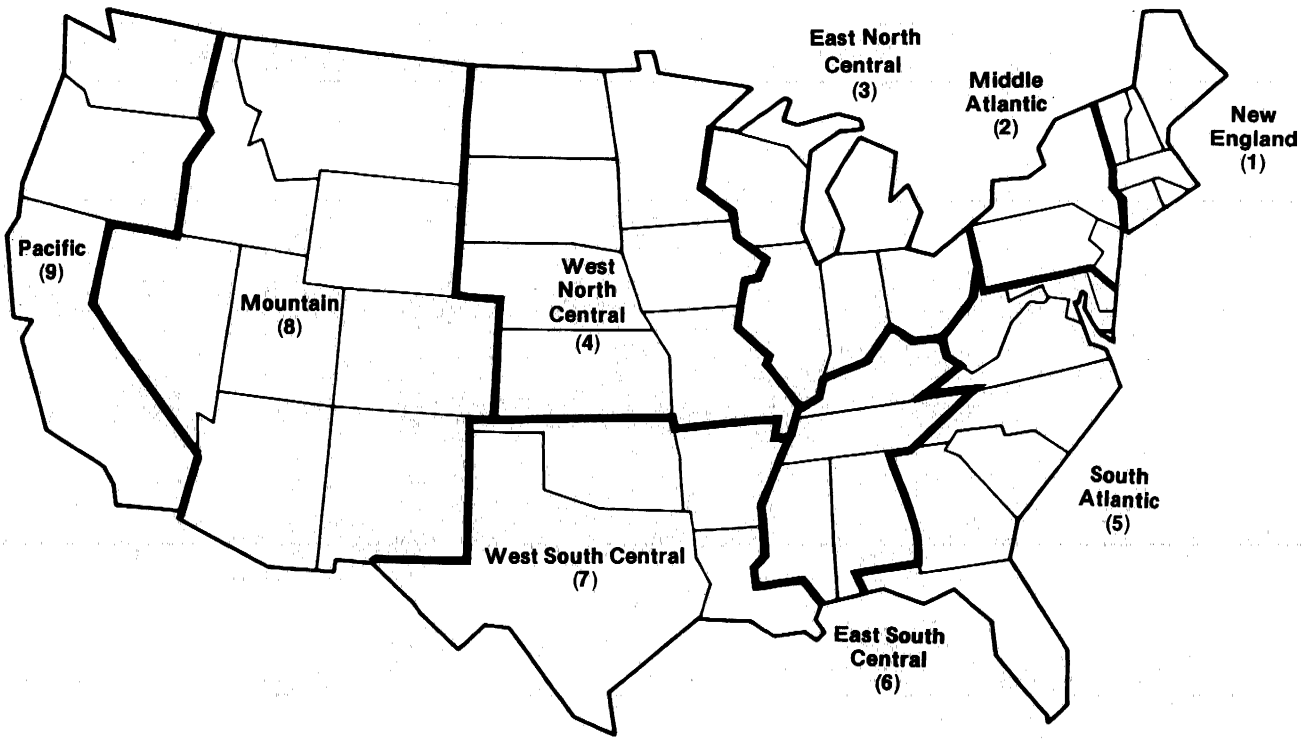


Table 1. Age of male and female heads of household, panel households and all U.S. households

Region	Male					Female				
	Total	14-24 years	25-44 years	45-64 years	65 years and over	Total	14-24 years	25-44 years	45-64 years	65 years and over
	Panel of households									
	Percent									
United States	100	4.67	49.09	36.37	9.87	100	8.90	50.64	34.64	5.82
Northeast	100	4.94	52.62	34.54	7.09	100	9.65	56.51	29.03	4.81
North Central	100	5.15	49.45	35.32	10.08	100	9.17	49.81	35.16	5.86
South	100	4.57	47.31	37.86	10.26	100	8.60	48.38	37.14	5.88
West	100	3.59	46.22	38.44	11.75	100	7.82	47.53	37.54	7.11
	All U.S. households a/									
	Percent									
United States	100	7.16	40.98	36.51	15.35	100	3.36	22.91	32.99	40.74
Northeast	100	5.24	39.77	38.77	16.22	100	2.47	21.50	32.80	43.23
North Central	100	6.75	40.19	37.83	15.23	100	3.47	21.75	32.14	42.64
South	100	8.49	41.78	34.27	15.46	100	3.30	22.02	34.13	40.55
West	100	7.88	42.34	35.60	14.18	100	4.42	27.86	32.41	35.31

a/ U.S. Dept. Commerce, Bur. of the Census, Population Characteristics Series P-20, No. 271, issued October 1974.

in this age group on a national basis, while the estimated number of households in such an age group by the Census Bureau was 36.5 percent in 1974. Regionally, the panel underrepresented or overrepresented the number of households in the 45 to 64 years of age group by only a few percentage points. Based upon the percentage distribution by age, the panel of households is very representative of middle-aged households which comprise one of the greatest concentrations of the entire population.

Education

The percentage distribution by education of the head of the panel households on national and regional bases are presented in table 2. Table 2 also shows the percent distribution by education of the heads of all U.S. households in 1973. The percentage distributions by education level on a regional basis for all U.S. households were not available at the time this research was done.

In aggregate, the panel overrepresented households in which the male head had at least some college education and underrepresented households whose head had a high school education or less. The percent of households on the panel whose head had some high school or a high school education was closer to the percent of such households throughout the United States than it was for those with only an elementary school education. The panel was lacking in terms of representing those households whose head had only an elementary education.

On a regional basis the representation of the panel in terms of education of the head of the household was the same as on a national basis. The households with less than a high school education level tended to be underrepresented, while households with more education tended to be overrepresented.

Income

To compare the average household incomes of the panel households to the average incomes of all U.S. households on a regional basis, regions were consolidated as shown in figure 1 into the four regions described in footnote 4. Table 3 shows that the panel was representative of households with annual money incomes between $5,000 and $9,999. The panel underrepresented households in the United States with annual incomes of less than $5,000 and overrepresented households with incomes exceeding $10,000 per year.

Regionally, the panel of households usually closely represents the percentage of households in each income category found by the national census. The few exceptions were within a few percentage points of exact representation.

Overall, the panel overrepresented middle-aged households with at least some college education and annual incomes in excess of $10,000. Inferences from the information presented in this report must be made keeping in mind how well the panel represented U.S. households. As will be shown later, most wine buying households in the United States tend to be in those categories that are overrepresented on the panel.

Table 2. Education level of head of household, panel households and all U.S. households

Region	Elementary School	Some High School	High School Graduate	Some College	College Graduate	Total
			Percent			
N. England	5.94	15.35	30.03	21.45	27.23	100
Mid Atlantic	3.87	13.34	30.75	21.69	30.35	100
E. N. Central	5.81	12.79	32.36	24.12	24.92	100
W. N. Central	12.72	14.14	31.25	19.08	22.81	100
S. Atlantic	5.93	11.67	25.10	25.81	31.49	100
E. S. Central	9.88	16.26	24.32	23.10	26.44	100
W. S. Central	6.14	13.28	24.33	24.44	31.81	100
Mountain	6.80	9.90	24.54	24.95	33.81	100
Pacific	3.46	9.27	21.46	35.84	29.97	100
All panel households	6.10	12.68	27.95	24.79	28.48	100
All U.S. households a/	23.4	15.7	32.7	13.1	15.1	100

a/ U.S. Dept. Commerce, Bur. of the Census, Consumer Information Series P-60, No. 96, issued August 1974. Data is for 1973.

Table 3. Distribution of all panel households by annual money income

Region	Under $3,000	$3,000 to $4,999	$5,000 to $6,999	$7,000 to $9,999	$10,000 to $11,999	$12,000 to $14,999	$15,000 or more	Total
	Panel of households							
	Percent							
Northeast	1.15	4.13	5.99	11.63	14.21	20.70	42.19	100
North Central	1.51	3.98	6.75	11.56	13.89	19.16	43.15	100
South	2.04	4.45	7.07	12.84	13.45	19.57	40.58	100
West	1.60	4.02	5.51	14.73	12.36	18.58	43.20	100
All regions	1.59	4.16	6.45	12.47	13.58	19.55	42.20	100
	All U.S. households a/							
	Percent							
Northeast	3.2	7.3	7.6	13.1	10.0	14.5	44.30	100
North Central	3.9	6.2	7.9	12.7	10.2	15.5	43.6	100
South	8.2	9.8	10.3	15.2	10.7	13.4	32.4	100
West	4.7	7.2	9.4	14.1	9.6	12.9	42.1	100
United States	5.31	7.80	8.89	13.83	10.23	14.14	39.80	100

a/ U.S. Dept. Commerce, Bur. of the Census, Consumer Income Series P-60, No. 101, issued January 1976.

Demographic Structure of Panel Households

The complete demographic structure of each household on the panel was made available so that purchase information could be cross tabulated with the demographic data. The kind of demographics available on each household is listed in table 4. The subclasses of a demographic feature and the codes used in analyzing the data are also shown.

Previous analysis showed that the major demographic characteristics that segregate wine-purchasing from nonpurchasing households are the region of the country, age of wife, size of family, education level of the male head, and annual household income (30, 34). Thus, for brevity, the other demographic items shown in table 4 were not used in this analysis.

Monthly Purchase Diary

Each panel household was supplied with a monthly diary in which it recorded all wine purchases and other information concerning each wine purchase. Figure 2 shows a completed diary. Each diary for each household was identified by the household identification number (261 7512 in fig. 2). It was then possible to take the purchase information from the monthly diaries and combine it with the complete demographic data for each individual household. The purchase data for each household were so coded that all cross-tabulations were possible among the purchase data and the household demographics as shown in table 4.

Wine types were identified in the coding of the purchase data for the entire 12 months of the panel. A code for each of the largest 13 wine companies in the United States was also used during the last 6 months of the study. Thus, the wine type could be identified by individual company in analyzing the purchase data. The wines were identified by company for only 6 months of the study: August 1975 through January 1976.

Disadvantages of the Panel

The panel represented households, not the total population. According to U.S. Census data (1973), the country contains about 54 million families representing 90 percent of the population (38). Conspicuously missing from the panel were young persons not living in family units. Young single persons' extreme mobility makes it hard and expensive to keep them on consumer diary panels.

Another limitation was the exclusion from the diary of wines purchased while dining out. Another general problem arises from the fact that the diary initially advertises the product under study. Panel members can be expected to buy more of the product than normal during the first month the product is in the diary.

A problem that occurs with diary-type mail panels is the consumer's interpretation of what he has bought. Occasionally what is written on the diary is incorrect, incomplete, or uninterpretable. When this happens, the person transcribing the purchase data must objectively try to interpret the diary

Sample diary of reported wine purchased by panel household

Extra space page 1. Free Gifts and Samples, inside front cover.

WINE DIARY TIPS: Include all wine purchased for consumption at home or outside the home. Also include wine bought to **give** as a gift. Write in all types such as TABLE WINES, DESSERT WINES (like Sherry, Port, etc.) SPARKLING (like Champagne, Cold Duck, etc.), FLAVORED (like Apple, Berry), VERMOUTH, BRANDY or COGNAC. DO NOT INCLUDE wine consumed at a restaurant.

DEC. 261 7512

Date of month purchase was made	Write in BRAND NAME as shown on label / WINES	HOW MANY of each kind did you buy? Write in number of bottles, cans, jars or other containers	HOW MUCH DID YOU PAY? TOTAL CASH PAID Don't include taxes $	¢	Was this a special price or offer? IF NO, Check here ✓	IF YES, describe kind such as store sale, cents-off, coupon, gift on or in package, etc. How much savings in total? DESCRIBE SPECIAL PRICE OR OFFER	Total ¢ off	WHERE DID YOU PURCHASE? NAME OF STORE (or company if purchased from door-to-door or home delivery salesperson)	KIND OF STORE Check (✓) or write in. GROCERY OR FOOD	LIQUOR/PACKAGE	DRUG	Other — Describe	WEIGHT (SIZE) SHOWN ON LABEL Write in size such as 10 oz., 12 oz., 16 oz., qt. size etc.	FULL DESCRIPTION OF WINE Write in such as: "White Table Wine," "American Riesling," "Sparkling Burgundy," etc COPY FROM LABEL	FLAVOR Write in flavor such as: Apple Wine, Apricot Brandy, etc. COPY FROM LABEL	COLOR OF WINE Check (✓) One Red	White	Rose	PLACE OF ORIGIN Check (✓) One DOMESTIC California	N.Y.	Washington	Other	IMPORTED Italy	France	Germany	Spain	Other	WHO PURCHASED Write in Age and Sex AGE	SEX	OCCASION FOR PURCHASE Check (✓) as many as apply For Use At Home Special occasion	Everyday use	For cooking	Gift	WHO WILL PROBABLY DRINK SOME? Check (✓) as many as apply Panel Member	Male Head	Children Under 18	Friends	Relatives
24	Magen David	1	1	45	✓			Copp's	X				4/5 qt	Concord Wine	Grape	✓						1						34	M	X				X			X	X

Figure 2

Table 4. Demographic features and subclasses available monthly for each panel household

AGE, FEMALE HEAD

1 - Under 25
2 - 25-34
3 - 35-44
4 - 45-54
5 - 55-64
6 - 65 & over

AGE, MALE HEAD

1 - Under 25
2 - 25-34
3 - 35-44
4 - 45-54
5 - 55-64
6 - 65 & over

AGE & PRESENCE OF CHILDREN

1 - Under 6 only
2 - 6-12 only
3 - 13-17 only
4 - Under 6 & 6-12
5 - Under 6 & 13-17
6 - 6-12 & 13-17
7 - All three age groups
8 - No children under 18

MARITAL STATUS

1 - Married
2 - Single
3 - Widowed
4 - Separated or divorced

EDUCATION, MALE HEAD

1 - Grade school
2 - Some high school
3 - Graduated high school
4 - Some college
5 - Graduated college or more

RACE

1 - White
2 - Black
3 - Oriental
4 - Other

FAMILY SIZE

1 - Single member (certain supplements only)
2 - Two member
3 - Three member
4 - Four member
5 - Five member
6 - Six member
7 - Seven member
8 - Eight member
9 - Nine member
10 - Ten member
11 - Eleven member
12 - Twelve member or more

MONTH OF BIRTH

1 - January
2 - February
3 - March
4 - April
5 - May
6 - June
7 - July
8 - August
9 - September
10 - October
11 - November
12 - December

EMPLOYMENT STATUS, FEMALE HEAD

1 - Employed
2 - Not employed

OCCUPATION, MALE HEAD

1 - Professional
2 - Proprietors, managers, officials
3 - Clerical
4 - Sales
5 - Craftsmen/foremen (skilled)
6 - Operative (semiskilled)
7 - Private household worker
8 - Service workers
9 - Farm owners, managers
10 - Farm foremen, laborers
11 - Laborers
12 - Retired, unemployed, military, student

INCOME

1 - Under $3,000
2 - $3,000-4,999
3 - $5,000-6,999
4 - $7,000-7,999
5 - $8,000-8,999
6 - $9,000-9,999
7 - $10,000-10,999
8 - $11,000-11,999
9 - $12,000-12,999
10 - $13,000-14,999
11 - $15,000-19,999
12 - $20,000 & over

EDUCATION, FEMALE HEAD

1 - Grade school
2 - Some high school
3 - Graduated high school
4 - Some college
5 - Graduated college or more

YEAR OF BIRTH

Actual
Last 2 digits

RELATIONSHIP

1 - Son
2 - Daughter
3 - Other male relation
4 - Other female relation
5 - Other male
6 - Other female

CENSUS DIVISION

1 - New England
2 - Middle Atlantic
3 - East North Central
4 - West North Central
5 - South Atlantic
6 - East South Central
7 - West South Central
8 - Mountain
9 - Pacific

MARKET SIZE

1 - 50,000-99,000
2 - 100,000-249,000
3 - 250,000-499,000
4 - 500,000-999,999
5 - 1,000,000-2,499,999
6 - 2,500,000 & over
9 - Non-SMSA

information. Typically, 20 to 40 household diaries needed interpretation each month. Approximately half of these diaries were salvaged.

Volumes of Wine Purchased

The volumes of wine reported purchased by the panel of households from February 1975 through January 1976 are shown in table 5. The total quantity of wine purchased by the households was 1,224,715.7 ounces during the 12 months. This amounts to 9,568.1 gallons. Households reported 21,219 purchases, an average of 57.7 ounces or 0.45 gallons per purchase.

The volumes bought were classified by origin (domestic or imported), and by wine type such as varietal table wine, etc. Table wines are naturally fermented and contain 14 percent or less alcohol by volume. Varietal table wines are those that contain at least 51 percent of the juice from a given variety of grapes and are marketed under that variety name. Nonvarietal table wines or generic table wines are blends of various varieties of grapes. Nonvarietal table wines are usually named after a famous wine-producing region in the world such as Burgundy, Rhine, etc. Dessert wines are produced by the addition of wine spirits and as a rule contain 15 to 20 percent alcohol by volume. They include sherry and port. Sparkling wines have more than 0.256 grams of carbon dioxide per milliliter. The principal sparkling wines are champagne, burgundy, and cold duck. Flavored wines are defined as those produced primarily from fruits other than grapes and have the dominant flavor of that fruit, e.g., apple, berry, or citrus. Vermouth is a type of aperitif wine made from grapes but having the "taste and characteristics attributed to vermouth" because it is flavored with herbs. Brandy is a grape product that has been distilled to concentrate the alcohol to a higher percentage than occurs in the wine naturally.

Nonvarietal table wines dominated the wine purchases reported by the panel households (table 5). These wines accounted for 67.2 percent of the total volume purchased by the households. Varietal table wines, dessert wines, and flavored wines were bought in about the same quantities (9 percent of each) by panel households. The types shifted in relative importance when analyzed on a domestic and imported basis.

The panel bought relatively little imported table wine, 11.6 percent of the total volume of wine purchased.

Sparkling wines were only 3.6 percent of the total volume purchased. Vermouth and brandy were the least important, accounting for 1.6 and 0.3 percent, respectively, of the total volumes bought.

Purchased Wine Volume and Shipment Data

The volume of wines purchased by the households (table 5) is compared to the volume of wines that was shipped or entered distribution channels in the United States (table 6). This information adds to the foundation from which any conclusions and inferences are drawn from this report. To allow the wine to flow through the distribution channels and reach retail shelves, a time lapse of 1 month was used in the comparison. Thus the shipment data for two 12-month

Table 5. Quantity of wine types purchased

Wine type	Ounces purchased	Percentage of total
DOMESTIC		
Varietal table	114,778.9	9.4
Nonvarietal table	711,510.8	58.1
Dessert	107,728.8	8.8
Sparkling	42,313.3	3.5
Flavored	89,017.4	7.3
Vermouth	13,036.8	1.1
Brandy	2,646.2	.2
Other	1,690.6	.1
Total domestic	1,082,722.8	88.4
IMPORTED		
Varietal table	1,262.8	.1
Nonvarietal table	111,718.84	9.1
Dessert	4,200.999	.3
Sparkling	1,270.6	.1
Flavored	15,825.787	1.3
Vermouth	6,660.692	.5
Brandy	641.8	.1
Other	411.6	.03
Total imported	141,993.10	11.6
ALL WINE		
Varietal table	116,041.7	9.5
Nonvarietal table	823,229.64	67.2
Dessert	111,929.79	9.1
Sparkling	43,583.9	3.6
Flavored	104,843.18	8.6
Vermouth	19,697.492	1.6
Brandy	3,288.0	.3
Other	2,102.2	.2
Grand total	1,224,715.7	100.0
	(9,568.1 gal)	

Table 6. Volumes and percentage distributions of wine entering distribution channels and reported purchases by household panel

Wine origin and type	Shipments - wine entering distribution channels 1975	Shipments - wine entering distribution channels 1976	Reported household panel purchases	Shipments - wine entering distribution channels 1975	Shipments - wine entering distribution channels 1976	Reported household panel purchases
DOMESTIC	- - - 1,000 gallons - - -		Gallons	- - - Percent - - -		
Table	173,511	181,982	6,455.4	52.7	55.5	76.3
Dessert	64,650	57,998	841.6	19.6	17.7	9.9
Vermouth	5,272	5,220	101.8	1.6	1.6	1.2
Sparkling	18,435	19,205	330.6	5.6	5.9	3.9
Flavored a/	56,842	52,979	695.5	17.3	16.1	8.2
Brandy b/	10,433	10,730	20.7	3.2	3.3	0.2
Other c/	---	---	13.2	---	---	0.2
Total	329,143	328,114	8,458.8	100.0	100.0	100.0
IMPORTED						
Table	40,524	49,412	2.7	78.1	79.3	79.6
Dessert	2,589	2,931	32.8	5.0	4.7	3.0
Vermouth	4,278	4,017	52.0	8.2	6.4	4.7
Sparkling	1,928	2,559	9.9	3.7	4.1	0.9
Flavored a/	---	---	123.6	---	---	11.1
Brandy b/	2,562	3,396	5.0	4.9	5.4	0.5
Other c/	---	---	3.2	---	---	0.3
Total	51,881	62,314	1,109.2	100.0	100.0	100.0
ALL WINE						
Table	214,035	231,394	7,338.1	56.2	59.3	76.7
Dessert	67,239	60,929	874.5	17.6	15.6	9.1
Vermouth	9,551	9,237	153.9	2.5	2.4	1.6
Sparkling	20,363	21,764	340.5	5.3	5.6	3.6
Flavored a/	---	---	819.1	---	---	8.6
Brandy b/	12,995	14,126	25.7	3.4	3.6	0.3
Other c/	56,842	52,979	16.4	14.9	13.6	0.2
Total	381,024	390,429	9,568.1	100.0	100.0	100.0

a/ Other special natural wine in Wine Institute reports.
b/ Proof gallons.
c/ Not reported in shipment data.
Source: Wine Institute Statistical Reports, San Francisco.

periods of January 1975 through December 1975 and January 1976 through December 1976 were compared to the diary purchase data of February 1975 through January 1976.

To compare the reported volumes of wine purchased with the shipment data, it was necessary to make certain aggregations. The shipment data from a secondary source were first secured from Government reports on tax withdrawals (39). The taxation of wine is based primarily upon alcohol content, and thus the shipment data do not correspond with the wine types described in the previous section. The differences in the definitions of wine types for the shipment data and household panel data are noted below:

Wine type	Shipment data	Household panel data
Table	All wine under 14% alcohol that is not flavored (grape or nongrape)	All grape varietal and nonvarietal wines less than 14% alcohol
Dessert	Wine 14-21% alcohol that is not flavored (grape or nongrape)	Wine 14-21% alcohol that may or may not be flavored
Vermouth	Aperitif wine made from grapes and flavored with herbs	Aperitif wine made from grapes and flavored with herbs
Sparkling	Wine containing more than 0.256 grams of carbon dioxide per milliliter and not flavored	Wine containing more than 0.256 grams of carbon dioxide per milliliter and may or may not be flavored
Flavored	Wine under 14% alcohol that has been flavored	Wine under 14% alcohol that may or may not have been flavored but is not a grape base varietal or nonvarietal (generic) table wine
Other	Wines not defined above	Wines not defined above

The shipment data are based on the alcohol content of the wine and the base from which the wine is made, grape or other fruit. The household panel purchase data are grouped into wine types for purposes of marketing research and agree more closely with terms used in wine marketing and merchandising.

Table 6 presents the shipment data and purchase data from the household panel in gallons and percent distribution by wine types. The differences in the percentages of wine types shipped and reported purchased by the panel of households are due to three main factors. The first factor is the differences in the definitions of the various wine types. The second is the degree to which the

panel overrepresents certain types of households in the United States. Third, inventory adjustments could contribute to the differences.

The most notable difference between the household purchase and shipment data occurs in the table wine category. About three-fourths of the total volume of wine bought by the panel was table wine. During a similar period, according to shipment data in table 6, 56 percent and 59 percent of the total volume entering distribution channels was table wine. The table wine purchased by panel members comes at the expense of the dessert, sparkling, and flavored wines. The panel of households bought less of these wine types than appears in the shipment data.

The differences between shipment data and household data might be explained by definition differences and inventory changes. However, the differences most likely occurred because the composition of the panel overstates table wine consumption. The underrepresentation of older households (housewife over 54 years of age) leads to an understatement of sparkling and dessert wine consumption relative to table wine (8, 23, 29, 31). The understatement of flavored wine consumption is likely due to the lack of young singles and underrepresentation of low-income households with a housewife under 25 years old.

III. SIGNIFICANT DEMOGRAPHIC CHARACTERISTICS OF THE WINE PURCHASERS

This chapter deals with the important demographic features that identify households buying different types of wine. Wine-purchasing households are noted on the basis of family size, age of the wife, age of male head, age of purchaser, size of family or household, and education level of the male head. Also, household incomes of wine buying and nonbuying households are compared. The same household demographic characteristics are used to identify households that buy various wine types in different regions of the country.

The focus of this chapter is on domestic wines. Tabular summaries of the same information on households buying imported wines is in appendix tables 9 through 15.

Demographics of Purchasing and Nonpurchasing Households

Only the most important demographics identified in previous work were used to isolate and describe wine purchasing and nonpurchasing households (30,34). These demographics were the age of the wife or female head of the household, age of the male head of household, education level of the male head of the household, size of family or household, and household income. The computed mean values of these major demographics for the purchasing and nonpurchasing households are in table 7.

The major demographics of the purchasing and nonpurchasing households were compared on a regional and on a national basis. On the average, the wife and male head of household tended to be slightly older in the purchasing households than in the nonpurchasing households. The only significant differences at the .05 probability level between the purchasing and nonpurchasing households were

Table 7. Demographics of wine purchasing and nonpurchasing households, by region

Region	Age of wife	Age of male head	Size of family	Education of male head	Household income	Number of households
	Years		Number	Code a/	Dollars	Number
			Nonpurchasing households			
N England	36	39	3.5	3.3*	11,982*	353
Mid Atlantic	34	37	3.7*	3.4*	13,849*	1,211
E N Central	36	39	3.6	3.3*	14,184*	1,536
W N Central	38	41	3.4	3.2*	12,579*	677
S Atlantic	37	40*	3.3	3.5*	13,747*	1,057
E S Central	36*	39*	3.4*	3.3*	12,826*	555
W S Central	38	41	3.3	3.5*	13,097*	663
Mountain	39	41	3.5*	3.6*	12,318*	324
Pacific	38	40	3.4	3.6*	13,549*	677
All regions (simple average) b/	37	40	3.5	3.4	13,126	7,053
			Purchasing households			
N England	37	40	3.5	3.7*	13,991*	317
Mid Atlantic	35	37	3.5*	3.8*	15,860*	906
E N Central	37	39	3.6	3.7*	15,666*	1,002
W N Central	39	42	3.3	3.4*	13,901*	298
S Atlantic	39	41*	3.2	4.0*	15,690*	575
E S Central	39*	42*	3.0*	3.7*	14,952*	135
W S Central	37	40	3.3	3.9*	15,122*	295
Mountain	40	42	3.2*	3.9*	14,347*	189
Pacific	38	41	3.3*	3.9*	15,824*	752
All regions (simple average) b/	38	40	3.3	3.8	15,039	4,469

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more

b/ Statistical significance of differences not determined for all regions

*Indicates statistically different mean values between purchasing and nonpurchasing households at the .05 probability level.

the age of the male head of the household in the East South Central and South Atlantic regions, and the age of the wife in the East South Central region.

Family or household size was smaller for the wine-buying households than for the nonbuying households on a national basis. Regionally, the family sizes of purchasing households were the same as or smaller than for the nonpurchasing households. At the 0.05 probability level, the only statistically significant differences in the sizes of families between the purchasing and nonpurchasing households were in the Middle Atlantic, East South Central, Mountain, and Pacific regions.

Nationally, the male head of households of the wine-buying households had more years of education than those of nonpurchasing households. The levels of education of the male heads of households for the purchasing households in each region were significantly higher than for the nonpurchasing households on a statistical basis at the 0.05 probability level.

In all regions of the country, the average household incomes of the wine-buying households were significantly higher at the 0.05 probability level than for the nonpurchasing households. The wine-purchasing households on the panel, as compared to the nonpurchasing households, can best be characterized as being slightly further along in their life cycles, having smaller families, more highly educated male heads of households, and significantly higher incomes.

Types of Wine Purchased

The volumes and average prices paid for the various domestic wines that the panel households bought from February 1975 through January 1976 are shown in table 8. The majority of the wine purchased was nonvarietal table wine, followed by varietal table wine. Red table wines were the most important, followed by white and then pink table wines. The average prices paid were highest for domestic white table wines in the varietal and nonvarietal classes, followed by the prices for red and then pink table wines. However, the reader should not place a significant amount of emphasis on the differences among the average prices as shown in table 8 because they were calculated over all regions and the varying pricing laws and levels of taxation in each State greatly affect the average prices. Later in this chapter, average prices are shown by region and wine type.

Dessert and flavored domestic wines were next in importance, followed by sparkling wines. Sherry was the most important type of dessert wine bought and demanded high prices. In the flavored wine category, no specific type of flavored wine clearly dominated. The prices of various types of domestic flavored wines did not differ greatly.

Sparkling wines were next in importance in terms of volume purchased, and second in average price only to brandy among the domestic wines. Champagne was the dominant class of sparkling wine, followed by cold duck and then burgundy.

Brandy was the next most important type of wine purchased by the households. Natural brandy dominated the brandies purchased. There was no substantial difference in the prices paid for the various classes of domestic brandy.

Table 8. Volume purchased and average prices paid for domestic wines, and volumes of imported wines purchased

Wine type	Domestic Volume Ounces	Domestic Average price a/ Cents/ounce	Imported Volume Ounces
TABLE WINE	826,289.7		112,981.64
Varietal			
Red	65,845.2	6.1	1,018.0
White	25,696.6	7.2	220.8
Pink	23,237.1	5.0	24.0
All	114,778.9	6.1	1,262.8
Nonvarietal			
Red	294,482.1	4.2	58,042.037
White	199,274.1	4.7	36,639.622
Pink	217,754.2	3.6	17,037.189
All	711,510.8	4.2	111,718.84
DESSERT WINE			
Sherry	59,297.7	5.9	3,919.198
Port	47,399.9	4.8	148.0
Other	1,031.2	7.8	133.8
All	107,728.8	5.4	4,200.999
SPARKLING WINE			
Champagne	23,303.1	9.8	632.0
Cold Duck	14,569.7	8.8	92.6
Burgundy	3,691.6	8.8	89.8
Other	748.8	6.6	456.2
All	42,313.3	9.4	1,270.6
FLAVORED WINE			
Apple	17,516.9	4.7	425.2
Berry	18,946.3	5.7	599.2
Citrus	28,622.3	5.4	12,697.387
Other	23,931.7	5.1	2,104.0
All	89,017.4	5.2	15,825.787
VERMOUTH	13,036.8	5.3	6,660.692
BRANDY			
Flavored	1,418.2	13.2	507.4
Natural	1,228.0	15.3	134.4
All	2,646.2	14.2	641.8
OTHER	1,690.6	7.0	411.6

a/ Calculated over all regions.

Vermouth and "other," a miscellaneous class, were the least important types of wine products bought.

Household Demographics by Type of Wine Purchased

The major demographics of the wine-purchasing households and general purchase information for each domestic wine type are summarized across all regions in table 9. These demographics by wine type and by region are presented in appendix tables 1 through 8 for those readers who have a specific interest in a given region and wine type. Information on imported wines analogous to that shown in this section for domestic wines by wine type and region is shown in appendix tables 9 through 16.

The age of purchaser, along with the ages of the wife and male head of household, are shown in the tables. The ages of the wife or male head may differ from that of the purchaser because the age of the purchaser as reported was current, while the ages of the wife and male head were those when the household joined the panel.

The demographics of those buying varietal table wines are hardly distinguishable from those buying nonvarietal table wine (see appendix tables 1 and 2 for regional statistics). 5/ A number of the same households purchased both wine types and are thus included in both sets of demographics and account for the similar demographics. The varietal table wine purchasing households tended to be slightly less educated than those households buying nonvarietal table wines. The average price paid for nonvarietal table wine was 1.9 cents per ounce less than for varietal table wine.

Almost three times as many households bought nonvarietal table wine as varietal table wine. Six times as much (volume) nonvarietal as varietal table wine was purchased. The Pacific region is the most important nonvarietal and varietal table wine market in the United States (app. tables 1 and 2). The table wine buying households in the Pacific region had the highest average household income on a regional basis among the table wine purchasing households.

The people who bought dessert wines were older than buyers of table wines. Also, families were smaller and incomes slightly lower. The average prices paid for dessert wines were between those paid for varietal and nonvarietal table wines.

Households that bought sparkling wine were slightly younger and more affluent than the households that bought any of the previous three wine types. The average price paid for sparkling wine was notably higher than that paid for other wines. The higher prices for sparkling wines would be expected because of the higher taxation on carbonated wines.

5/ Differences in the quantities purchased and the differences in the demographics of households purchasing different wine types were not tested statistically. Some households bought more than one wine type and thus their demographic characteristics were used in calculating the average household demographics in more than one wine type, invalidating traditional statistical testing procedures.

Table 9. Major household demographics and purchase data, by wine type

Wine type	Age of wife	Age of male	Age of purchase	Education of male	Size of family	Income	Price	Purchases	Purchases	Households
	- - - - Years - - - -			Code a/	Number	$/year	¢/ounce	Ounces	- - - - Number - - - -	
Varietal table	43	41	45	3.8	3.2	14,843	6.1	114,779	2,192	2,045
Nonvarietal table	38	40	44	3.9	3.3	15,235	4.2	771,511	9,854	2,763
Dessert	43	46	52	3.8	3.1	15,076	5.4	107,729	2,180	817
Sparkling	37	40	43	3.9	3.4	15,356	9.4	42,313	893	562
Flavored	36	39	41	3.5	3.4	15,706	5.2	89,018	2,169	1,092
Vermouth	41	44	49	4.0	3.1	15,537	5.5	13,037	330	188
Brandy	37	41	41	3.7	3.3	13,861	14.7	2,646	86	53

a/ See education code in table 7.

The Middle Atlantic and East North Central regions bought the greatest volume of sparkling wine (app. table 4). The East South Central and Mountain regions accounted for the least amounts of sparkling wines purchased and are the least important regional markets in the United States.

The most notable feature about flavored wine purchasing households is their lower average income compared with the rest of the wine buying households. However, the number of households buying flavored wine was exceeded only by those buying nonvarietal table wine.

Households in the East North Central region bought the most flavored wines (app. table 5). The Pacific and Middle Atlantic regions were second in quantity of flavored wine purchased.

Less than 200 households bought vermouth during the study period. With few exceptions, the households buying vermouth were older and had higher incomes than those households purchasing other wines. The Middle Atlantic and East North Central regions clearly dominated the vermouth market (app. table 6).

The largest volume of brandy was bought by only 14 households in the Pacific region. Prices paid for brandy were considerably above those paid for any other wine. The Middle Atlantic and East North Central regions had nearly as many brandy purchasing households as in the Pacific region, but the Eastern households bought less than half the volume purchased in the Pacific region (app. table 7).

The household demographics and purchase data for vermouth, brandy, and "other" wine types as in appendix tables 6 through 8 are based on very few purchases and a limited data base. Any conclusions and inferences drawn from those tables should be used cautiously.

The "other" wine type category includes information from those diaries with unclear or missing information. For no other reason than completeness, the "other" category is included as appendix table 8.

The information presented above translates into some interesting statistics concerning the sizes and number of wine purchases made during a year. The average size of purchase is shown below in terms of ounces and the average number of purchases per wine purchasing household:

Wine type	Size of purchase	Purchases per purchasing household
	Ounces	Numbers
Varietal table	52.4	2.1
Nonvarietal table	78.3	3.6
Dessert	49.4	2.7
Sparkling	47.4	1.6
Flavored	41.1	2.0
Vermouth	39.5	1.8
Brandy	30.8	1.6

The average size purchase was much greater for nonvarietal table wine than any of the other wine types. Such a relationship would be expected because of the importance of nonvarietal table wine in everyday consumption patterns (app. table 32). The other types of wines appeared to be purchased in about the same average quantities, with brandy being the lowest.

The average number of purchases per wine purchasing household was greatest for nonvarietal wine. Dessert wines were next in terms of average purchases per purchasing household. All the other wine types were purchased in about the same frequency.

IV. FACTORS IN WINE PURCHASING

This chapter uses the information collected from the monthly diaries to analyze factors in the individual wine purchases reported by the panel households. The general purchase information in this chapter includes the sex and age of the purchaser, the reason for the wine purchase, the probable or intended consumers of the wine purchase, and the place of purchase.

The data are presented on a regional and on a wine type basis in summary tables. As explained in the previous chapter, statistical testing was not done on the data presented in this chapter to determine if the differences are significant. The inclusion of a household's purchase data in more than two categories invalidates traditional statistical testing procedures.

Sex of Purchaser

Summary statistics concerning the sex of the purchasers of various domestic wine types are presented in table 10. Appendix tables 17 through 23 offer detailed breakdowns of this information by region.

Table 10. Sex of purchaser

	Number of responses			Percentage distribution		
Wine type	Female	Male	Unknown	Female	Male	Unknown
Varietal table	1,157	990	72	52.1	44.6	3.2
Nonvarietal table	5,955	3,729	173	60.4	37.8	1.8
Dessert	1,255	892	33	57.6	40.9	1.5
Sparkling	486	381	26	54.4	42.7	2.9
Flavored	1,378	749	42	63.5	34.5	1.9
Vermouth	193	134	3	58.5	40.6	.9
Brandy	55	31		64.0	36.1	0.0
Total	10,479	6,906	349	59.1	38.9	2.0

Females accounted for about 60 percent of all the wine purchases. Males were not the dominant purchasers for any wine type. They were most important in buying varietal table wines. On a regional basis, there are exceptions to the above generalization that females were the dominant purchasers.

Appendix tables 17 through 23 contain the number of responses and percentage distributions for the seven major wine types defined in this study (see Chapter II for wine type definitions). The number of responses and percentage distributions are presented by region and for the entire continental United States in these tables by wine type.

Appendix table 17 relates to varietal table wines and shows that females were the dominant purchasers of such wines for the entire United States. However, females were the dominant purchasers in only four of the nine regions: New England, Middle Atlantic, East North Central, and Pacific. In all other regions, men were more often the buyers of varietal table wines. The regions of the country where females were the dominant purchasers are the largest varietal table wine markets. Thus, it appears that women buy the larger portion of the total volume.

Females bought the most nonvarietal table wine in eight of the nine regions. Males were the bigger purchaser only in the East South Central region.

Dessert wines were more often bought by females than by males in the United States as a whole. Only in the East South Central and Mountain regions were males the dominant purchasers of dessert wines.

A partial explanation for the dominance of the male purchaser in the East South Central region in buying wines is the type of store in which wine products can be purchased. Authorized sales agencies vary in each of the States that comprise the region. If most of the States of the East South Central region have as their authorized retail outlets something other than supermarkets, it appears that the men will be more important purchasers than in cases where wines are retailed through food stores.

Appendix table 20 gives information on the sex of the purchaser of sparkling wines. In six of the nine regions, females were the dominant buyers of the sparkling wine purchases made by the panel. However, female dominance was not as strong in buying sparkling wines as in table and dessert wine purchases. Males were the dominant purchasers in the East South Central and West North Central and New England regions. Again, it appears that the authorized retail sales agency is an important factor in explaining whether men or women buy most of the wine. However, the type of wine to be purchased also appears to be highly related to the sex of the purchaser. A plausible hypothesis is that the type of wine bought is related to its intended use and thus the purchaser is somewhat, although not directly, related to the type of authorized retail outlet (see "Occasion for Purchase" section in this chapter).

Women were clearly the most important purchasers of flavored wines in all regions of the country except the Middle Atlantic region (app. table 21). Even in the Middle Atlantic region, males accounted for only half of the purchases reported by the panel members. Overall, females were the main buyers of flavored wines and their dominance was stronger than in any other wine type discussed.

Appendix tables 22 and 23 show purchases of vermouth and brandy by sex of the purchaser. The responses in these tables are relatively few, and thus any conclusions drawn should be used cautiously. Women were the dominant purchaser of these two wine types. However, males seem to buy more often in certain regions. In the East South Central region, males largely dominated the vermouth purchases. In contrast, females were clearly the main buyers of vermouth in the Middle Atlantic, East North Central, and Pacific regions.

Age of Purchaser

A summary of the percentage distribution of wine purchasers by age and type of wine is presented in table 11.

Table 11. Age of purchaser

Wine type	Years						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+
	Percent						
Varietal table	1.9	2.8	28.0	20.7	23.4	16.3	7.0
Nonvarietal table	1.7	2.8	28.3	21.3	22.4	17.2	6.2
Flavored	1.3	7.3	35.7	18.3	16.3	15.2	5.9
Dessert	1.6	2.0	17.5	15.6	22.0	26.1	15.1
Vermouth	1.8	0.0	8.8	19.1	34.9	30.3	5.2
Sparkling	4.3	3.7	29.9	18.9	20.9	16.6	5.7
Brandy	0.0	3.5	29.1	16.3	36.1	10.5	4.7

These percentage distributions are a direct reflection of the distribution of the households on the panel and the preference toward various wines by various age groups. All wine types except vermouth are purchased by all age groups. However, there is some notable skewedness to some of the distributions. A higher percentage of the older households purchased dessert wines, while a larger percentage of younger households purchased flavored wines. On a regional basis there are some very notable exceptions which have significant marketing implications.

Appendix tables 24 through 30 contain the number of responses and percentage distributions of the age of the purchasers for the major wine types by region and for the 48 contiguous States. The majority of the buyers of varietal and nonvarietal table wines were between 25 and 54 years old (app. tables 24 and 25). There were some minor deviations on a regional basis, but the majority of the table wine buying households appear to be in those age categories where the most households exist. Generally, the percentage distribution of table wine purchasers by age of purchaser agrees with the distribution by age of male head of household or wife reported in Chapter III.

In comparison to table wine buyers, the dessert wine purchasers tended to be older (app. table 26). The majority of the dessert wine buyers were at

least 45 years old. This was true for the United States as a whole and for most of the regions.

Most people who bought sparkling wine were 25 to 55 years of age (app. table 27). This is very similar to the percentage distribution and the age of purchasers found for varietal and nonvarietal table wines.

More buyers of flavored wines were in the age group 25 to 34 years old than in any other category (app. table 28). This was the greatest concentration of buyers by age among wine types, except for brandies.

The high proportion of the young among flavored wine purchasers was also found in each region. In some regions, over 40 percent of the flavored wine buyers were 25 to 34 years old. This is the only wine type with such a concentration of young buyers. Note that younger people tend to have lower incomes than older ones.

In contrast to flavored wines, the majority of those who bought vermouth were at least 45 years of age (app. table 29). A very small percentage of the vermouth purchasers were less than 35 years old. This skewness toward the higher income categories for vermouth purchases held in all regions of the country except in the West South Central region. This region had only three reports of vermouth purchases, two in the 24 to 34 group and one 35 to 44 years old. The vermouth market appears to be dominated by buyers at least 45 years old.

Appendix table 30 shows that the distribution of brandy purchasers by age groups for the United States is unique among the wine types discussed. The distribution was bimodal, with significant proportions of buyers in the 25 to 34 years and 45 to 54 years of age categories. In all other age groups, the percentage distribution and the age of purchasers are less than in these two categories. Caution should be used in drawing inferences from the brandy data, since only 86 reported purchases were received for the whole United States.

Occasion for Purchase

This section summarizes the occasion for the intended use of the various wine purchases. The households were provided space on the monthly diary to mark whether the wine was bought for a special occasion, everyday use, cooking, or as a gift. Table 12 summarizes the percentage distributions of the intended uses by wine type for the entire United States. Breakdowns of this information by region are offered in appendix tables 31 through 37. Everyday usage was the dominant intended use of all wine types except for sparkling wines, which were intended to be used primarily on special occasions. Cooking and wine intended as a gift were not significant uses of any of the wine types. On a regional basis, there were some exceptions. Appendix tables 31 through 37 present the number of responses and percentage distributions for the seven major wine types for regions and the contiguous 48 States.

Appendix tables 31 and 32 show that the majority of the table wine was bought for an everyday occasion or setting. A slightly higher percentage of

nonvarietals than varietal table wines were intended for such use. Varietal wines were more often bought for special occasions than nonvarietal table wines. The only region in which the above relationships did not hold was the East South Central region. There was little difference between regional and national data on table wine use.

Table 12. Occasion of purchase

Wine type	Special	Everyday	Cooking	Gift
		Percent		
Varietal	34.1	56.2	4.8	4.9
Nonvarietal	23.4	62.6	11.1	2.9
Flavored	31.7	61.3	2.7	4.3
Dessert	17.1	55.7	17.3	9.9
Vermouth	13.5	74.3	11.9	.3
Sparkling	65.5	24.2	.8	9.6
Brandy	30.4	50.0	13.0	6.5

Varietal table wines were more often bought for use as gifts than were nonvarietal table wines. The nonvarietal table wines were much more important for cooking.

Everyday use was also the most common reason for buying dessert wines in the United States as a whole. Special occasions were not as important for dessert wine purchases as they were for the table wine purchases. Some regions showed minor deviations from national data on percentage use for special and everyday occasions.

Dessert wines were much more often bought for cooking than were table wines, and dessert wines were bought for gifts twice as often as table wines.

The Middle Atlantic region made the most purchases of dessert wines to be used as gifts. Of all the dessert wine purchases made in the Middle Atlantic region, 29.2 percent were intended as gifts. This was the second highest intended use in that region. No other region or wine type had such a frequent use as a gift.

Almost two-thirds of all sparkling wine purchases were made for drinking on special occasions (app. table 34). In only about one-fourth of the cases was everyday consumption listed as the intended use. Less than 10 percent of the sparkling wine purchases on a national basis were intended as gifts. Cooking was the least frequent use for sparkling wine.

Regionally, the intended uses of the sparkling wine purchases do not differ significantly from those reported on a national basis. The major deviation was in the Mountain region, where a much higher percentage of the sparkling wine purchases, 85 percent, were for special occasions.

For flavored wines, everyday use dominated the intended usage on a national basis (app. table 35), as over 61 percent of the purchases were made for everyday consumption. Special occasions accounted for slightly over 31 percent of the intended use. Special and everyday uses, taken together, account for about 93 percent of all the flavored wine purchases. Cooking and gifts were minor uses of flavored wine, compared to the wine types discussed above.

Everyday usage was the major reason for buying vermouth (app. table 36). Only 13 percent of the vermouth purchases were for special occasions, and 12 percent were for cooking. Less than 1 percent of all the vermouth purchases were intended as gifts.

While there were some regional differences from the national percentage distributions, everyday use was the main reason for the vermouth purchases. Among the wine types analyzed, vermouth was the most often bought for everyday use.

Half of all the brandy purchases were intended to be used in everyday consumption (app. table 37). Slightly over 30 percent of the brandy purchases were for special occasions; only 13 percent were for cooking. Slightly over 6 percent of the brandy purchases were for gifts. These percentage distributions for brandy are similar to the percentage distributions of intended usages for the other wine types discussed above.

Probable Consumers of Wine Purchases

Table 13 indicates the number of responses and percentage distributions of the persons expected to consume the various wine purchases in the United States. This information is segregated according to wine type and region of the country in appendix tables 38 through 44.

The panel member and male head of the household were the dominant users of both varietal and nonvarietal table wines (app. tables 38 and 39). Friends ranked third, and relatives fourth. In less than 3 percent of the cases, children were the intended users of varietal and nonvarietal table wine.

Some regions deviated slightly from the national percentage distribution in terms of the persons expected to drink the various table wine purchases. But in general, the intended consumers of table wine purchases were the same in every region, whether the wine was a varietal or nonvarietal table wine.

The panel member was the dominant intended user of the dessert wine purchases (app. table 40). The male head of the household was second in importance, while friends and relatives ranked third and fourth. Children were the intended users of the dessert wine purchases in less than 2 percent of all dessert wines reported.

The regions did not deviate significantly in the intended users of the dessert wine purchases from the national averages. The intended users of dessert wines were very similar to those of table wines.

Table 13. Persons who drink wine by wine type

Wine type	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
Varietal	1,899	1,781	182	1,279	974	31.06	29.13	2.98	20.92	15.93
Nonvarietal	8,511	7,890	578	5,725	4,167	31.67	29.36	2.15	21.31	15.51
Dessert	1,724	1,487	77	1,080	841	33.10	28.55	1.48	20.73	16.15
Sparkling	753	663	90	473	376	31.98	28.15	3.28	20.09	15.97
Flavored	1,818	1,524	228	1,164	845	32.59	27.34	4.09	20.86	15.15
Vermouth	265	259	7	206	145	30.05	29.37	.79	23.36	16.44
Brandy	77	62	3	62	48	30.56	24.60	1.19	24.60	19.05

The panel member was also the dominant intended user of the sparkling wine purchases (app. table 41). The male head of household, friends, and relatives ranked next in relative importance. The regions showed no significant deviations from U.S. totals in the percentage distribution of intended users for sparkling wine.

The panel member and male head of the households were the dominant intended users of flavored wines (app. table 42). Regionally, there were hardly any deviations from the percentage distribution of intended users on a national basis. The intended consumers of flavored wines appear to be the same in all regions.

The intended users of the vermouth purchases are shown in appendix table 43. The relative importance of the panel member, male head of the household, friends and relatives remain the same as in the case of the other wine types discussed above. Children were seldom the intended users of vermouth purchases, as would be expected, because it is often used with distilled spirits. Regionally, there were some deviations from the percentage distribution on a national basis. However, any conclusions based on the regional data should be guarded because of the few observations or purchases reported in individual regions of the country.

The relative importance of the intended brandy users differs somewhat from the other wine types (app. table 44). The male head of the household and friends were equally frequent intended users. In addition, relatives increased in importance as intended users of the brandy purchases. There were some differences on a regional basis, but again the limited number of observations prevent firm conclusions about regional differences.

Place of Purchase

The place of purchase differs by wine type (alcohol content) within and between various regions of the country depending upon the State laws concerning authorized retail outlets, which vary widely. Table 14 presents an overview by wine type for place of purchase to provide benchmarks for the reader.

Table 14. Place of purchase

Wine type	Supermarket	Liquor store	Drugstore	Other
	Percent of households			
Varietal table	42.1	47.1	3.8	7.0
Nonvarietal table	50.4	41.0	3.1	5.5
Flavored	55.6	33.4	4.5	6.5
Dessert	47.8	48.1	3.3	5.8
Vermouth	43.6	48.2	3.6	4.6
Sparkling	39.2	48.9	6.3	5.6
Brandy	27.1	61.6	8.1	2.3
Total	51.1	38.8	3.8	6.3

The supermarket was the dominant place in which the wine purchases took place. The liquor store was second in importance with all other types of retail outlets being of minor importance. There were exceptions on a regional and wine type basis, which the remainder of this chapter addresses.

For the varietal table wines, the liquor store was the dominant place of purchase in the United States as a whole. In contrast, the supermarket was the dominant place of purchase for the nonvarietal table wines. About the same percentages of purchases of wines were made in drug stores or "other" retail outlets.

Appendix tables 45 through 51 have data on the place of purchase for the seven major wine types described in this study. Regionally, there were significant deviations from the national percentage distributions for varietal and nonvarietal table wines. However, these regional differences are easily explained by the way authorized retail selling agencies vary among States and regions.

For example, the liquor store clearly dominates the reported purchases of table wines in the Middle Atlantic region, where most States permit wine sales only in a State liquor store. In contrast, the supermarket clearly was the most important retail outlet for varietal and nonvarietal table wines in the Pacific region, where it is legal to sell such wines through supermarket or food stores.

For dessert wines, the liquor store was the dominant place of purchase, closely followed by the supermarket (app. table 47). The drug store and other authorized retail selling agencies were of little importance. Again, regional data differ from national figures because agencies authorized to sell dessert wines differ among States and regions. The higher percentage of alcohol in dessert wines further encourages State regulation of sales.

Nationally, the liquor store was the dominant place of purchase for sparkling wines. The importance of the liquor store varied among regions, depending upon the authorized selling agencies for sparkling wines (app. table 48). The supermarket was second in importance. The drug store and other authorized selling agencies were a distant third and fourth in relative importance as the place to buy sparkling wines.

The supermarket was the dominant place of purchase for flavored wines (app. table 49). The liquor store was a distant second, while the "other" and drug stores as authorized selling retail agencies were distant third and fourth places of purchase. Of all the wine types discussed so far in this section, flavored wine was most often bought at a supermarket.

The liquor store was clearly the dominant place of purchase for vermouth. However, supermarkets were a very close second (app. table 50).

Brandy also was most often bought at a liquor store (app. table 51). Supermarkets were a distant second, while drug stores and other authorized retail selling agencies were distant third and fourth places. The importance of the liquor store as a place of purchase for both brandy and vermouth was expected because of their high alcohol content and the way in which they are usually used with distilled spirits.

V. MARKET CONCENTRATION, PENETRATION, MARKET SHARES, AVERAGE PRICES, AND BRAND PREFERENCES

This chapter presents an overview of the sellers' and buyers' sides of the retail wine market in the United States. The concentration of wine sales, market shares, and market penetration are examined on the sellers' side of the market. On the buyers' side of the retail wine market, the nature of brand preferences of the buying households is explored. The average prices paid by the purchasing households are presented by major company, wine type, and region.

Market Concentration and Penetration of Wine Sales

The percentage of households in each region making at least one wine purchase during the 12-month period was estimated to show the degree of regional market penetration (table 15). Only 38.8 percent, or 4,469 of the 11,522 households on the panel, made at least one purchase of a wine product between February 1975 and January 1976. The 4,469 purchasing households made 21,219 purchases during the 12 months. The sale of wine in the United States is typified by low market penetration.

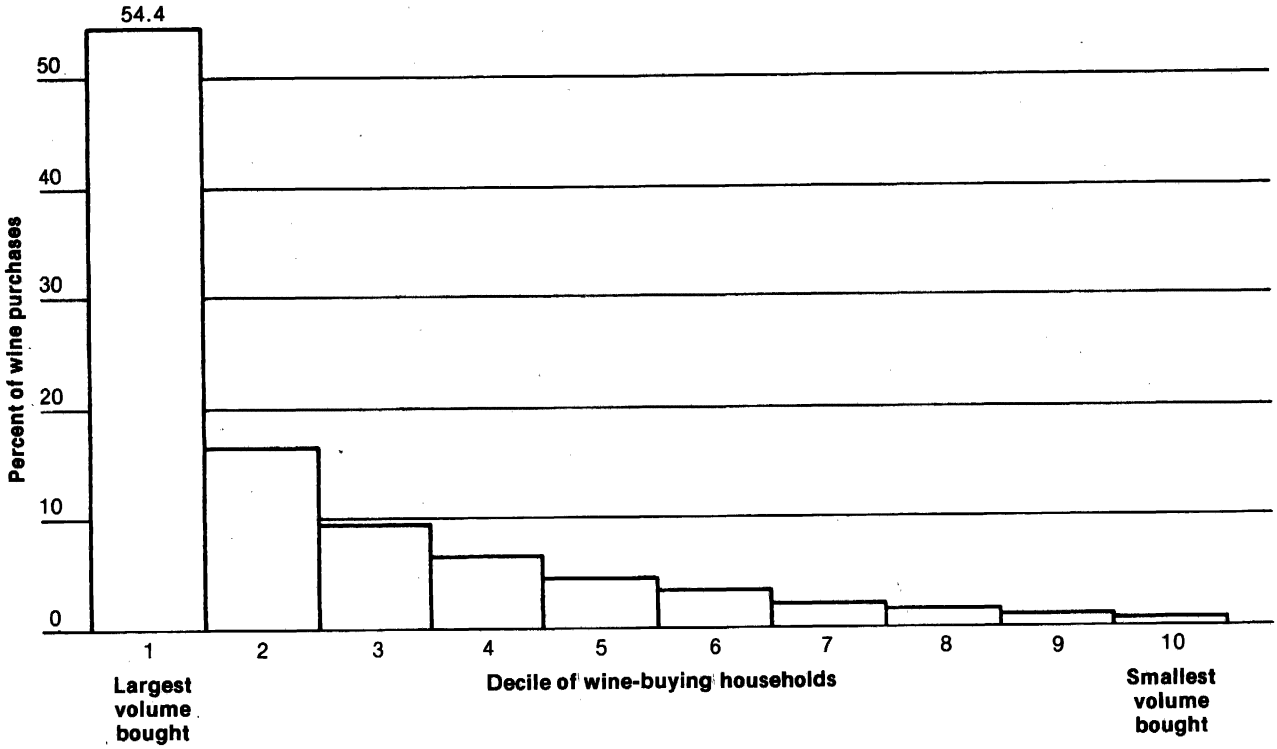
The regional market penetrations ranged from 52.6 percent in the Pacific region to 19.6 percent in the Central region. Both the Pacific region and Northeast States had a higher incidence of purchases than the Midwest, South, or Mountain States.

The fact that relatively few households buy most of the wine in the United States is shown by arraying the purchasing households according to total volume purchased. Figure 3 shows that 54.4 percent of the wine was purchased by only 10 percent of the purchasing households, or 3.8 percent of all the households in the panel. Two-thirds of the wine was bought by 20 percent of the purchasing households or 7.6 percent of all the panel households. Wine sales are concentrated among a few households.

Table 15. Regional market penetration of wine sales

Region	Proportion of households purchasing wine
	Percent
N. England	47.3
Mid Atlantic	42.8
E. N. Central	39.5
W. N. Central	30.6
S. Atlantic	35.2
E. S. Central	19.6
W. S. Central	30.8
Mountain	36.8
Pacific	52.6
All regions	38.8

Figure 3.
Concentration of wine purchases, February 1975 to January 1976



The affluent nature of wine purchasing households was revealed by the demographics of each decile (table 16). The average wife tended to be younger in the smaller purchasing deciles, while the family tended to be larger. In decile 1, the average male head of the household had at least a college education. In general, the years of education of the male heads of household declined as the volume of wine bought decreased.

Table 16. Major demographic features of wine purchasing households and average price paid per ounce, by decile

Decile	Age of Wife	Education of male head	Size of family	Actual income	Price
	Years	Code[a/]	Number	Dollars	¢/ounce
1	41	4.0	3.1	16,724	4.6
2	39	3.9	3.4	15,917	5.9
3	37	4.0	3.3	15,906	6.2
4	37	3.9	3.4	15,594	6.9
5	36	3.8	3.5	15,041	5.7
6	36	3.8	3.5	15,355	7.5
7	37	3.8	3.5	14,666	6.5
8	35	3.8	3.5	14,383	8.5
9	37	3.6	3.5	14,025	7.3
10	35	3.6	3.4	13,611	9.6

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

The most consistent demographic feature that segragates the largest and the smallest wine volume purchasing households was household income. The average household income was $16,724 in decile 1, the households buying the most wine. In the remaining deciles, the household income was less than $16,000 per year.

The average price paid per ounce was much less for the households buying large volumes of wine. This fact is explored in detail in relation to individual wine types later in this chapter. The main reason for the lower prices was the larger size of the wine container.

In general, wine purchasing households, and especially the largest volume purchasing households, tended to be further along in their life cycles, as indicated by the ages of the wives, and had smaller families, more education, and higher incomes.

Table 17 presents, by decile, some general wine purchase information. In all the deciles, most purchasers were females. As one progresses through the deciles from the households buying the most wine to those buying the least, women become even more important as the buyers.

Most wine was bought for everyday use in deciles 1 through 5, the households buying larger volumes. In deciles 5 through 10, wine was bought mainly for special occasions.

Table 17. General purchase information by decile for all wine purchases

	Decile									
	1	2	3	4	5	6	7	8	9	10
	Number of purchases									
SEX OF PURCHASER										
Female	4,586	2,273	1,585	1,220	691	689	377	468	275	278
Male	3,481	1,485	955	678	491	468	277	269	154	165
Unknown	105	72	44	28	27	14	24	13	20	10
OCCASION FOR PURCHASE										
Special	1,769	1,174	976	780	521	533	342	351	223	197
Everyday	6,491	2,498	1,535	1,011	587	517	269	281	152	136
Cooking	906	359	218	205	123	118	45	109	61	99
Gift	259	209	140	106	79	81	52	46	31	38
PLACE OF PURCHASE										
Supermarket	3,589	1,797	1,152	877	541	556	249	371	249	231
Liquor store	3,816	1,652	1,209	867	516	517	361	321	153	177
Drug store	284	142	96	49	55	31	19	26	18	20
Other	477	225	124	130	94	58	45	34	28	26
WHO WILL DRINK										
Panel member	6,940	3,135	2,089	1,521	955	890	514	518	287	287
Male head	6,981	2,974	1,821	1,371	894	819	467	473	280	252
Children	391	297	187	126	123	108	62	47	29	29
Friends	5,055	2,100	1,469	1,012	680	645	395	353	207	198
Relatives	3,732	1,543	1,024	754	477	455	297	257	140	137

Liquor stores dominated the place of purchase in deciles 1, 3, and 7. For the other deciles, supermarkets were more prevalent than liquor stores as the most important retail outlets through which the panel households bought their wine. Drug stores and other types of stores were less important retail outlets. The place of purchase was greatly influenced by the State in which the household resided, since individual States authorize the outlets through which various types of wine can be sold.

The panel member, usually the female, and the male head of household were the dominant intended users of the wine purchases. Friends were third in importance, closely followed by relatives. Children were seldom reported as intended users of the wine purchases.

National Market Shares

The largest wine company (Gallo) accounted for 32.9 percent of all wine purchases reported by the panel of households during the study period (table 18). The four largest wine companies (Gallo, United Vintners, Almaden, and Guild) accounted for 54.1 percent of all wine purchases. The 8 largest wine companies accounted for 64.5 percent of the reported wine purchases, while the largest 10 wine companies accounted for 66.7 percent of the wine purchases reported by the panel of households. The aggregated market share of the wine companies ranked second through tenth is only slightly greater (33.8%) than the relative market share of the largest wine company (32.9%).

The market shares reported above not only indicate the degree of market concentration in the U.S. wine industry, but also substantiate the validity of the household panel data in terms of market shares. The reported 1974 market shares published in Forbes (35) are similar to those based on the reported household purchases, as indicated here:

Company and State of location	Forbes 1974	Household Panel 8/75-1/76
	Percent	
E & J Gallo (Calif.)	28.4	32.9
United Vintners (Calif.)	13.2	12.9
Franzia-Mogen David (Calif. and Ill.)	6.2	4.8
Almaden Vineyards (Calif.)	4.4	4.5
Canandaigua Wine Co. (N.Y.)	3.6	.7
Guild (Calif.)	3.4	3.8
Taylor Wine Co. (N.Y.)	3.3	3.6
Paul Masson Vineyards (Calif.)	2.2	2.0
Christian Brothers Winery (Calif.)	1.4	1.5

Any of the differences in market shares between this study and the Forbes findings can be attributed mostly to (1) the accuracy of the Forbes figures; (2) what the panel represents in terms of all U.S. households as presented in Chap-

Table 18. Quantities of wine purchased by household panel and market shares by wine company by wine type

Type of domestic wine	Gallo	United Vintners	Franzia	Mogen David	Almaden	Canandaigua	Guild	Taylor	Paul Masson	Christian Brothers	All wine companies
	Wine company										
	Amount reported purchased Ounces										
Varietal table	3,545.6	15,154.0	1,382.4	9,219.2	2,175.2	486.4	768.0	307.2	892.8	517.6	57,955.1
Nonvarietal table	120,059.6	43,622.7	8,377.6	352.0	20,109.0	2,603.7	17,435.2	8,347.4	7,289.0	5,795.3	367,548.4
Dessert	21,309.4	4,694.6	358.4	32.0	2,368.0	0.0	1,907.2	8,252.8	2,040.0	1,788.8	54,148.2
Sparkling	14,317.8	1,790.6	932.8	217.6	256.0	0.0	1,241.6	1,822.8	288.0	25.6	27.747.1
Flavored	26,590.8	7,182.4	76.8	5,283.0	115.2	588.8	339.2	1,126.4	537.5	51.2	52,735.9
Vermouth	896.0	838.4	256.0	595.2	25.6	0.0	140.8	422.4	390.4	32.0	5,825.6
Brandy	51.2	278.4	0.0	96.0	179.2	0.0	0.0	0.0	16.0	204.8	1,543.2
Other	57.6	0.0	0.0	0.0	64.0	24.0	25.6	0.0	0.0	0.0	809.5
Total	186,828.0	73,561.0	11,384.0	15,795.0	25,292.2	3,702.9	21,857.6	20,279.0	11,453.7	8,415.3	568,313.0
	Relative market shares Percent										
Varietal table	6.1	26.1	2.4	15.9	3.8	0.8	1.3	0.5	1.5	0.9	
Nonvarietal table	32.7	11.9	2.3	0.1	5.5	0.7	4.7	2.3	2.0	1.6	
Dessert	39.4	8.7	0.7	0.1	4.4	0.0	3.5	15.2	3.8	3.3	
Sparkling	51.6	6.5	3.4	0.8	0.9	0.0	4.5	6.6	1.0	0.1	
Flavored	50.4	13.6	0.1	10.0	0.2	1.1	0.6	2.1	1.0	0.1	
Vermouth	15.4	14.4	4.4	10.2	0.4	0.0	2.4	7.3	6.7	0.5	
Brandy	3.3	18.0	0.0	6.2	11.6	0.0	0.0	0.0	1.0	13.3	
Other	7.1	0.0	0.0	0.0	7.9	3.0	3.2	0.0	0.0	0.0	
All wine	32.9	12.9	2.0	2.8	4.5	0.7	3.8	3.6	2.0	1.5	

ter II of this report; and (3) the types of wines the panel households bought and the wine types produced by the various wine companies.

The relative market shares of the domestic wine market vary by type of wine. For varietal table wines, United Vintners accounted for 26.1 percent and Mogen David 15.9 percent of the U.S. market, based on the household panel data. 6/ The next largest share of the U.S. varietal table wine market was held by Gallo with 6.1 percent. The rest of the U.S. wine companies producing varietal table wines represented only 10.2 percent of the domestic wine purchases reported by the panel, and a large market share of the varietal table wine market does not imply a large market share of all wine.

The nonvarietal table wine purchases were dominated by Gallo with 32.7 percent followed by United Vintners with 11.9 percent. Almaden with 5.5 percent and Guild with 4.7 percent were the only other U.S. wine companies with over 2.3 percent of the nonvarietal table wine market.

The dessert wine market was similar to the nonvarietal table wine market except for the relative market share held by Taylor. Taylor had 15.2 percent of the dessert wine market and was second to Gallo, which had 39.4 percent of that market. The other wine companies maintained their relative importance in dessert wines as in nonvarietal table wines.

Gallo dominated the U.S. sparkling wine market with a 51.6 percent market share. Taylor was a distant second with 6.6 percent and United Vintners was third with 6.5 percent. Next in importance were Guild and Franzia with 4.5 percent and 3.4 percent, respectively. No other U.S. wine companies had more than 1.0 percent of the U.S. domestic sparkling wine market, judging from the reported purchases by the household panel.

The market for U.S.-produced flavored wines was dominated by Gallo with a 50.4 percent market share. United Vintners and Mogen David had 13.6 percent and 10.0 percent, respectively. The remaining U.S. wine companies each had about 2 percent or less of the flavored wine market.

The market for U.S.-produced vermouth was less concentrated than that for other wine types. Gallo (15.4%), United Vintners (14.4%), and Mogen David (10.2%) had roughly equal market shares in vermouth. Taylor, Paul Masson, and Franzia vermouth accounted for 4.4 to 7.3 percent of the domestic vermouth purchases reported by the household panel.

The brandy market was dominated by three firms. United Vintners had 18.0 percent of the market while Christian Brothers had 13.3 percent and Almaden had 11 percent of the market. The remaining U.S. wine companies that produce brandy each had about 6 percent of the market or less.

The relative market shares of the U.S.-produced wine market, according to the household panel data, vary by type of wine.

6/ Concord wines were classified as varietal table wines in this study.

Regional Market Shares and Average Prices 7/

The average prices paid and market shares by volume for the major wineries according to region and wine types are in appendix tables 52 through 59.

The regional average prices and market shares data in those regions where very small quantities of certain wine types were reported purchased (see table 18) should be used in a guarded fashion. Little confidence can be placed in these market statistics when compared to those for regions where large quantities of given wine types were purchased by the panel of households.

The largest share of the market for U.S.-produced varietal table wine on a national basis is held by wineries other than the 13 largest wine companies in the United States (app. table 52). The largest winery, Gallo, did not have the largest market share in any region. Excluding the "other" categories, United Vintners had the largest share in five of the nine regions. Mogen David with its Concord type table wines dominated in the remaining four regions.

The highest average prices paid by households was for Christian Brothers at 11.5 cents per ounce, while the lowest average prices paid by households was for Franzia varietal table wine at 3.7 cents per ounce. For wine companies other than the 13 largest, the average price paid for all U.S.-produced varietal table wine was 6.1 cents per ounce.

With respect to nonvarietal table wine, Gallo clearly had the largest individual market share (32.7%) and dominated in all regions (app. table 53). About one-third of all nonvarietal table wine bought by the panel was a Gallo brand. However, wine companies other than the 13 largest, when considered together, represented 34.8 percent of the nonvarietal table wine bought by panel households. Among those companies identified, panel members paid the highest prices, over 7 cents per ounce, for Taylor, Paul Masson, and Great Western nonvarietal table wine. They paid the lowest prices for wine from the California Wine Company.

The dessert wines were dominated by Gallo products (app. table 54). Almost 40 percent of the volume of dessert wines that panel households bought during the study period were Gallo products. Taylor had 15.2 percent of the dessert wine market and dominated in two regions, while Gallo dominated in the other seven regions. Wineries other than the largest 13 combined represented 18.4 percent of dessert wines purchased by the panel. Panel households paid on the average over 1 cent less for Gallo dessert wine products than the average price of all dessert wines.

Over half the volume of U.S.-produced sparkling wine bought by panel households was from Gallo (app. table 55). The "other" wine companies, taken together, had a 21-percent share of the market. On a regional basis, no other single wine company approached Gallo's share. Average prices paid across all

7/ Statistical testing was not done for significant differences in average prices between wine companies within a given region because there was no basis upon which to standardize the prices for differences arising from such factors as the type of store or the State where the purchase was made.

regions for sparkling wines, for those companies uniquely identified, varied from 5.1 cents per ounce for Mogen David to 19.8 cents per ounce for Christian Brothers. The households paid on the average about 1 cent less for Gallo than the average price paid for all sparkling wines.

As with sparkling wines, over half the volume of domestic flavored wine bought by panel households was Gallo (app. table 56). United Vintners and Mogen David had 13.6 percent and 10.0 percent of the volume, respectively. The wineries other than those in the top 13, combined, accounted for 20 percent of the total volume. In those regions where the market share for Gallo was below 50.0 percent, the market shares for Mogen David or United Vintners were above their national averages.

Wineries among the 13 largest dominated the domestic vermouth market (app. table 57). Nationally Gallo, United Vintners, and Mogen David had 15.4 percent, 14.4 percent, and 10.2 percent of the market, respectively. Regionally, the individual wine company market shares varied widely. The extremes were in the West South Central region (where Gallo had 44.4% and United Vintners had 55.6%), and in the Mountain region (where Gallo and Franzia vermouth each accounted for half of the reported purchases). However, these two regions are relatively unimportant vermouth markets and very few purchases were reported in these regions.

United Vintners had 18 percent of the volume of brandy bought, Christian Brothers had 13 percent, and Almaden 12 percent (app. table 58). Almost half the volume of brandy purchased was from companies not in the top 13. Individual wine companies dominated particular regions of the country. For example, in the Middle Atlantic region, Christian Brothers accounted for 40 percent of the brandy purchases reported by the panel of households in that region. Canandaigua brandies accounted for 53.8 percent of the brandy purchases in the South Atlantic region, and Franzia brandies accounted for all brandy purchases reported in the West South Central region. However, the brandy and vermouth data consist of few observations. Any conclusions drawn from the brandy and vermouth data should be used carefully.

Appendix table 59 shows the market share and average price data for the wine type termed "other." Wine that could not be classified for a number of reasons including incomplete information was termed "other." This table is included only for the sake of completeness.

Brand Preferences in Wine Purchases

To investigate brand preferences, the wines of the 10 largest companies in the United States were identified. The total quantity purchased of a given type of wine produced by each of the largest 10 companies was set equal to a base of 1.000. The total quantity of that given wine type purchased from other companies by the same households was expressed relative to the base of 1.000. In aggregating the data according to wine company, all the wine under all labels or brands of a given wine company were grouped for that company. If the sum of the index numbers for the volume of a given type of wine purchased from all other companies was less than 1.000, the panel of households was deemed as having a brand preference. Thus a brand preference means that the panel bought

more of the preferred brand than of all other brands combined. The sum of the index numbers for all other brands is shown in the last column of table 19.

Table 19 contains these indices for the ten largest wine companies in the United States by wine type. To determine if the panel showed preference (a particular wine type produced by an individual company), the entries across a row for a given wine type for a given company should be summed and compared to the base of 1.000 for the wine type for the company under consideration (see the sum in the last column). For example, see the first line in table 19. The total amount of Gallo varietal wine bought by panel members has the index number 1.000. The same households bought 1.814 times as much varietal table wine from United Vintners (second column), and they bought .235 times as much varietal wine from Franzia, etc. In total, they purchased 5.447 times as much varietal table wine from competing companies. In other words, there appears to be little brand preference for Gallo varietal table wine. The next line makes equivalent comparisons for nonvarietal wines. Other blocks down the table provide comparisons for other companies.

The indices of brand preferences in table 19 show that the greatest degree of brand loyalties for varietal table wines were to United Vintners and Mogen David. This statement is based upon the fact that the households that bought a wine product by these three firms did not buy a larger quantity of varietal table wine from all other companies combined than from the one under consideration.

Mogen David apparently had the strongest brand loyalty in the varietal table wine category. Households that purchased a Mogen David wine bought only 13.3 percent as much varietal table wine from other companies as they bought under Mogen David labels. This strong brand preference for Mogen David varietal table wines results partially from the fact that Concord wine dominates the varietal table wines produced by Mogen David, and the Concord grape has a unique taste and flavor.

The brand loyalty for nonvarietal table wines was weaker than that for varietal table wines. Only the households that bought Gallo and Canandaigua wine products bought less nonvarietal table wines from other companies than from Gallo and Canandaigua.

Panel households expressed brand loyalty or preference for dessert wines produced by Gallo, Guild, and Taylor. For sparkling wines, the panel of households revealed brand preference for Gallo, Franzia, and Guild. In the flavored wine category, only the flavored wines from Gallo and Mogen David had strong brand preferences. All of the Mogen David 20-20 wines were classified as flavored wine because some of them were not made from grapes and they varied in alcohol content from less than 14 percent up to 20 percent.

Paul Masson and Mogen David had the strongest brand preferences in the vermouth category (table 19). Brand preference in brandy purchasing was expressed for Christian Brothers, Guild, and Canandaigua brandies.

In summary, there was some degree of brand preference for all types of wine. However, the panel of households did not show strong brand preference for all wines produced by a single company. Each wine company to some extent serves

Table 19. Index of brand loyalty by wine type for the 10 largest U.S. wine companies

Wine company	Gallo	United Vintners	Franzia	Mogen David	Almaden	Canandaigua	Guild	Taylor	Paul Masson	Christian Brothers	California Wine	Great Western	Gold Seal	Other	Sum for all competing companies
Gallo															
Varietal table	1.000	1.814	.235	.540	.271	--	.105	.022	.079	.054	--	.052	.273	2.002	5.447
Nonvarietal table	1.000	.213	.042	.001	.077	.033	.064	.030	.029	.016	.005	.006	.003	.449	.938
Dessert	1.000	.091	.007	--	.034	--	.047	.150	.022	.031	--	.055	--	.200	.637
Sparkling	1.000	.072	.020	.002	.011	--	.025	.032	.013	--	--	.021	.002	.150	.348
Flavored	1.000	.137	.003	.057	--	.010	.003	.010	.009	.001	--	--	--	.140	.370
Vermouth	1.000	.300	.200	.400	.029	--	.057	.229	.179	--	.057	--	--	.555	2.007
Brandy	1.000	4.938	--	1.875	3.500	--	--	--	--	3.000	--	--	--	3.703	17.016
United Vintners															
Varietal table	.087	1.000	.021	.005	.035	.003	.034	--	.022	.010	--	.004	.005	.445	.671
Nonvarietal table	.760	1.000	.039	.001	.144	.004	.117	.046	.044	.041	.042	.011	.009	.667	1.925
Dessert	1.018	1.000	.016	--	.087	--	.108	.217	.098	.043	--	.022	--	.296	1.905
Sparkling	2.348	1.000	.042	.029	.086	--	.157	.074	.046	--	--	.114	.029	.558	3.483
Flavored	.716	1.000	--	.078	.003	.010	.007	.016	.011	--	--	--	--	.268	1.109
Vermouth	.183	1.000	--	.061	--	--	.031	.107	.244	.038	--	--	--	1.300	1.964
Brandy	.184	1.000	--	.345	.644	--	--	--	--	.230	--	--	--	.445	1.848
Franzia															
Varietal table	.037	.269	1.000	.130	.139	--	.111	--	--	--	--	--	--	.315	1.001
Nonvarietal table	.591	.183	1.000	.003	.128	.006	.281	.020	.019	.021	.031	--	--	.909	2.192
Dessert	4.000	.143	1.000	--	.071	--	.143	.321	.179	--	--	--	--	1.426	6.283
Sparkling	.137	.055	1.000	--	.027	--	--	.027	--	--	--	--	--	--	.246
Flavored	10.326	2.167	1.000	1.333	--	--	--	--	.333	--	--	--	--	4.000	18.159
Vermouth	.700	.625	1.000	--	--	--	--	.100	--	--	.200	--	--	.400	2.025
Brandy	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mogen David															
Varietal table	.008	.015	.003	1.000	.003	.003	.035	.003	--	--	--	.006	--	.057	.133
Nonvarietal table	12.827	6.330	.618	1.000	3.745	.764	3.595	1.818	.600	2.999	--	--	.073	15.638	49.007
Dessert	7.800	6.800	--	1.000	.800	--	14.400	20.800	1.600	.800	--	35.581	--	13.300	101.881
Sparkling	4.412	.353	.346	1.000	.118	--	.235	.347	--	--	--	--	--	1.294	7.105
Flavored	.267	.165	--	1.000	--	.005	.005	.005	--	.005	--	--	--	.172	.624
Vermouth	.043	--	--	1.000	--	--	--	--	.043	--	--	.043	--	.688	.817
Brandy	--	1.333	--	1.000	--	--	--	--	--	.667	--	--	--	1.600	3.600
Almaden															
Varietal table	.271	1.347	.147	.082	1.000	.024	.071	.024	.059	.062	--	.074	.088	2.074	4.323
Nonvarietal table	.877	.313	.133	--	1.000	.003	.241	.081	.084	.024	.013	.026	.007	.671	2.473
Dessert	1.335	.372	.011	--	1.000	--	.157	.346	.514	.211	--	.043	--	.392	3.381
Sparkling	5.375	1.425	.450	.125	1.000	--	1.100	.300	.225	--	--	.600	--	2.550	12.150
Flavored	15.328	1.444	--	1.333	1.000	--	--	.556	.889	.222	--	--	--	4.167	23.939
Vermouth	4.000	1.000	--	2.500	1.000	--	--	7.000	1.000	--	--	--	--	5.227	20.727
Brandy	.286	.286	--	--	1.000	--	--	--	--	.714	--	--	--	.982	2.268

Continued

Table 19. Index of brand loyalty by wine type for the 10 largest U.S. wine companies--Continued

Wine company	Gallo	United Vintners	Franzia	Mogen David	Almaden	Canan-daigua	Guild	Taylor	Paul Masson	Christian Brothers	Calif-ornia Wine	Great Western	Gold Seal	Other	Sum for all competing companies
Canandaigua															
Varietal table	.053	.184	--	.684	.105	1.000	.263	--	.105	--	--	--	--	.294	1.688
Nonvarietal table	.246	.069	.010	--	--	1.000	--	.034	--	.010	--	--	.010	.189	.568
Dessert	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sparkling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Flavored	2.022	.846	--	.522	.043	1.000	--	--	--	--	--	--	--	1.000	4.433
Vermouth	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Brandy	--	--	--	--	--	1.000	--	--	--	--	--	--	--	--	.000
Guild															
Varietal table	.133	4.350	--	.133	.317	--	1.000	--	--	--	.167	--	--	1.433	6.533
Nonvarietal table	.398	.195	.062	.003	.110	.015	1.000	.003	.013	.021	.029	--	--	.744	1.593
Dessert	.248	.201	.013	--	.081	--	1.000	.027	.114	--	.017	--	--	.077	.778
Sparkling	.186	--	.019	--	--	--	1.000	.041	--	--	--	.021	--	.144	.411
Flavored	2.208	1.283	--	--	--	--	1.000	--	--	--	--	--	--	1.113	4.604
Vermouth	.545	1.318	--	.727	--	--	1.000	--	.364	--	--	--	--	2.000	4.954
Brandy	--	--	--	--	--	--	1.000	--	--	--	--	--	--	--	.000
Taylor															
Varietal table	2.201	1.875	.375	2.208	.333	---	--	1.000	.083	.083	--	.375	.188	3.375	11.096
Nonvarietal table	1.440	.325	.051	--	.227	.006	.009	1.000	.120	.112	--	.078	.014	.463	2.845
Dessert	.309	.092	.006	.004	.041	--	.016	1.000	.054	.014	--	.009	--	.140	.685
Sparkling	.695	.112	.014	.014	.014	--	.028	1.000	.014	--	--	.070	.014	.419	1.394
Flavored	.892	.136	--	.239	--	--	--	1.000	.052	.023	--	--	--	.697	2.039
Vermouth	.364	.227	.303	.303	.061	--	--	1.000	.076	--	.121	.061	--	.818	2.334
Brandy	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Paul Masson															
Varietal table	1.068	1.735	--	.201	.329	--	--	.057	1.000	.115	--	.029	--	3.935	7.469
Nonvarietal table	2.137	.565	.053	.004	.451	--	.272	.174	1.000	.056	.009	.014	--	1.367	5.102
Dessert	1.035	.226	.025	--	.213	--	--	.358	1.000	.138	--	.038	--	.784	2.817
Sparkling	4.711	1.067	--	--	.089	--	.089	.089	1.000	--	--	.178	--	1.778	8.001
Flavored	1.811	.238	--	.107	--	.048	--	.167	1.000	--	--	--	--	.532	2.903
Vermouth	.197	.328	--	.131	--	--	--	--	1.000	--	--	--	--	.197	.853
Brandy	--	1.000	--	--	--	--	--	--	1.000	1.600	--	--	--	.750	3.350
Christian Brothers															
Varietal table	.791	4.439	--	.445	.717	--	--	.099	.340	1.000	--	.099	.124	3.017	10.071
Nonvarietal table	1.270	.603	.133	.031	.455	.015	.163	.205	.133	1.000	--	.018	--	1.425	4.451
Dessert	.447	.072	.029	--	.265	--	--	.401	.519	1.000	--	--	--	.261	1.994
Sparkling	37.500	4.000	--	--	3.000	--	--	2.953	1.000	1.000	--	1.000	--	9.680	59.133
Flavored	23.788	4.500	--	6.500	--	--	.500	--	--	1.000	--	--	--	14.375	49.663
Vermouth	.800	5.800	--	2.000	--	--	--	--	--	1.000	--	--	--	1.800	10.400
Brandy	--	.250	--	--	--	--	--	--	--	1.000	--	--	--	.078	.328

--= no purchases reported.

unique segments of the wine market with certain types of wine. There was substitution of wines produced by various companies within a given wine type by buyers.

The degree of substitution in wine purchasing was not surprising because of the many wineries and wine products in the United States. In 1974, the universal product code had over 45,000 entries for wine products. Most wine companies do not produce all types of wine. Even if a wine company should produce a full array of wine types, the products might not be distributed in all areas of the United States. Thus, the limited distribution of wine products by a given company would lead to substitution of wine products from different companies.

VI. THE CHANGING U.S. WINE MARKET

To ascertain how the market for wine in the United States is changing, the households that bought more, less, or the same quantities of wine as in the past were analyzed. The questionnaire which generated this market information was attached to the last month's diary (in January 1976). A sample of the questionnaire is shown in figure 4.

The returned questionnaires were identified with the household identification numbers as used on the panel. With the identification number, it was possible to cross tabulate the information gathered via the questionnaire with the demographic structure of the household and purchasing patterns while the households were on the panel.

The objective in administering the questionnaire was to ascertain who was purchasing (consuming) less, more, or the same quantity of wine compared with the previous year. This information on wine purchasing was correlated with similar questions concerning soft drinks, beer, and hard liquor. Reasons were solicited as to why the purchasing patterns of wine had changed and what were the most important factors influencing the choosing of a particular wine when making a wine purchase.

When asking questions of the recall nature as in the questionnaire, it should be recognized that the responses by some households could be biased. Since wine contains alcohol and would by some be considered "undesirable," there could be a bias in reporting changes in wine consumption. If such a bias would appear, it would most likely be toward overreporting any decreases in wine consumption and underreporting increases in wine consumption.

Wine Drinkers and Nondrinkers

In the questionnaires returned, about 15 percent of the households said they were drinking more wine than in the previous year. About 39 percent of the households reported drinking the same amount of wine, and 16 percent reported drinking less. Over 30 percent said they would never use wine (table 20). This number of nonpurchasing households as a percent of all households is less than that implied in table 15 where 61.8 percent of the households did not make a purchase within the year. The difference arises because not all questionnaires were returned, the question requires some recall, some people who did not

Figure 4. Supplemental questionnaire

Dear Member:

Would you please take a few minutes to tell us whether or not your family's beverage preferences have changed during the past year?

SECTION I

For each beverage listed below, does your family currently consume more, the same or less than they did a year ago? Please check the appropriate box to your right.

	Consume more	Consume same	Consume less	Never consume
1. Regular Soft Drinks	☐	☐	☐	☐
2. Diet Soft Drinks	☐	☐	☐	☐
3. Beer	☐	☐	☐	☐
4. Hard Liquor	☐	☐	☐	☐
5. Wine	☐	☐	☐	☐

SECTION II

Now concentrating just on wine, look at Section I above and answer the appropriate question below:

If your family consumes less wine than a year ago or never consumes wine, please check (√) or write in the reason (or reasons) in the boxes below.

1. Do not like taste ☐
2. Against religious or personal beliefs ☐
3. Too expensive ☐
4. Bad for health ☐
5. Do not know much about wine ☐
6. Other - Write in _____
7. Other - Write in _____
8. Other - Write in _____
9. Other - Write in _____
10. Other - Write in _____

If your family consumes more wine than a year ago or the same amount as a year ago, please check (√) or write in the reason (or reasons) in the boxes below.

1. Enjoy drinking wine with friends ☐
2. Income greater ☐
3. Good for your health ☐
4. Better for you than other alcohol ☐
5. Visit to wine producing areas ☐
6. Other - Write in _____
7. Other - Write in _____
8. Other - Write in _____
9. Other - Write in _____
10. Other - Write in _____

SECTION III

If your family consumes any wine at all during the year, please check the box below that best describes your family's frequency of use.

Daily ☐
3 - 6 Times a week ☐
1 - 2 Times a week ☐
2 - 3 Times a month ☐
Approximately once a month ☐
Less frequently than monthly ☐
Never ☐

SECTION IV

Finally, we are interested in what factors are most important to you in choosing a wine. From the list of reasons below please rank in order of importance the five most significant factors you consider when selecting a wine. In other words put a number 1 in the box after the most important factor, a number 2 in the box after the second most important factor and so on through the fifth factor.

Area Where Wine Produced ☐
Brand Name ☐
Advertisement ☐
Displays at Place of Purchase ☐
Descriptive Information on Label ☐
Price ☐
Advice of Sales Personnel ☐
Advice of Relatives or Friends ☐
Advice of Wine Critic ☐
Other (Write in)
_____ ☐
_____ ☐

purchase wine might drink wine but away from home, or perhaps they drink wine less than once a year.

Of those households that drank more wine during the past year, the New England, Middle Atlantic, East North Central, West North Central, and Pacific regions had a higher percentage of households consuming more wine than the national average percentage (table 20). The three southern regions and the

Table 20. Panel households drinking more, the same, or less wine than during the preceding year, and those never drinking wine

Region	More	Same	Less	Never	Total
			Percent		
N. England	16.97	49.09	18.18	15.76	100.00
Mid Atlantic	18.76	45.50	16.22	19.52	100.00
E. N. Central	17.95	37.68	14.72	29.65	100.00
W. N. Central	14.01	40.45	14.33	31.21	100.00
S. Atlantic	9.94	32.53	15.59	41.94	100.00
E. S. Central	6.47	21.18	16.47	55.88	100.00
W. S. Central	8.81	28.81	14.58	47.80	100.00
Mountain	10.44	40.11	17.58	31.87	100.00
Pacific	16.39	42.21	19.88	21.52	100.00
Total U.S.	14.96	38.60	16.15	30.29	100.00

Mountain region had the smallest percentages of households increasing their consumption of wine. Only 6 to 10 percent claimed to be increasing their wine consumption in these regions. The South Atlantic, East South Central, and West South Central also had the greatest percentages of panel households never drinking wine.

Of the households drinking less wine, almost 75 percent said they now drink wine less often than once a month and 10 percent consumed wine no more than once a month (table 21). It would probably take a major marketing and merchandising program if these households were ever to become important in the wine market. These households are close to being nonpurchasers.

Table 22 shows the percentage of wine nondrinkers that drink at least some beer or distilled spirits. About 38 percent of those who do not drink wine drink at least an occasional beer, and about 30 percent of the nondrinkers of wine drink some distilled spirits. Almost two-thirds of the households that never buy wine never consume alcohol.

About 39 percent of those panel households that never drink said that it was against their religious or personal beliefs (table 23). In the South, nearly half of the households never drinking wine maintained it was against their beliefs. The South, with the greatest percentage of nonbuyers, may be one of the most difficult areas in which to increase market penetration via marketing efforts. The Mountain region had the highest percentage of house-

Table 21. Frequency of wine consumption for those households drinking less wine than during the preceding year

Region	Daily	3-6 times per week	1-2 times per week	2-3 times per month	Once per month	Less than once per month	Total a/
			Percent				
N. England	3.33			10.00	6.67	80.00	100.00
Mid Atlantic	.93	.93	3.70	7.41	12.04	72.22	97.23
E. N. Central	.76		1.52	8.33	11.36	76.52	98.49
W. N. Central			4.44	8.89	13.33	71.11	97.77
S. Atlantic			5.17	18.97	5.17	68.97	98.28
E. S. Central				14.29	7.14	71.43	92.86
W. S. Central			4.65	9.30	6.98	76.74	97.67
Mountain		3.13	3.13	12.50	9.38	68.75	96.89
Pacific	2.06	3.09	4.12	9.28	11.34	69.07	98.96
Total U.S.	.89	.89	3.21	10.34	10.34	74.33	

a/ May not sum to 100% because of nonresponse.

holds, 55 percent, who found wine consumption against their beliefs. In 45 percent of the nonconsuming households in the Pacific states, wine drinking is against their beliefs.

Table 22. Beer and distilled spirits consumption habits of households that never drink wine

Region	Drink some beer	Never drink beer	Drink some distilled spirits	Never drink distilled spirits
		Percent		
N. England	53.85	46.15	42.31	57.69
Mid Atlantic	52.31	47.69	40.00	60.00
E. N. Central	42.86	57.14	36.84	63.16
W. N. Central	43.88	56.12	37.76	62.24
S. Atlantic	33.33	66.67	28.21	71.79
E. S. Central	27.37	72.63	15.79	84.21
W. S. Central	33.33	66.67	33.69	77.31
Mountain	29.31	70.69	20.69	79.31
Pacific	31.43	68.57	26.67	73.33
Total U.S.	38.51	61.49	30.33	69.67

The western regions have the highest percentage of households that do not drink wine because they feel it is bad for their health. For all regions, about 13 percent of those households not drinking wine claimed it to be bad for their health.

Forty-six percent of the nondrinking households said they did not care for the taste of wine (table 23). Over half of the nondrinking households in the New England, Middle Atlantic, and East North Central regions listed taste as a reason for not consuming wine.

Eight percent of the nondrinking households said that wine was too expensive. Almost 20 percent in New England felt it was too expensive, while only 3 percent in the Pacific region listed wine as too expensive to drink.

Only 23 percent of the nonconsuming households listed lack of knowledge about wine as the reason they did not drink it. It might be hypothesized that lack of knowledge about various wine types and their proper use is the underlying cause for several of the reactions shown in table 23. For example, in New England, 46.15 percent of the nonconsuming households said that the reason they did not drink wine was a lack of knowledge about wine.

The reasons given for drinking less wine than in the preceding year are in table 24. Only 4 percent of those households drinking less wine claimed to be doing so because of religious or personal beliefs; 11.52 percent believed it to be bad for their health. Taste was noted by 25 percent of the households, and

Table 23. Reasons listed by households for never drinking wine

Region	Do not like taste	Against beliefs	Too expensive	Bad for health	Know little about wine	Other a/
			Percent			
N. England	57.69	15.38	19.23	7.69	46.15	3.85
Mid Atlantic	51.54	25.38	7.69	12.31	22.31	6.15
E. N. Central	51.50	30.08	6.77	11.65	23.68	5.26
W. N. Central	41.84	37.76	9.18	16.33	25.51	8.16
S. Atlantic	35.26	44.23	8.33	14.10	20.51	10.26
E. S. Central	54.74	48.42	12.63	14.74	26.32	2.11
W. S. Central	45.39	48.23	9.22	10.64	27.66	2.13
Mountain	43.10	55.17	10.34	18.97	20.69	8.62
Pacific	39.05	45.71	2.86	17.14	8.57	4.76
Total U.S.	46.23	38.79	8.28	13.49	22.88	5.77

a/ Includes no response.

Table 24. Reasons listed by households for drinking less wine than during the preceding year

Region	Do not like taste	Against beliefs	Too expensive	Bad for health	Know little about wine	Other a/
			Percent			
N. England	26.67	3.33	43.33	13.33	33.33	10.00
Mid Atlantic	24.07	3.70	24.07	9.26	16.67	35.19
E. N. Central	25.76	3.03	16.67	9.09	26.52	29.55
W. N. Central	24.44	4.44	13.33	4.44	35.56	31.11
S. Atlantic	22.41	5.17	20.69	15.52	20.69	27.59
E. S. Central	46.43		7.14	14.29	21.43	25.00
W. S. Central	27.91	6.98	11.63	13.95	18.60	32.56
Mountain	21.88	6.25	28.13	6.25	15.63	31.25
Pacific	24.74	4.12	18.56	17.53	20.62	29.90
Total U.S.	25.83	4.01	19.72	11.52	22.69	29.67

a/ Includes no response.

not knowing anything about wine was checked by 22.69 percent. Most notable is that 20 percent of households found wine to be too expensive. 8/

Factors Leading to Wine Buying

Households were asked to rank the five most significant factors in buying a wine. These factors and their corresponding weights are in table 25. The first choice was given five points, the second most important factor was give four points, and so on to the fifth choice which was given one point. The weighting permitted a comparison of the 12 factors listed.

The importance to panel households of brand name in the selection of wine is paramount. Brand received more first place votes than any other factor listed. Almost all purchasing households listed brand as important, and a majority of those listed it either as first, second, or third choice. Perhaps brand loyalty is much stronger in some regions than that estimated at the national level in table 25.

Advice of friends and/or relatives was the second most important factor. Price was the third most important factor, and the label was fourth most important. Panelists often mentioned that the label provided information on using and serving wine. The fifth most important factor was flavor. Neither flavor nor menu were provided as choices on the questionnaire, but were written in the "other" category. About 10 percent of the respondents wrote in that flavor was the most important factor in selecting a wine. Advertising, advice of wine critics, and displays were less important.

1975 Wine Purchases Compared with Earlier Buying

Appendix tables 60 through 86 show the number of households and their major household demographics that were buying (or consuming) less, more, or the same quantities of wine, by type of wines. The year February 1975, through January 1976, is compared with the year before. The user of the information is cautioned against making many inferences about individual wine types where observations on the changing wine purchasing patterns of the households are few. Each group of three tables describes households in a given region buying less, more, or the same quantities of wine.

For the United States, as a whole, the tables show that households that bought less wine were either further along in their household life cycle or extremely young. These households tended to have low education levels and low household incomes. In contrast, households that bought at least the same quantity or more wine while serving on the panel tended to be in the middle of their life cycles and had extremely high household incomes and a highly educated male head of the household.

8/ The data from the survey indicate that there is a larger proportion of unemployed and retired fixed-income households in this group. These households may be under financial constraints and find that wine is one of the easier items to stop using.

Table 25. Factors influencing wine purchases

Ranking	Area	Brand	Advertising	Display	Label	Price	Sales people	Friends	Wine critics	Menu a/	Flavor a/	Other
						Point totals b/						
1st	900	2,895	255	80	885	1,385	230	2,400	285	130	1,695	470
2nd	836	1,848	456	156	824	1,956	448	1,540	244	72	276	132
3rd	540	1,002	582	237	810	1,323	435	1,005	198	18	57	78
4th	404	528	452	232	598	682	350	506	162	18	48	30
5th	174	199	261	203	257	282	196	215	124	10	28	29
Total	2,854	6,472	2,006	908	3,347	5,628	1,659	5,666	1,013	248	2,104	739

a/ These factors were not listed on the questionnaire but were written in under the "other" category.
b/ Panel members' first choice was given 5 points, second choice 4 points, and so on to the fifth choice which was given 1 point. Point totals were summed for each factor.

In the New England region, households that bought less wine had past purchasing patterns which included almost the full array of domestic U.S. wines and a significant number of imported wines (app. tables 60-62). Those households drinking more wine, or the same quantity of wine, were using the full array of domestic wines but relatively few imported wine types. The households buying more or the same quantity of wines were much more educated and had higher household incomes than those that bought less.

In the Middle Atlantic region, panel households consuming more or the same quantity of wine far outnumbered those who were using less (app. tables 63-65). Those households that bought more or the same quantities of wine covered the full array of domestic wine types. Households drinking more wine tended to have higher household incomes and more highly educated male heads. However, there appears to be less difference in affluence between households purchasing more or the same quantity of wine in the Middle Atlantic region than in New England.

In the East North Central region, the greater affluence of households buying more or the same quantity of wine, as compared to those buying less, is more apparent (app. tables 66-68). The households' purchases covered the full array of wine types being produced domestically and a few imported wine types.

In the West North Central region, the households that bought the same or larger quantities of wine concentrated their purchases in the table wine, dessert wine, sparkling wine, and flavored wine categories (app. tables 69-71). In contrast, households that bought less wine appeared to be mostly those that had long bought nonvarietal table and flavored wines. The households that bought more or the same quantity of wine were much more affluent than those that bought less wine than the year before.

In the South Atlantic region, the households that bought more or the same quantity of wine bought all kinds of domestic wine types except brandy (app. tables 72-74). But this region is not a large brandy market anyway. The majority of the households that bought less wine used mainly nonvarietal and flavored wine. The households buying more wine were more affluent than those households buying less wine.

In the East South Central region, very few responses were made to questions about changes in quantities of wine bought (app. tables 75-77). A majority of households were buying more or the same quantity and they were buying the full array of domestic wine types except brandy. Those buying more or larger quantities were more affluent than those whose buying volume was declining.

In the West South Central region, those purchasing less wine than before bought mostly table and flavored wines (app. tables 78-80). In contrast, the households purchasing more wine bought all kinds of domestic wine except brandy. Those households purchasing the same quantities of wine had bought all domestic wine types in the past. Again, the household income and education of the male head were higher in these households buying the same quantity or more wine than in households purchasing less than before.

In the Mountain region, the households that bought or drank less wine than before had historical patterns of buying mostly table and flavored wines (app.

table 81). In contrast, households with growing purchases used mostly nonvarietal table and flavored wines (app. tables 82 and 83). On the average, the households buying more or the same quantities of wine as before had more education and household income than those with declining purchases.

Households in the Pacific region purchasing or consuming less wine than before had a history of buying the full array of domestic types (app. table 84). So did households buying more or the same quantity of wine (app. tables 85 and 86). Again, households buying more wine were more affluent. However, it is hard to find any difference in affluence between households that bought the same amount of wine as before and those households that bought less.

In sum, households that reported purchasing more or the same quantity of wines in all regions of the country appeared to have historical wine purchasing patterns that covered the full array of domestic wine types. In contrast, those households that reported buying or consuming less wine concentrated their purchases in the nonvarietal and flavored wines. There were regional deviations from the above generalizations, but the households that reported buying the same quantity or more wine than before appear to be purchasing a broader array of products than those with declining purchases. On the average, households buying more or the same quantities of wine as before had higher household income and education levels than those purchasing less.

VII. MARKET DEMAND FUNCTIONS FOR WINE IN THE UNITED STATES

The wine market in the United States is the major market outlet for grapes, a major agricultural product. Despite the importance of the wine market as an outlet for a major agricultural product, there have not been any significant and successful efforts to estimate statistically the demand function for wine in the United States.

The lack of significant research efforts to investigate the market demand for wine can be partially attributed to the lack of an adequate data base for researchers to analyze. The growth of the U.S. wine market has generated new interest in researching and understanding market demand for wines.

The only published demand estimate has been by Labys (36), who estimated demand functions for wine with time series data. This demand function was for all types of wine aggregated; therefore, his estimated function has limited usefulness for projecting and analyzing the impact of various pricing policies.

The objective of this chapter is to gain an understanding of the price-quantity, income-quantity, and substitution effects in the demand for various wine types in the United States. The specific objectives are:

1. To specify and estimate the parameters of the demand functions for various domestic wine types for each U.S. region,

2. To calculate the price, cross (substitute), and income elasticities from the statistically estimated demand functions, and

3. To generalize about the implications of pricing policies using the various elasticities.

The anticipated results are based on market demand price elasticities. 9/ If such a demand is inelastic and if all other factors remain constant, an increase in the price of the wine type would lead to an increase in total revenues to the industry from the sales of such wine in that region. If the market demand with respect to price is found to be elastic, a decrease in the price of that wine in that region would increase total revenues to the industry. A more complete discussion of the technical aspects of the estimated demand functions and elasticities follows in the remainder of this chapter.

The results presented in this chapter in relation to various industry pricing policies and total industry revenues are summarized in table 26. The various pricing policies discussed are at the industry level and pertain to anticipated results of increasing average prices if all other factors remain constant. The reader interested in the exact point estimates of the elasticities is referred to latter sections of this chapter.

Data and Methods

The estimated demand functions were based on data generated by the panel of households described in Chapter II. The entire cross sectional data set from February 1975 through January 1976 was used.

The market demand function initially specified for each wine type and kind by region was:

$$(1) \qquad Q_{ijkl} = \beta_0 + \beta_1 P_{ijkl} + \sum_{\substack{b=1 \\ b \neq i}}^{n} \beta_2 \overline{P}_{bjkl} + \beta_3 Y_{jkl} + \mu_{ijkl}$$

where:

- i = wine type
- b = kinds of wine defined within the ith type which are substitute wine products
- j = month of purchase
- k = household number
- l = region

9/ The price elasticities used to make generalizations about changes in total industry revenues given price changes are reported as point estimates. Since it is possible in some cases for a confidence interval around those point estimates to include both elastic and inelastic proportions of the demand functions, it is necessary for the user of those estimates to place his own degree of confidence in the estimates and look at the statistical confidence interval. By placing differing degrees of confidence in the estimates or varying levels of probabilities, the statistical confidence intervals constructed around the estimates will widen as the degree of confidence goes down or the probability associated with the t value in constructing the intervals goes up.

Table 26. Directional changes in total industry revenues from an increase in price

Wine type	Region: N. England	Mid Atlantic	E. N. Central	W. N. Central	S. Atlantic	E. S. Central	W. S. Central	Mountain	Pacific
Table wines									
Red varietal	↑	↑	↑	↑	↓		↑	↑	↑
White varietal	↑	↑	↑	↑	↑		↑	↑	↑
Pink varietal	↓	↓	↑	↑	↑		↓	↓	↑
Red nonvarietal	↓	↓	↑	↑	↓	↑	↑	↓	↑
White nonvarietal	↑	↓	↑	↑	↓	↓	↓	↓	↑
Pink nonvarietal	↓	↑	↑	↑	↑	↓	↑	↓	↓
Dessert wines									
Sherry	↑	↑	↑	↑	↑	↓	↑	↑	↑
Port	↓	↓	↑	↑	↑	↑	↑	↑	↑
Flavored wines									
Apple		↑	↑		↑	↑			↑
Berry	↑	↑	↑	↑	↑	↓	↑	↑	↑
Citrus	↑	↓	↑	↑	↑		↑	↑	↑
Other flavors	↑	↑	↑	↑	↑		↑	↑	↑

Legend:
↑ = Total industry revenues would go up as a result of an increase in price. There is inelasticity of price.
↓ = Total industry revenues would go down as a result of an increase in price. There is elasticity of price.
Blank indicates insufficient information or results.

Q_{ijkl} = total quantity per adult member of the household, purchased of the ith wine type in the jth month by the kth household in the lth region (oz/adult)

P_{ijkl} = the deflated price paid per ounce for the ith wine type purchased in the jth month by the kth household in the lth region (¢/oz)

$\overline{P}_{bjkl}$ = the deflated weighted average price paid by all households in the lth region for the ith wine type during the jth month (¢/oz)

Y_{jkl} = the deflated income per adult member of the kth household in the lth region during the jth month ($1,000/adult)

μ_{ijkl} = random disturbance term

β = estimated slope coefficients

The deflation of the prices and income was by the monthly consumer price index for all items.

The parameters of the demand function were estimated with ordinary least squares (OLS). It was assumed that the price of the wine product purchased, the price of substitutes, and household income were predetermined within a given month and thus were used on the right hand side of the demand function, which was estimated via the single equation method of OLS.

The specification of the demand function shown above as equation (1) is traditional in the neoclassical economic sense. The only deviation, which is minor, is the specification of the function in terms of substitute products. Only the wines within a given type such as table, dessert, flavored, and sparkling were considered substitutes within a given type. As an example, the varietal and nonvarietal wines were considered substitutes in the table wine categories. In contrast, a dessert, flavored, sparkling, vermouth or brandy was not considered a substitute for table wine.

The underlying logic for the specification concerning substitutes was that a given wine type usually has certain primary uses. For example, table wines are usually used in conjunction with food, while dessert wines are not usually used as a beverage with a meal. Thus, table wines were assumed to be substitutes for one another but not for dessert wines. It can also be argued that when an individual is going to buy a wine, the selection is usually made from the array of wines within a given type.

The specified demand functions were estimated with two functional forms. The first functional form was linear, as shown in equation (1). The second functional form was the double logarithmic form shown below as equation (2).

$$(2) \quad \ln Q_{ijkl} = \beta_0 + \beta_1 \ln P_{ijkl} + \sum_{\substack{b=1 \\ b \neq i}}^{n} \beta_2 \ln \overline{P}_{bjkl} + \beta_3 \ln Y_{jkl} + \mu_{ijkl}$$

The elasticities for price, cross, and income were calculated via the following formulas:

$$(3) \quad \text{Price elasticity} = \frac{\partial Q}{\partial P} \cdot \frac{\overline{P}}{\overline{Q}}$$

(4) $$\text{Cross elasticity} = \frac{\partial Q}{\partial P} \cdot \frac{\overline{P}}{\overline{Q}}$$

(5) $$\text{Income elasticity} = \frac{\partial Q}{\partial Y} \cdot \frac{\overline{P}}{\overline{Q}}$$

To estimate an elasticity with the linear functional form, it was necessary to take the proper partial derivative and form the ratio of the price or income to the per capita quantity purchased. The double logarithmic functional form results in the estimated parameters of the demand functions being the elasticity coefficients. 10/ The double logarithmic form also results in constant elasticities, regardless of the price-quantity levels, while the linear functional form results in varying elasticity levels given the levels of the price and quantity.

The elasticity coefficients are of interest because they give us insights into the price-quantity relations and total revenues. The price elasticity shows whether or not the quantity demanded (bought) will change relatively more (elastic) or less (inelastic) than the percentage change in the price. Thus, with an elastic demand and all other factors held constant, an increase in the price will decrease total revenues to an industry. But an increase in the price for a product with an inelastic demand will increase the total revenues to the industry. The cross elasticities indicate the degree of substitution or how much the quantity demanded (purchased) will increase on a relative basis given a percentage change (increase) in the price for a substitute product. The income elasticity estimates the percentage change in the quantity demanded (bought), given a percentage change in income. Elasticity coefficients are free of units of measurement.

The demand function and related elasticities were estimated on a regional basis for three reasons: First, it has been shown that wine consumers in different regions of the country buy a different mix of wine products, in terms of both the wine type and the grape from which various wines are produced. Second, the household panel members were originally secured on the regional basis and are representative of the wine market on that basis. Third, since different wine companies tend to serve different regions of the country, the demand analysis is most useful on a regional basis by wine type (regions are delineated in fig. 1, chap. II).

All the estimated demand functions for the wine types identified in this study are presented in appendix tables 87 through 105. The variable codes for the quantity and price variables for which the demand function is being estimated are simply Q and P as shown in equation (1) or lnQ and lnP if a double logarithmic functional form was used. The same is true for income where the code is Y or lnY. In the case of the price of substitute wine products, it was

10/ If a function is of the form $Y = AX^{\beta}$, it can be made linear in a logarithmic transformation to $\log Y = \alpha + \beta \log X$. The general elasticity formula is $E = \frac{dY}{dX} \cdot \frac{X}{Y}$. The derivative of the nonlinear function $Y = AX^{\beta}$ is $\frac{dY}{dX} = A\beta X^{\beta-1}$. This derivative multiplied by the ratio of X to Y or X/AX^{β} equals β. Therefore, the elasticity coefficients simplify to the estimated slope coefficients in the case of the double logarithmic functional form.

necessary to adopt a more complete identification code. The code shown in table 27 was for each wine type used in the final estimation of the various demand functions.

Table 27. Codes used to identify various wine types for which cross elasticities were estimated in the demand functions

Wine type	Alpha code for price of wine type
Varietal red table wine a/	PR DTVR
Varietal white table wine	PR DTVW
Varietal pink table wine	PR DTVP
Nonvarietal red table wine	PR DTNVR
Nonvarietal white table wine	PR DTNVW
Nonvarietal pink table wine	PR DTNVP
Sherry dessert wine	PR DSHRY
Port dessert wine	PR DPORT
Sparkling champagne	PR DSPCH
Imported brandy	PR IBRDY
Imported vermouth	PR IVER

a/ Does not include Concord wine.

In addition to the estimated parameters of the demand functions in the appendix tables, the t-values for determining statistical significance of the estimated parameters are shown below the parameters estimates. The t-values are calculated to test the null hypothesis that the estimated parameters do not differ significantly from zero. Statistical significance in this study was assumed when the t-values were equal to or greater than 1.0 in absolute value.

Other statistical measures of goodness of fit shown in the appendix tables are the R-squared (R^2), which is the ratio of the explained sum squares to the total sum of squares for the dependent variable, and the standard errors of the estimate for the equations (S). Statistical information about the variables in the demand functions includes the standard deviation (S_y), the mean of the dependent variable, and the means of the explanatory variables. The number of purchases or observations used to estimate the demand functions is indicated by n.

The final choice as to the specification (variables included) and functional form used was based upon the R^2, S, and t-values, and the signs and sizes of the estimated parameters.

Table Wines

Red Varietal

The estimated demand functions for red varietal table wine are shown in appendix table 87. In the East South Central region, the household panel did

not report enough purchases to statistically estimate a demand function. The price and income elasticity coefficients for domestic red varietal table wine are shown by region in table 28.

Table 28. Estimated elasticity coefficients for red varietal table wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DTNVR
N. England	-0.711		
Mid Atlantic	-0.751	0.266	
E. N. Central	-0.888	0.236	
W. N. Central	-0.354		
S. Atlantic	-1.065		
E. S. Central a/	---	---	
W. S. Central	-0.958	0.588	
Mountain	-0.927	0.555	
Pacific	-0.808	0.498	1.048

a/ Too few observations to estimate the relationship.

Source: Appendix table 87.

The elasticity coefficients show that in all regions of the country (except the South Atlantic) where elasticity coefficients were estimated, the market demand for red varietal table wine is inelastic with respect to price. In those regions where the inelastic demand was found, an increase in price will result in greater total revenues to the industry if all other factors are constant. That is, the relative increase in price will be greater than the relative decrease in the quantity demanded. In contrast, the South Atlantic region has an elastic market demand with respect to price for red varietal table wine. In the South Atlantic region, a decrease in price would bring greater total revenues to the industry if all other factors are constant.

Statistically significant income elasticities were found in only five regions of the country for red varietal table wine. The regions were the Middle Atlantic, East North Central, West South Central, Mountain, and Pacific. In all cases, a positive relationship was found between the level of purchases of red varietal table wine and household income. The elasticity coefficients were all between 0 and 1.0.

Only in the Pacific region was a significant statistical relationship found between the price of red varietal table wine and another substitute wine product. In this region, the substitute product was nonvarietal domestic table wine (PR DTNVR). In the Pacific region, a 1-percent increase in the price of domestic nonvarietal red table wine will lead to a slightly greater than 1-percent increase in the quantity of red varietal table wine purchased. In all other regions of the country, no substitutes were significant on a statistical basis.

The fact that no other substitutes were found except in the Pacific region is not surprising. The Pacific region is the home of much of the wine industry, and consumers know about the large variety of products available at retail.

White Varietal

The estimated statistical demand functions for white varietal table wines are shown in appendix table 88. The estimated elasticity coefficients for white varietal table wines are in table 29. There were too few observations in the East South Central region to statistically estimate a demand function for white varietal table wine (table 29).

In all regions of the country where price elasticities for white varietal table wine were estimated, the market demand was found to be inelastic with respect to price. This implies that an increase in price for white varietal table wine with all other factors held constant would lead to an increase in the total revenues to the wine industry.

Table 29. Estimated elasticity coefficients for white varietal table wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DTNVW	PR DTVR
N. England	-0.363			
Mid Atlantic	-0.485	0.669		
E. N. Central	-0.774			
W. N. Central	-0.791 b/			
S. Atlantic	-0.714			
E. S. Central a/	---	---		
W. S. Central	-0.702 b/	0.601 b/		
Mountain	-0.682		1.124	0.634
Pacific	-0.648	0.338		

a/ Too few observations to estimate the relationship.
b/ Estimated at the mean values of the variables via the linear functional form.
Source: Appendix table 88.

Only in the Middle Atlantic, West Central, and Pacific regions were significant income coefficients found for white varietal table wine. In all three regions, the income elasticity coefficients were positive and less than 1.0.

Only in the Mountain region were significant cross elasticities found in estimating the white varietal table wine demand functions. The substitutes in the Mountain region were domestic nonvarietal white table wine (PR DTNVW) and domestic red varietal table wine (PR DTVR). It was found that a 1-percent increase in the price of domestic nonvarietal white table wine had twice the effect upon the demand for white varietal table wine as did an increase in the

price of red varietal table wines. However, the interpretation on these cross elasticities should be used cautiously, since the market demand function in the Mountain region was estimated with only 15 observations, which left only 11 degrees of freedom.

Pink Varietal

The estimated statistical demand functions for pink varietal table wine are in appendix table 89. The elasticity coefficients estimated from such demand functions are in table 30. Because so few observations were available, no pink varietal table wine demand function was estimated in the East South Central region.

Table 30. Estimated elasticity coefficients for pink varietal table wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DTNVP
N. England	-1.688	0.420	
Mid Atlantic	-1.028	0.603	0.623
E. N. Central	-0.746	0.391	
W. N. Central	-0.528 a/	0.437 a/	
S. Atlantic	-0.605		
E. S. Central b/	---	---	
W. S. Central	-1.121	0.723	
Mountain	-4.160		
Pacific	-0.947	0.566	

a/ Estimated at the mean values of the variables via the linear functional form.
b/ Too few observations to estimate the relationship.
Source: Appendix table 89.

In four out of the eight regions, there was an elastic market demand for pink varietal table wine. These were the New England, Middle Atlantic, West South Central, and Mountain regions. In these regions, a decrease in price would lead to an increase in total revenues for the industry if all the other factors remained constant. In the remaining four regions for which demand functions were estimated, an inelastic market demand existed with respect to price. In these latter regions, the East North Central, West North Central, South Atlantic, and Pacific regions, an increase in price would lead to an increase in total revenues for the industry if all other factors remained constant.

Significant income coefficients were found for pink varietal table wine in six out of the eight regions for which demand functions were estimated. In all instances, the income elasticity coefficients were between 0 and 1.0. There is

a positive relationship between income levels and the quantity of pink varietal table wine purchased.

Only in the Middle Atlantic region was a significant substitute product found for pink varietal table wine. In the Middle Atlantic region, the coefficient associated with the price of domestic nonvarietal pink table wine was significant (PR DTNVP). The coefficient was slightly less than 1. This means that a 1-percent increase in the price of domestic nonvarietal pink table wine would increase the quantity of pink varietal table wine bought slightly less than 1.0 percent.

Concord

The estimated demand functions of Concord wines are shown in appendix table 90. The Concord demand functions were estimated separately from the red varietal table wines because of the nature of the product. The Concord grape produces a unique flavor in wines that is appreciably different from other red varietal table wines made from French hybrid or Vinifera (European type) grapes. Elasticity coefficients for Concord wines in table 31 show that in four out of nine regions for which statistical demand functions were estimated, the market demand is inelastic with respect to price. This implies that in the New England, East North Central, West North Central, and South Atlantic regions, an increase in the price of Concord wine will lead to a decrease in the quantity purchased, and the total revenues for the industry will go up if all other factors remain constant. In contrast, in the Middle Atlantic, East South Central, West South Central, Mountain, and Pacific regions, a decrease in the price of Concord wines would lead to increased total revenues for the industry if all other factors remained constant.

Table 31. Estimated elasticity coefficients for Concord varietal table wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DTVR
N. England	-0.478	0.260	
Mid Atlantic	-1.067	0.328	
E. N. Central	-0.659	0.243	
W. N. Central	-0.793		
S. Atlantic	-0.695		
E. S. Central	-1.146	0.276	
W. S. Central	-1.331		
Mountain	-1.156		
Pacific	-1.291	0.170	0.468

Source: Appendix table 90.

In five out of the nine regions for which statistical demand functions were estimated for Concord wines, significant income coefficients were found. In all cases, the elasticity coefficients associated with income for Concord wine are between 0 and 1.0. Thus, a 1-percent increase in the household income would increase purchases of Concord wines something less than 1-percent with all other factors held constant.

Only in the Pacific region was a significant substitute found for Concord wines. The substitute was the price of domestic red varietal table wines (PR DTVR) that was not Concord. It is not surprising that the statistically significant coefficient for the substitution was found only in the Pacific region. This result is much like the one above in which the price of domestic nonvarietal red table wines was the substitute for varietal red table wines other than Concord.

Red Nonvarietal

The estimated statistical demand functions for red nonvarietal table wine are shown in appendix table 91. The estimated elasticity coefficients for red nonvarietal table wine derived from those statistical demand functions are shown in table 32. In four out of the nine regions, an elastic market demand with respect to price was found for red nonvarietal table wine. These were the New England, Middle Atlantic, South Atlantic, and Mountain regions. The implications for pricing policies are that a reduction in price of red nonvarietal table wine, with all other factors remaining constant, would lead to an increase in total revenues for the industry in those regions. In contrast, in the East North Central, West North Central, East South Central, West South Central, and Pacific regions, the elasticity of the market demand with respect to price for red nonvarietal table wine is inelastic. In these five regions, an increase in price would result in an increase in the total revenues to an industry if all other factors were unchanged.

Table 32. Estimated elasticity coefficients for red nonvarietal table wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DTVR	Cross elasticity coefficient PR DTVW
N. England	-1.223	0.151		
Mid Atlantic	-1.233	0.130	0.225	0.428
E. N. Central	-0.712	0.357		
W. N. Central	-0.906	0.144		
S. Atlantic	-1.012			
E. S. Central	-0.786	0.121		
W. S. Central	-0.936	0.269		
Mountain	-1.092			
Pacific	-0.833	0.510		

Source: Appendix table 91.

In seven out of the nine regions, a significant income coefficient was associated with red nonvarietal table wine. All of the coefficients were positive and were in the range of 0 to 1.0. Thus, a 1-percent increase in household income in these regions is associated with something less than a 1-percent increase in the quantity of nonvarietal red table wines purchased, if all other factors remain constant.

In the Middle Atlantic region, the price of domestic varietal red table wines (PR DTVR) and the price of domestic varietal white table wines (PR DTVW) were significant. Note that in both of these substitutes the elasticity coefficients are between 0 and 1.0. However, a 1-percent increase in the price of domestic white varietal table wine has almost twice the impact of a 1-percent increase in the price of red varietal on the quantity of red nonvarietal table wine purchased.

White Nonvarietal

The estimated statistical demand functions for white nonvarietal table wine are in appendix table 92. The estimated elasticity coefficients derived from the statistical demand functions are shown in table 33. In five of the nine regions in which the statistical demand functions were estimated, there was an elastic market demand with respect to price found for white nonvarietal table wine. In these five regions, an increase in the price of white nonvarietal table wine would lead to a decrease in the total revenues to the industry if all other factors remained constant. In the remaining four regions of the country, the New England, East and West North Central, and Pacific regions, an inelastic market demand with respect to price was found. In these four regions, an increase in the price of white nonvarietal table wine would lead to an increase in total revenues to the industry if all other factors remained constant.

Table 33. Estimated elasticity coefficients for white nonvarietal table wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DTVW
N. England	-0.772	0.296	
Mid Atlantic	-1.038	0.378	0.230
E. N. Central	-0.809	0.339	
W. N. Central	-0.961	0.276	
S. Atlantic	-1.197	0.154	
E. S. Central	-1.039	0.444	
W. S. Central	-1.017	0.247	
Mountain	-1.003		
Pacific	-0.790	0.433	

Source: Appendix table 92.

In eight of the nine regions, a significant and positive income coefficient was found for white nonvarietal table wines. Only in the Mountain region was the income coefficient not statistically significant. In the eight regions where a statistically significant income coefficient was found, the range of the coefficient was between 0 and 1.0, indicating that a 1-percent increase in household income would lead to something less than a 1-percent increase in the quantity of white nonvarietal table wine purchased.

Only in the Middle Atlantic region was a significant substitute product coefficient found in the white nonvarietal table wine demand function. It was the price of domestic white varietal table wine (PR DTVW). The cross elasticity coefficient was only 0.23.

Pink Nonvarietal

The estimated demand functions for pink nonvarietal table wine are in appendix table 93. The elasticity coefficients estimated from the statistical demand functions for pink nonvarietal table wine are in table 34. In five of the nine regions in which the pink nonvarietal table wine demand functions were estimated, an elastic market demand with respect to price was found for pink nonvarietal table wines. These regions consisted of the New England, South Atlantic, East South Central, Mountain, and Pacific regions. In these regions, an increase in the price of pink nonvarietal table wine would lead to a decrease in total revenues to the industry if all other factors remained constant. In the remaining regions, the Middle Atlantic, East North Central, West North Central, and West South Central, the demand for pink nonvarietal table wines was inelastic with respect to price. In these regions, an increase in the average price of pink nonvarietal table wine would lead to an increase in the total revenues earned by the industry if all other factors remained constant. The total revenues would increase because the relative increase in the price would exceed the relative decrease in the quantity demanded as a result of such a price change.

Table 34. Estimated elasticity coefficients for pink nonvarietal table wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DTVP	PR DTVR
N. England	-1.018			
Mid Atlantic	-0.994	0.332		
E. N. Central	-0.730	0.351		
W. N. Central	-0.890	0.106	0.115	
S. Atlantic	-1.283	0.104		
E. S. Central	-1.747			
W. S. Central	-0.118		0.427	0.459
Mountain	-1.026	0.321		
Pacific	-1.031	0.189		

Source: Appendix table 93.

In six of the nine regions, a positive and statistically significant income coefficient was found for the pink nonvarietal table wines. These were the Middle Atlantic, East North Central, West North Central, South Atlantic, Mountain, and Pacific regions. In the remaining three regions, the income coefficient was not statistically significant for pink nonvarietal table wines. In the six regions where significant coefficients were associated with the household income, the range of the income coefficients and the corresponding elasticity coefficients was less than 1.0. Again, this indicates that a 1-percent increase in household income leads to something less than a 1-percent increase in quantity purchased of pink nonvarietal table wines.

In two regions, the West North Central and the West South Central, significant substitutes were found in the pink nonvarietal table wine function. In the West North Central region, the significant substitute product for pink nonvarietal table wine was domestic varietal pink table wines (PR DTVP). In the West South Central region, domestic varietal pink table wine (PR DTVP) as well as domestic varietal red table wine (PR DTVR) were found to be significant substitutes for pink nonvarietal table wines. In the West South Central region, the cross elasticities between the two substitutes and pink nonvarietal table wine had essentially the same magnitudes. This is in contrast to previous results above, in which some regions had more than one substitute. Usually, the importance or the relative magnitudes in those was such that one substitute was twice as important as the other substitute.

Dessert Wines

Sherry

The estimated statistical demand functions for sherry dessert wines by region of the country are in appendix table 94. The estimated elasticity coefficients for sherry derived from these statistical demand functions are shown in table 35. In eight out of the nine regions, the market demand for sherry dessert wines was inelastic with respect to price. Only in the East South Central region was an elastic market demand with respect to price found for sherry dessert wines. In fact, in the East South Central region, the coefficient does not differ significantly from -1.0. Thus, one would accept the alternative hypothesis that the elasticity of demand with respect to price for sherry dessert wines in the East South Central region is essentially at the point of unitary elasticity. Thus, the present price levels maximize the total revenues to the industry from sherry sales in the East South Central region.

In the remaining eight regions, the inelastic demand for sherry dessert wines implies that an increase in price would result in an increase in total revenues to the industry if all other factors remained constant.

In seven out of nine regions, a significant and positive slope coefficient for income was associated with the per adult quantitites of sherry dessert wines bought. In all of these regions, the income elasticities were estimated to be between 0 and 1.0. The highest income elasticity was estimated to be 0.407 in the New England region, while the lowest significant slope coefficient and elasticity was estimated to be the 0.165 in the East North Central region.

Table 35. Estimated elasticity coefficients for sherry dessert wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DPØRT
N. England	-0.979	0.407	
Mid Atantic	-0.642	0.228	
E. N. Central	-0.223	0.165	
W. N. Central	-0.752	0.261	
S. Atlantic	-0.752		
E. S. Central	-1.007	0.256	
S. W. Central	-0.645		
Mountain a/	-0.713 a/	0.326 a/	2.018 a/
Pacific	-0.288	0.372	

a/ Estimated at the mean values of the variables via the linear functional form.
Source: Appendix table 94.

Only in the Mountain region was a significant substitute product found for sherry in terms of domestic port wines (PR DPØRT). In the Mountain region, the cross elasticity coefficient was slightly greater than 2.0, indicating that a 1-percent increase in the price of port wine would lead to something slightly more than a 2-percent increase in the per adult quantities of sherry wines purchased.

Port

The statistical demand functions estimated for port dessert wines are in appendix table 95. The elasticity coefficients associated with port dessert wine as derived from these statistical demand functions are in table 36. In seven of the nine regions, inelastic market demands with respect to price for port dessert wines were found. In these regions, an increase in the price of port dessert wines would lead to an increase in total revenues to the industry if all other factors remained constant. Only in the New England and Middle Atlantic regions were elastic market demands for port dessert wine found with respect to price.

In seven of nine regions, significant coefficients were associated with the per adult income levels. In all of these regions, the elasticity coefficients were positive but less than 1.0. Thus, an increase in the adult per capita household income in these seven regions would lead to an increase in the quantity of dessert wines bought per adult, but relatively less than the relative increase in household income per adult.

In only two regions of the country was a significant coefficient associated with the price of a substitute product for port dessert wines. The price of domestic sherry (PR DSHY) in the South Central and Pacific regions was a significant variable in explaining the variability in the per adult member of the

Table 36. Estimated elasticity coefficients for port dessert wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DSHRY
N. England	-1.144	0.174	
Mid Atlantic	-1.441	0.343	
E. N. Central	-0.964		
W. N. Central a/	-0.798 a/	0.175 a/	
S. Atlantic	-0.993		0.832
E. S. Central	-0.075	0.747	
W. S. Central	-0.840	0.185	
Mountain a/	-0.759 a/	0.350 a/	
Pacific a/	-0.276 a/	0.386 a/	0.422 a/

a/ Estimated at the mean values of the variables via the linear functional form.
Source: Appendix table 95.

household variation in the quantity of port wines purchased. In both cases these cross elasticity coefficients were less than 1.0.

Flavored Wines

Apple

The estimated statistical demand functions for apple flavored wines are shown in appendix table 96. The various price and income elasticity coefficients associated with apple flavored wine on a regional basis are shown in table 37.

Table 37. Estimated elasticity coefficients for apple flavored wine by region

Region	Elasticity of price	Elasticity of income
N. England	0.061 a/	0.392
Mid Atlantic	-0.495	0.383
E. N. Central	-0.321	0.360
W. N. Central	0.059 a/	0.524
S. Atlantic	-0.480	
E. S. Central	-0.833	
W. S. Central	0.158 a/	0.237
Mountain	-0.105 a/	
Pacific	-0.376	-0.227

a/ Not significantly different from zero.
Source: Appendix table 96.

The estimated elasticity of demand with respect to price for apple flavored wine in five out of nine regions was found to be inelastic. These were the Middle Atlantic, East North Central, South Atlantic, East South Central, and Pacific regions. In these five regions, the inelasticity of demand with respect to price implies that a pricing policy that would increase the price of apple flavored wines would lead to an increase in the total revenues to the wine industry if all other factors remained constant.

In the New England, West North Central, West South Central, and Mountain regions of the country, an increase in the slope coefficient associated with the price of apple flavored wines did not differ significantly from zero. This implies a perfectly inelastic demand for such wines in these regions.

In six out of the nine regions, significant slope coefficients were associated with the demand for apple flavored wine. However, in five of these six regions, the elasticity coefficients were positive. In the sixth region, the income elasticity coefficient for apple flavored wines was negative. In all cases, the absolute value of the elasticity of demand coefficients for apple flavored wines with respect to income was less than 1.0 in absolute value. The region in which the negative income elasticity was found was the Pacific region. In the West South Central, East and West North Central, Middle Atlantic, and New England regions, a positive coefficient with respect to income was found for apple flavored wines.

Berry

The estimated statistical demand functions for berry flavored wines by region are in appendix table 97. The price elasticity and income elasticity coefficients associated with the statistical demand functions for berry flavored wines are shown in table 38.

Table 38. Estimated elasticity coefficients for berry flavored wine by region

Region	Elasticity of price	Elasticity of income
N. England	-0.497	0.216
Mid Atlantic	-0.326	0.366
E. N. Central	-0.238	0.303
W. N. Central a/	-0.543 a/	0.363 a/
S. Atlantic	-0.591	0.266
E. S. Central	-1.110	
W. S. Central	-0.764	
Mountain	-0.668	
Pacific a/	-0.473 a/	0.332 a/

a/ Estimated at the mean values of the variables via the linear functional form.

Source: Appendix table 97.

The elasticity of demand coefficients with respect to price for berry flavored wines shows that in eight of the nine regions, the demand for berry flavored wines was inelastic. In these eight regions, with all factors remaining constant, an increase in the price of berry flavored wines would lead to an increase in total revenues to the industry. In contrast, in the East South Central region, an elastic demand was found for berry flavored wines. Only in this region would a decrease in the price of berry flavored wines result in an increase in the total revenues of the wine industry.

In six out of the nine regions, significant coefficients were associated with the income variable in the berry flavored wine statistical demand functions. In these six regions, the New England, Middle Atlantic, East North Central, West North Central, South Atlantic, and Pacific, the elasticity coefficients range from 0.216 to 0.366. Thus, a 1-percent increase in the income per adult member of the household would lead to something less than a 1 percent increase in the quantity of berry flavored wines bought.

Citrus

The estimated statistical demand functions for citrus flavored wines are in appendix table 98. The price and income elasticity coefficients associated with citrus flavored wines are in table 39.

Table 39. Estimated elasticity coefficients for citrus flavored wine by region

Region	Elasticity of price	Elasticity of income
N. England	-0.584	1.079
Mid Atlantic	-1.120	0.559
E. N. Central	-0.702	0.445
W. N. Central	-0.893	
S. Atlantic	-0.740	0.189
E. S. Central a/	---	---
W. S. Central	-0.873	0.539
Mountain	-0.846	
Pacific	-0.961	0.133

a/ Too few observations to estimate the relationship.
Source: Appendix table 98.

In eight of the nine regions, significant coefficients were associated with the price of citrus flavored wine. In seven of the eight regions where a significant coefficient was associated with the price of citrus flavored wines, the demand with respect to price was found to be inelastic. In these regions, an increase in the price of wine would result in an increase in total revenues, since the relative decrease in volume purchased would be less than the relative increase in price. Only in the Middle Atlantic region was the estimated market demand with respect to price for citrus flavored wines elastic. Thus, only in

this one region would a decrease in price lead to an increase in total revenues for the industry.

In six out of eight regions for which statistical demand functions were estimated for citrus flavored wines, coefficients associated with the income variable were significant. In five of the six regions, the elasticity coefficient was between 0 and 1.0, while in the New England region the elasticity coefficient with respect to income was slightly greater than 1.0 Thus, in these six regions, the elasticity coefficients imply that an increase in the relative income would lead to an increase in the quantity of citrus flavored wines purchased per adult.

Other

Those flavored wines that could not be classified as apple, berry, or citrus, were grouped and termed "other flavored wines" in this study. The statistical demand functions estimated for other flavored wines are in appendix table 99. In eight of the nine regions, significant coefficients were associated with the price variable; in only five out of the nine regions were the coefficients associated with income significant.

In the eight regions in which the coefficients associated with price were statistically significant, the market demand with respect to price for other flavored wines was inelastic (table 40). This inelasticity of demand with respect to price for other flavored wines implies that an increase in the price of other flavored wines would increase the total revenues to the industry if all other factors remained constant. Only in the East South Central region was the coefficient associated with the price of other flavored wines not significantly different from zero.

Table 40. Estimated elasticity coefficients for other flavored wine by region

Region	Elasticity of price	Elasticity of income
N. England	-0.765	
Mid Atlantic	-0.641	0.120
E. N. Central	-0.682	0.221
W. N. Central	-0.820	0.265
S. Atlantic	-0.641	0.240
E. S. Central	-0.145 a/	
W. S. Central	-0.302	
Mountain	-0.956	-0.374
Pacific	-0.249	

a/ Not significantly different from zero.
Source: Appendix table 99.

The coefficient associated with income was significantly different from zero in five out of the nine regions. In four of these five regions, namely the Middle Atlantic, East and West North Central, and South Atlantic regions, the income elasticities resulting from these coefficients were positive. These positive elasticity coefficients ranged from 0.120 to 0.265. Only in the Mountain region was a negative coefficient and resulting negative income elasticity found for other flavored wines. The value of the coefficient in the Mountain region for other flavored wines was estimated to be -0.374. Note that this negative income elasticity is larger in absolute value than any of the positive income elasticity coefficients found for other flavored wines.

Sparkling Wines

In six regions, there were enough observations to permit estimates of statistical demand functions for sparkling champagne without violating the rank conditions for estimation of these functions by regression. The results obtained for sparkling champagne as well as for sparkling burgundy and cold duck, which are discussed in the next three sections of this chapter, are sometimes based upon very few observations and should be used cautiously.

Sparkling Champagne

The estimated statistical demand functions for sparkling champagne are in appendix table 100. The resulting elasticity coefficients with respect to price and income for sparkling champagne as derived from the above noted statistical demand functions are in table 41.

Table 41. Estimated elasticity coefficients for sparkling champagne wine by region

Region	Elasticity of price	Elasticity of income
N. England	-0.315	
Mid Atlantic	-0.514	0.597
E. N. Central	-0.405	0.527
W. N. Central	-0.220 a/	0.521
S. Atlantic b/	-0.278 b/	0.621 b/
E. S. Central c/	---	---
W. S. Central	0.122 c/	
Mountain c/	---	---
Pacific	-0.532	0.613

a/ Not significantly different from zero. b/ Estimated at the mean values of the variables via the linear functional form. c/ Too few observations to estimate the relationship.
Source: Appendix table 100.

The elasticity coefficients of demand with respect to price for sparkling champagne in table 41 indicate that in only four out of the eight regions were significant coefficeints associated with the price variable in the sparkling champagne demand functions. These regions with significant coefficients were the New England, Middle Atlantic, East North Central, and Pacific regions. In each of these regions, the resulting coefficients estimated in the demand functions resulted in inelastic market demand functions with respect to price for sparkling champagne wine. The inelasticity of demand with respect to price for sparkling champagne wine means that an increase in price of the wine would lead to an increase in the total revenues to the wine industry if all other factors remained constant.

Also shown in table 41 are the elasticities of demand with respect to income for the sparkling champagne wines. In only five of the eight regions were significant coefficients associated with the income variable in the demand functions. The regions in which these significant coefficients were found were the Middle Atlantic, South Atlantic, East North Central, West North Central, and Pacific regions. In all of these five regions, the elasticity coefficient in relation to income in the demand functions for sparkling champagne wines was positive and between 0 and 1.0. These values and range of income elasticity coefficients indicate that a 1-percent increase in the income per adult household member would lead to less than a 1-percent increase in the quantity of sparkling champagne demanded per adult.

Sparkling Burgundy

The estimated statistical demand functions for sparkling burgundy wines are in appendix table 101. The elasticity coefficients derived from these estimated statistical demand functions for sparkling burgundy wines are shown in table 42.

Table 42. Estimated elasticity coefficients for sparkling burgundy wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DSPCH
N. England	-0.501	-0.673	0.399
Mid Atlantic	-0.361 a/	0.393	
E. N. Central	0.136 a/		
W. N. Central b/	-0.455 b/		
S. Atlantic	-1.087		
E. S. Central c/	---	---	
W. S. Central	-0.008 a/		
Mountain c/	---	---	
Pacific c/	---	---	

a/ Not significantly different from zero. b/ Estimated at the mean values of the variables via the linear functional form. c/ Too few observations to estimate the relationship.
Source: Appendix table 101.

Elasticities for sparkling burgundy show that in only three out of the nine regions were significant coefficients associated with the price variable. In three of the regions, too few observations existed to estimate the statistical demand functions. In three other regions, the coefficients associated with the price variable in the sparkling burgundy wine demand functions were not significantly different from zero. Only in the New England, West North Central, and South Atlantic regions were significant coefficients associated with the price variable in the sparkling burgundy wine demand functions. In the New England and West North Central regions, the elasticity of demand with respect to price for sparkling wines was inelastic. In the South Atlantic region, the elasticity of demand with respect to price for sparkling burgundy was elastic. In this region, the South Atlantic, an industry-wide policy that would decrease the price of such wine would result in an increase in total revenues from such wine if all other factors remained constant. In the other two regions, a pricing policy by the industry that would result in an increase in the price of sparkling burgundy would result in greater total revenues from such wine sales if all other factors remained constant.

Table 42 also shows the estimated elasticity of demand coefficients with respect to income for sparkling burgundy. Only in the New England and Middle Atlantic regions were significant coefficients associated with the income variables in the sparkling burgundy wine demand functions. In New England, the coefficient was negative and the resulting income elasticity coefficient was also negative but less than 1.0 in absolute value. In contrast, in the Middle Atlantic region, the significant coefficient was positive in value and the resulting elasticity of demand with respect to income for sparkling burgundy in that region was positive.

In the New England region, the price of domestic sparkling champagne wines (PR DSPCH) was significant in explaining the variability in the sparkling burgundy purchases made by households on the panel. The significant coefficient associated with the price of domestic sparkling champagnes resulted in a cross elasticity coefficient of 0.399 between sparkling burgundy and the domestic price of sparkling champagnes in New England. This was the only region in which a significant substitute product was found for sparkling burgundy. This is somewhat in contrast to sparkling champagne wines, for which no significant substitute wine products were found on a statistical basis.

Cold Duck

The estimated statistical demand functions for cold duck wines by region are shown in appendix table 102. In six out of nine regions, the coefficients associated with the price variable were significant, while in only five of the regions was the income variable significant. In the New England region, again a significant substitute product was found in the form of domestic sparkling champagne.

The resulting price elasticity coefficients derived from the estimated statistical demand functions for cold duck are in table 43. In five out of the six regions in which significant coefficients were associated with the price of cold duck, the market demand with respect to price for cold duck was inelastic. This inelasticity of demand with respect to price for cold duck indicates that an

industry-wide increase in the price of cold duck would result in an increase in the total revenues to the industry from the sales of that wine type. Only in the Mountain region was an elastic market demand with respect to price for cold duck found. An increase in the price of cold duck in the Mountain region would lead to a decrease in the total revenues for the industry.

Table 43. Estimated elasticity coefficients for sparkling cold duck wine by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR DSPCH
N. England	-0.484	0.475	0.600
Mid Atlantic	-0.814	0.379	
E. N. Central	-0.548		
W. N. Central	-0.363 a/	0.617	
S. Atlantic	-0.438	0.200	
E. S. Central	-0.784		
W. S. Central	-0.579	0.401	
Mountain	-1.157		
Pacific	0.298 a/		

a/ Not significantly different from zero.
Source: Appendix table 102.

In the New England, Middle Atlantic, West North Central, South Atlantic, and West South Central regions, significant coefficients were associated with the income variable in the cold duck demand functions. In each of these five regions, the statistical coefficient was positive, and this resulted in a positive coefficient of demand with respect to income for cold duck. The coefficients ranged in value from 0.200 to 0.617. The range of these coefficients implies that a 1-percent increase in income per adult member of household would lead to less than a 1-percent increase in the quantity of cold duck demanded.

As in the case of sparkling burgundy, the price of domestic sparkling champagne (PR DSPCH) was a significant variable in explaining the variation in the quantities of cold duck purchased in the New England region. The cross elasticity coefficient associated with the price of domestic sparkling champagne shows that a 1-percent increase in the price of domestic sparkling champagnes would lead to less than a 1-percent increase in the quantity purchased of cold duck.

Vermouth

The estimated statistical demand functions for vermouth are shown in appendix table 103. In only five out of the nine regions of the country were the demand functions estimated on a statistical basis termed acceptable. In the West North Central and West South Central regions, observations were too few for statistically estimating the demand relationship. In addition, in the East South

Central and Mountain regions, the coefficients estimated in the statistical demand functions for vermouth were not significantly different from zero. Thus, only in the New England, Middle Atlantic, East North Central, South Atlantic, and Pacific regions were the demand functions for vermouth acceptable on an economic and statistical basis.

In three of the five regions for which the demand functions for vermouth were acceptable, the resulting slope coefficients and elasticity of demand with respect to price were elastic (table 44). These regions were the New England, Middle Atlantic, and South Atlantic regions. In these regions, an industry-wide decrease in the price of vermouth would lead to an increase in the total revenues to industry from vermouth sales if all other factors remained constant. In the other two regions of the country, the East North Central and the Pacific, the elasticity of demand with respect to vermouth was inelastic. This inelasticity in these two regions of the country implies that an increase in the price of vermouth would lead to an increase in the total revenues to the industry.

Table 44. Estimated elasticity coefficients for vermouth by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR IVER
N. England	-1.042	0.125	
Mid Atlantic	-1.080		
E. N. Central	-0.306	0.171	0.422
W. N. Central a/	---	---	
S. Atlantic	-1.042	-0.163	0.428
E. S. Central	-0.442 b/ c/		
W. S. Central a/	---	---	
Mountain	-0.724 b/ c/		
Pacific	-0.408 b/		

a/ Too few observations to estimate the relationship. b/ Estimated at the mean values of the variables via the linear functional form. c/ Not significantly different from zero.
Source: Appendix table 103.

Only in the New England, East North Central, and South Atlantic regions were coefficients associated with the income variable in the statistical demand fuctions for vermouth significantly different from zero. In the New England and East North Central regions, the coefficients were positive and slightly more than zero. In contrast, in the South Atlantic region where the other significant income coefficient was found, the resulting elasticity of demand with respect to income for vermouth was negative (-0.163).

In the East North Central and the South Atlantic regions, the price of imported vermouth (PR IVER) was a significant variable in explaining the variation in the quantities of vermouth purchased per adult member of the households. In both of these regions, the cross elasticity coefficients that resulted from the

statistical demand functions were almost equal: 0.422 and 0.428 in the East North Central and South Atlantic regions, respectively.

Brandy

Appendix table 104 contains the estimated statistical demand functions for brandy. In the statistical demand analysis, the natural and flavored brandies were combined. In only four of eight regions were the estimated statistical demand functions deemed acceptable both on an economic basis in terms of signs associated with the explanatory variables and on a basis of statistical significance. The regions in which the demand functions were acceptable were the Middle Atlantic, East North Central, South Atlantic, and Pacific regions.

The estimated price, income, and cross elasticities for brandy in these regions are shown in table 45. In the Middle Atlantic and East North Central regions, demand with respect to price for brandies was inelastic. This inelasticity of demand with respect to price for brandy implies that an increase in the price of brandy in these two regions would lead to an increase in the total revenues to the industry from brandy sales if all other factors remained constant.

Table 45. Estimated elasticity coefficients for brandy by region

Region	Elasticity of price	Elasticity of income	Cross elasticity coefficient PR IBRDY
N. England a/	---	---	
Mid Atlantic	-0.492		
E. N. Central	-0.802	0.206	0.674
W. N. Central	0.172 b/		
S. Atlantic	-2.911 c/	1.747 c/	
E. S. Central a/	---	---	
W. S. Central a/	---	---	
Mountain a/	---	---	
Pacific	-1.268 c/	1.252 c/	24.392 c/

a/ Too few observations to estimate the relationship. b/ Not significantly different from zero. c/ Estimated at the mean values of the variables via the linear functional form.
Source: Appendix table 104.

In the South Atlantic and Pacific regions of the country, the market demand with respect to brandies was elastic. In these two regions, the estimated elasticities imply that a decrease in the price of brandies with all other factors remaining constant would lead to an increase in the total revenues.

In the East North Central, South Atlantic, and Pacific regions, significant coefficients were associated with the income variable in the demand functions for brandy. In the East North Central region, the positive coefficient associ-

ated with income resulted in an elasticity coefficient of 0.206, which means that a 1-percent increase in the income per adult member of household would result in an increase of 0.206 percent in the per capita quantity of brandy purchased. In two other regions, the South Atlantic and Pacific, the positive slope coefficients associated with the income variable indicate that a 1-percent increase in the income per adult member of the panel households would result in slightly more than a 1-percent increase in the quantity of brandy bought.

In the East North Central and Pacific regions, imported brandies were found to be a substitute product for domestic brandies. In these two regions, the slope coefficients associated with the price of imported brandies (PR IBRDY) were significant. Note that in the East North Central region, the imported counterparts of both brandy and vermouth were found to be significant substitutes in this demand analysis.

The results in this chapter must be analyzed by individual wine type and by region of the country. The various estimated elasticities with respect to price indicate that in some regions an increase in the price of the product would result in an increase in the total revenues to the industry if all other factors remained constant, i.e., there is an inelastic demand. In contrast, for many other wine types in various regions, an elastic demand was found with respect to price. This elastic demand implied that a decrease in the price would lead to an increase in the total revenues. The results in this chapter imply that various parts of the wine market would react differently to a given price policy; the reaction would depend on both the location and type of wine. It is of utmost importance that the wine industry, in making pricing decisions, carefully consider how different regions will react to price changes in order to increase the total revenues to the industry. The results of this chapter and implications much be viewed on an industry-wide basis.

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APPENDIX

Appendix table 1. Major household demographics and purchase data by region for households purchasing domestic varietal wine

Region	Age of wife	Age of male head	Age of purchaser	Education of male head a/	Size of family	Household income	Price paid	Total purchases	Number of purchases	Number of households
		Years			Number	Dollars	Cents/oz.	Ounces		
N. England	38	38	45	3.8	3.4	13,583	5.5	5,413.6	100	54
Mid Atlantic	36	39	40	4.0	3.5	16,434	6.1	22,749.1	426	219
E. N. Central	39	42	44	3.6	3.5	15,096	6.0	18,709.1	413	219
W. N. Central	42	45	46	3.1	3.3	13,600	6.2	8,555.6	164	75
S. Atlantic	40	42	46	4.0	3.2	15,855	6.5	10,616.8	237	117
E. S. Central	35	39	46	3.6	2.8	13,885	6.9	1,186.2	34	26
W. S. Central	40	43	44	3.9	2.9	14,230	5.6	5,415.6	107	63
Mountain	41	43	47	3.8	3.1	14,141	6.1	3,823.2	73	39
Pacific	38	41	45	4.1	3.1	16,766	6.3	38,309.8	638	233
All regions	43	41	45	3.8	3.2	14,843.3	6.1	114,778.9	2,192	1,045

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 2. Major household demographics and purchase data by region for households purchasing domestic nonvarietal wine

Region	Age of wife	Age of male head	Age of purchaser	Education of male head a/	Size of family	Household income	Price paid	Total purchases	Number of purchases	Number of households
		Years			Number	Dollars	Cents/oz.	Ounces		
N. England	38	40	44	3.7	3.5	14,312	4.6	44,236.7	712	202
Mid Atlantic	35	38	40	3.9	3.5	16,183	4.6	136,746.9	1,785	553
E. N. Central	37	40	43	3.8	3.6	15,702	5.2	76,056.3	1,529	564
W. N. Central	39	41	45	3.6	3.4	14,735	4.9	26,466.5	455	164
S. Atlantic	39	41	46	4.0	3.2	15,753	5.0	63,044.4	1,077	338
E. S. Central	40	41	46	4.0	3.0	14,824	5.6	9,784.0	193	71
W. S. Central	36	39	44	4.1	3.2	15,266	4.4	38,554.9	563	173
Mountain	39	41	44	4.0	3.3	14,383	3.8	24,309.8	362	111
Pacific	39	42	45	4.0	3.3	15,957	3.4	292,311.7	3,178	587
All regions	38	40	44	3.9	3.3	15,235	4.2	711,510.8	9,854	2,763

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 3. Major household demographics and purchase data by region for households purchasing domestic dessert wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	42	47	54	3.9	3.3	13,804	4.9	12,759.6	238	74
Mid Atlantic	39	41	47	3.9	3.4	16,433	5.5	27,372.9	432	157
E. N. Central	42	44	47	3.7	3.3	15,777	5.7	9,107.2	241	141
W. N. Central	44	47	51	3.2	3.1	13,570	6.0	3,499.2	89	43
S. Atlantic	42	45	50	4.1	2.9	16,098	5.5	16,686.5	337	127
E. S. Central	47	51	60	3.8	2.7	16,148	6.7	4,417.6	106	27
W. S. Central	41	44	50	3.8	3.1	13,492	6.0	8,983.2	200	62
Mountain	48	48	57	3.8	3.1	14,557	4.3	7,519.4	130	35
Pacific	42	45	49	4.0	3.3	15,805	5.2	17,383.3	407	151
All regions	43	46	52	3.8	3.1	15,076	5.4	107,728.8	2,180	817

a/ Education codes: 1 - grade shool; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 4. Major household demographics and purchase data by region for households purchasing domestic sparkling wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	38	41	42	3.5	3.7	13,044	11.6	2,110.2	56	34
Mid Atlantic	37	40	43	3.7	3.4	15,943	10.0	10,105.0	198	122
E. N. Central	36	39	41	3.9	3.6	17,250	8.8	9,832.2	192	122
W. N. Central	37	39	49	3.4	3.7	14,633	9.2	2,169.6	55	30
S. Atlantic	39	42	44	4.0	3.0	16,531	9.3	4,838.4	130	80
E. S. Central	36	37	37	4.1	3.8	13,214	10.4	650.4	21	14
W. S. Central	37	39	42	4.3	3.3	15,620	9.3	4,065.8	66	46
Mountain	39	40	46	4.4	3.1	15,222	7.9	1,235.2	27	18
Pacific	37	41	43	4.2	3.2	16,745	8.6	7,306.6	148	96
All regions	37	40	43	3.9	3.4	15,356	9.4	42,313.4	893	562

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 5. Major household demographics and purchase data by region for households purchasing domestic flavored wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	38	40	42	3.1	3.7	12,536	5.0	4,551.9	108	55
Mid Atlantic	34	38	39	3.7	3.7	14,452	5.4	15,200.6	308	165
E. N. Central	35	37	39	3.5	3.7	14,385	5.4	21,238.8	578	279
W. N. Central	39	42	44	3.3	3.4	13,777	5.2	7,261.4	183	94
S. Atlantic	39	41	42	3.7	3.1	14,254	6.2	9,995.2	281	138
E. S. Central	34	37	40	3.5	3.4	13,375	5.9	2,306.6	59	36
W. S. Central	35	38	40	3.7	3.5	13,825	4.8	6,356.1	156	80
Mountain	37	39	42	3.7	3.1	12,273	4.3	5,744.0	103	55
Pacific	36	39	42	3.7	3.3	14,474	4.7	16,362.9	393	190
All regions	36	39	41	3.5	3.4	13,706	5.2	89,017.5	2,169	1,092

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 6. Major household demographics and purchase data by region for households purchasing domestic vermouth

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	43	48	50	3.4	4.4	15,813	3.6	1,251.4	18	8
Mid Atlantic	38	41	47	4.0	3.7	15,500	4.7	5,488.0	88	23
E. N. Central	45	46	50	3.8	3.5	16,276	6.8	2,076.6	78	29
W. N. Central	40	45	48	3.5	2.5	20,000	6.7	96.0	2	2
S. Atlantic	44	44	54	4.2	3.4	17,938	6.3	1,376.0	40	16
E. S. Central	43	45	48	4.5	2.8	16,625	6.5	614.4	23	4
W. S. Central	25	28	33	5.0	2.3	10,667	5.5	83.2	3	3
Mountain	50	60	62	3.0	2.0	9,500	4.1	563.1	21	2
Pacific	40	43	48	4.2	2.9	17,518	5.3	1,488.0	57	28
All regions	41	44	49	4.0	3.1	15,537	5.5	13,036.7	330	188

a/ Education codes: 1 - grade school; 2 - some high school; 3 graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 7. Major household demographics and purchase data by region for households purchasing domestic brandy

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	30	30	37	3.5	2.0	14,500	16.2	40.0	2	2
Mid Atlantic	44	45	48	3.0	3.2	13,000	18.9	369.6	15	13
E. N. Central	43	45	47	3.7	3.9	18,846	16.7	419.0	16	13
W. N. Central	40	50	34	4.0	3.0	15,750	13.8	256.0	7	2
S. Atlantic	37	43	49	3.6	3.8	14,300	16.0	333.0	13	5
E. S. Central	45	48	50	3.3	2.3	10,167	10.8	97.6	3	3
W. S. Central	25	25	26	4.0	5.0	8,500	14.0	32.0	1	1
Mountain	No purchases reported									
Pacific	34	41	40	4.2	3.2	15,821	11.3	1,099.2	29	14
All regions	37	41	41	3.7	3.3	13,861	14.7	2,646.4	86	53

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 8. Major household demographics and purchase data by region for households purchasing domestic other wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	44	50	43	3.8	3.5	14,600	7.2	208.0	12	10
Mid Atlantic	33	32	39	4.4	3.5	18,265	6.5	348.8	19	17
E. N. Central	38	38	42	3.7	3.3	12,125	13.8	161.6	12	12
W. N. Central	45	53	52	3.3	3.5	13,875	7.7	48.8	4	4
S. Atlantic	41	42	43	4.1	2.9	16,553	7.0	336.2	23	19
E. S. Central	27	33	29	3.6	3.0	11,200	7.5	74.1	5	5
W. S. Central	28	33	34	3.7	3.0	17,167	6.6	84.0	7	6
Mountain	42	41	46	4.4	3.5	15,833	5.9	154.9	10	6
Pacific	37	41	37	4.1	3.6	16,393	4.0	274.2	15	14
All regions	37	40	41	3.9	3.3	15,112	7.4	1,690.6	107	93

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 9. Major household demographics and purchase data by region for households purchasing imported varietal table wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	40	35	41.5	5.0	5.5	13,250	9.9	51.2	2	2
Mid Atlantic	33	34	35.6	4.3	2.9	19,400	10.1	520.1	18	15
E. N. Central	45	48	35.0	2.3	2.8	10,250	13.1	146.2	5	4
W. N. Central	45	55	NA	1.0	3.0	12,500	10.9	24.3	1	1
S. Atlantic	40	45	42.8	4.8	2.5	22,500	9.2	170.6	5	4
E. S. Central	----------	----------	----------	----------	No Purchases	Reported	----------	----------	----------	----------
W. S. Central	25	35	31.0	5.0	2.0	11,500	4.1	48.0	2	1
Mountain	45	45	46.5	5.0	2.0	17,500	9.2	51.2	2	1
Pacific	35	30	43.0	4.8	3.0	17,750	8.9	251.2	5	4
All regions	38.5	41	39.34	4.03	2.96	15,581	9.4	1,262.8	40	32

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 10. Major household demographics and purchase data by region for households purchasing imported nonvarietal table wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	35	37	37.5	3.8	3.5	14,438	10.0	9,589.6	301	130
Mid Atlantic	34	36	38.5	4.0	3.4	16,897	9.9	39,735.8	813	320
E. N. Central	35	37	40.1	3.9	3.6	16,261	9.9	29,164.4	680	274
W. N. Central	35	38	38.9	3.9	3.5	15,017	11.1	3,905.6	122	59
S. Atlantic	36	39	38.9	4.3	3.2	17,475	11.0	8,627.2	264	140
E. S. Central	38	40	37.6	4.2	2.6	16,111	11.8	1,561.2	43	27
W. S. Central	35	39	41.0	4.2	3.5	16,743	9.4	7,936.9	187	72
Mountain	36	38	40.3	3.9	3.2	16,478	11.8	2,153.8	44	23
Pacific	38	41	44.9	4.1	3.1	17,025	11.4	9,998.4	264	118
All regions	36	38	39.7	4.0	3.3	16,272	10.7	112,672.9	2,718	1,163

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 11. Major household demographics and purchase data by region for households purchasing imported dessert wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	44	49	50.3	3.7	3.3	14,042	20.3	462.4	19	12
Mid Atlantic	38	39	44.5	4.2	3.1	17,889	17.4	1,543.0	39	36
E. N. Central	39	43	44.4	4.2	3.3	17,235	19.9	775.0	24	17
W. N. Central	40	37	42.0	3.5	3.2	13,583	15.5	159.0	7	6
S. Atlantic	37	39	41.5	4.2	3.0	17,350	17.8	271.2	25	20
E. S. Central	50	55	59.2	4.4	2.3	13,667	17.8	204.6	9	6
W. S. Central	45	48	52.6	4.0	2.7	18,000	20.8	123.6	5	3
Mountain	40	65	48.0	2.0	3.0	12,500	14.8	92.6	2	2
Pacific	46	45	41.4	3.9	2.9	18,313	23.4	269.6	9	8
All regions	42	47	47.1	3.8	2.98	15,842	18.6	3,901.0	139	110

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 12. Major household demographics and purchase data by region for households purchasing imported sparkling wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	41	35	40.0	3.3	3.8	14,800	18.0	231.6	5	5
Mid Atlantic	33	33	36.7	4.0	2.9	18,133	20.2	597.0	17	15
E. N. Central	41	38	40.7	4.1	4.6	20,357	18.8	196.2	7	7
W. N. Central	35	40	42.0	4.0	2.5	18,250	40.8	78.0	2	2
S. Atlantic	40	40	40.5	4.5	3.5	20,000	9.9	49.0	2	2
E. S. Central	No Purchases Reported									
W. S. Central	40	55	50.7	4.0	5.5	17,500	27.7	67.6	3	2
Mountain	No Purchases Reported									
Pacific	35	35	40.0	4.5	3.5	15,750	7.8	51.2	2	2
All region	38	39	41.5	4.1	3.8	17,827	20.5	1,270.6	38	35

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 13. Major household demographics and purchase data by region for households purchasing imported flavored wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	36	38	39.5	3.2	3.4	13,750	8.6	863.0	26	20
Mid Atlantic	34	35	38.0	3.8	3.6	15,276	8.3	5,562.5	134	96
E. N. Central	36	38	41.2	3.8	3.7	16,462	7.4	3,368.0	95	65
W. N. Central	40	41	46.2	3.7	3.3	15,659	7.8	1,615.1	45	22
S. Atlantic	36	40	38.6	3.7	3.4	13,576	8.3	2,405.5	64	46
E. S. Central	33	38	41.3	3.5	3.2	14,100	10.7	233.1	8	5
W. S. Central	36	40	41.0	3.9	3.0	16,114	7.7	752.3	27	22
Mountain	33	38	33.0	4.3	2.6	13,100	9.1	242.5	8	5
Pacific	32	36	37.2	4.2	2.9	15,595	10.4	783.8	29	21
All regions	35	38	39.6	3.8	3.2	14,848	8.7	15,825.8	436	302

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 14. Major household demographics and purchase data by region for households purchasing imported vermouth wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	46	47	50.0	3.8	3.7	18,208	7.7	1,799.7	45	12
Mid Atlantic	43	45	50.1	4.2	2.9	18,231	8.7	2,156.7	52	26
E. N. Central	44	44	52.4	4.3	2.9	19,250	11.5	2,004.2	69	16
W. N. Central	No Purchases Reported									
S. Atlantic	42	42	48.2	4.2	2.9	15,000	11.2	473.9	17	7
E. S. Central	40	45	46.3	5.0	3.0	15,750	10.4	80.0	3	2
W. S. Central	45	55	39.0	1.0	2.5	15,500	8.8	79.0	2	2
Mountain	45	55	53.0	2.0	2.0	10,500	4.6	25.6	1	1
Pacific	50	55	48.0	4.5	2.5	18,250	7.6	41.6	2	2
All regions	44	49	48.4	3.6	2.8	16,336	8.8	6,660.7	191	68

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 15. Major household demographics and purchase data by region for households purchasing imported brandy wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	55	65	62.0	5.0	2.0	22,500	20.1	25.6	1	1
Mid Atlantic	38	38	51.5	4.3	3.3	18,333	19.0	310.6	11	6
E. N. Central	30	25	33.0	3.0	3.5	10,000	14.3	49.0	2	2
W. N. Central	No Purchases Reported									
S. Atlantic	45	50	51.7	5.0	3.5	16,500	25.8	73.6	3	2
E. S. Central	No Purchases Reported									
W. S. Central	45	45	49.0	5.0	4.0	22,500	46.0	23.0	1	1
Mountain	65	65	70.0	5.0	2.0	7,500	15.5	32.0	1	1
Pacific	45	45	48.0	4.0	2.0	14,000	16.5	128.0	4	1
All regions	46	48	52.0	4.5	2.9	15,905	22.5	641.8	23	14

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school: 4 - some college; 5 - graduated college or more.

Appendix table 16. Major household demographics and purchase data by region for households purchasing imported other wine

Region	Age of wife	Age of male head Years	Age of purchaser	Education of male head a/	Size of family Number	Household income Dollars	Price paid Cents/oz.	Total purchases Ounces	Number of purchases	Number of households
N. England	25	25	25.0	4.0	5.0	10,500	8.3	12.0	1	1
Mid Atlantic	33	33	37.0	4.0	3.8	18,000	7.2	157.6	9	6
E. N. Central	31	33	35.6	3.4	4.6	13,100	8.0	56.8	5	5
W. N. Central	35	40	31.0	3.8	5.0	21,250	7.1	63.2	5	4
S. Atlantic	32	35	39.0	4.3	3.3	14,000	7.7	36.0	3	3
E. S. Central	25	35	35.0	4.0	4.0	22,500	8.3	24.0	2	1
W. S. Central	40	40	41.0	4.0	2.0	13,500	7.8	24.5	2	2
Mountain	65	65	69.0	3.0	2.0	22,500	6.8	12.0	1	1
Pacific	45	25	54.0	5.0	2.0	17,500	2.3	25.6	1	1
All regions	37	37	40.7	3.9	3.5	16,983	7.1	411.7	29	24

a/ Education codes; 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 17. Sex of purchasers for varietal wines, by regions

Region	Number of responses			Percent of distribution		
	Female	Male	Unknown	Female	Male	Unknown
N. England	54	46	0	54.00	46.00	0.00
Mid Atlantic	206	213	7	48.36	50.00	1.64
E. N. Central	240	164	9	58.11	39.71	2.18
W. N. Central	70	91	30	36.65	47.64	15.71
S. Atlantic	103	126	8	43.46	53.17	3.37
E. S. Central	11	23	0	32.35	67.65	0.00
W. S. Central	47	56	4	43.93	52.34	3.73
Mountain	28	36	9	38.36	43.32	12.32
Pacific	398	235	5	61.20	36.14	.76
U.S.	1157	990	72	52.14	44.62	3.24

Appendix table 18. Sex of purchasers for nonvarietal wines, by regions

Region	Number of respones			Percent of distribution		
	Female	Male	Unknown	Female	Male	Unknown
N. England	400	298	14	56.18	41.85	1.97
Mid Atlantic	1022	728	36	57.22	40.76	2.02
E. N. Central	953	551	25	62.33	36.04	1.63
W. N. Central	239	211	5	52.53	46.37	1.10
S. Atlantic	667	388	24	61.82	35.96	2.22
E. S. Central	76	111	6	39.38	57.51	3.11
W. S. Central	341	210	12	60.57	37.30	2.13
Mountain	228	128	6	62.98	35.36	1.66
Pacific	2029	1104	45	63.85	34.74	1.41
U.S.	5955	3729	173	60.41	37.83	1.76

Appendix table 19. Sex of purchasers for dessert wines, by region

Region	Number of responses			Percent of distribution		
	Female	Male	Unknown	Female	Male	Unknown
N. England	134	102	2	56.30	42.86	.84
Mid Atlantic	242	183	7	56.02	42.36	1.62
E. N. Central	146	90	5	60.58	37.44	2.08
W. N. Central	45	42	2	50.56	47.19	2.25
S. Atlantic	247	86	4	73.29	25.52	1.19
E. S. Central	18	85	3	16.98	80.19	2.83
W. S. Central	100	98	2	50.00	49.00	1.00
Mountain	52	77	1	40.00	59.23	.73
Pacific	271	129	7	66.59	31.70	1.71
U.S.	1255	892	33	57.57	40.92	1.51

Appendix table 20. Sex of purchasers for sparkling wines, by regions

Region	Number of responses			Percent of distribution		
	Female	Male	Unknown	Female	Male	Unknown
N. England	22	33	1	39.29	58.93	1.78
Mid Atlantic	112	83	3	56.57	41.92	1.51
E. N. Central	97	88	7	50.52	45.83	3.65
W. N. Central	22	33	0	40.00	60.00	0.00
S. Atlantic	77	49	4	59.23	37.69	3.08
E. S. Central	7	12	2	33.33	57.14	9.53
W. S. Central	37	24	5	56.06	36.36	7.58
Mountain	14	13	0	51.85	48.15	0.00
Pacific	98	46	4	66.22	31.08	2.70
U.S.	486	381	26	54.42	42.67	2.91

Appendix table 21. Sex of purchasers for flavored wines, by region

Region	Number of responses			Percent of distribution		
	Female	Male	Unknown	Female	Male	Unknown
N. England	67	41	0	62.04	37.96	0.00
Mid Atlantic	146	154	8	47.40	50.00	2.60
E. N. Central	396	170	12	68.51	29.41	2.08
W. N. Central	114	69	0	62.30	37.70	0.00
S. Atlantic	165	102	14	58.72	36.30	4.98
E. S. Central	37	22	0	62.71	37.29	0.00
W. S. Central	100	55	1	64.10	35.26	.64
Mountain	65	34	4	63.11	33.01	3.88
Pacific	288	102	3	73.28	25.95	.77
U.S.	1378	749	42	63.53	34.53	1.94

Appendix table 22. Sex of purchasers for vermouth wines, by regions

Region	Number of responses			Percent of distribution		
	Female	Male	Unknown	Female	Male	Unknown
N. England	11	7	0	61.11	38.89	0.00
Mid Atlantic	59	29	0	67.05	32.95	0.00
E. N. Central	50	27	1	73.53	39.71	1.46
W. N. Central	1	1	0	50.00	50.00	0.00
S. Atlantic	29	11	0	72.50	27.50	0.00
E. S. Central	2	20	1	8.70	86.96	4.34
W. S. Central	0	3	0	0.00	100.00	0.00
Mountain	8	13	0	38.10	61.90	0.00
Pacific	33	23	1	57.90	40.35	1.75
U.S.	193	134	3	58.49	40.61	.90

Appendix table 23. Sex of purchasers for brandy wines, by regions

Region	Number of responses			Percent of distribution		
	Female	Male	Unknown	Female	Male	Unknown
N. England	2	0	0	100.00	0.00	0.00
Mid Atlantic	9	6	0	60.00	40.00	0.00
E. N. Central	9	7	0	56.25	43.75	0.00
W. N. Central	6	1	0	85.71	14.29	0.00
S. Atlantic	4	9	0	30.77	69.23	0.00
E. S. Central	2	1	0	66.67	33.33	0.00
W. S. Central	0	1	0	0.00	100.00	0.00
Mountain	0	0	0	0.00	0.00	0.00
Pacific	26	6	0	81.25	18.75	0.00
U.S.	55	31	0	63.95	36.05	0.00

Appendix table 24. Age of purchasers for varietal wines, by region

Region	Number of responses							Percent of distribution						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+	Unknown	0-24	25-34	35-44	45-54	55-64	65+
N. England	1	0	30	16	29	14	10	1.00	0.00	30.00	16.00	29.00	14.00	10.00
Mid Atlantic	9	18	154	108	56	62	19	2.11	4.22	36.15	25.35	13.15	14.55	4.46
E. N. Central	9	16	111	75	107	75	20	2.18	3.87	26.88	18.16	25.91	18.16	4.84
W. N. Central	2	5	23	49	33	35	17	1.22	3.05	14.02	29.88	20.12	21.34	10.37
S. Atlantic	7	6	44	60	70	28	22	2.95	2.53	18.57	25.32	29.54	11.81	9.28
E. S. Central	1	1	11	5	2	9	5	2.94	2.94	32.35	14.71	5.88	26.47	14.71
W. S. Central	4	2	41	10	20	18	12	3.74	1.87	38.32	9.35	18.70	16.82	11.22
Mountain	1	0	18	17	20	4	13	1.37	0.00	24.66	23.29	27.40	5.48	17.81
Pacific	8	14	181	113	176	111	35	1.25	2.19	28.37	17.71	27.59	17.40	5.49
U.S.	42	62	613	453	513	356	153	1.92	2.83	27.98	20.68	23.41	16.25	6.98

Appendix table 25. Age of purchasers for nonvarietal wines, by region

Region	Number of responses							Percent of distribution						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+	Unknown	0-24	25-34	35-44	45-54	55-64	65+
N. England	14	21	212	146	133	106	80	1.97	2.95	29.78	20.51	18.68	14.89	11.23
Mid Atlantic	36	66	652	477	232	254	69	2.02	3.70	36.51	26.71	12.99	14.22	3.83
E. N. Central	32	77	452	257	395	227	89	2.09	5.04	29.56	16.81	25.83	14.85	5.82
W. N. Central	5	11	137	78	81	124	19	1.10	2.42	30.11	17.14	17.80	27.25	4.18
S. Atlantic	15	24	223	192	300	199	114	1.41	2.25	20.90	17.99	28.12	18.65	10.68
E. S. Central	5	7	43	33	56	31	18	2.59	3.63	22.28	17.10	29.02	16.06	9.33
W. S. Central	14	11	156	138	104	108	32	2.49	1.95	27.71	24.51	18.47	19.18	5.68
Mountain	6	10	120	46	89	68	23	1.66	2.76	33.15	12.71	24.59	18.79	6.35
Pacific	46	52	793	730	819	574	164	1.45	1.64	24.95	22.97	25.77	18.06	5.16
U.S.	173	279	2788	2097	2209	1691	608	1.76	2.83	28.32	21.30	22.44	17.18	6.18

Appendix table 26. Age of purchasers for dessert wines, by region

Region	Number of responses							Percent of distribution						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+	Unknown	0-24	25-34	35-44	45-54	55-64	65+
N. England	2	6	29	27	34	78	62	.84	2.52	12.19	11.35	14.29	32.77	26.05
Mid Atlantic	5	8	84	87	101	131	16	1.16	1.85	19.44	20.14	23.38	30.32	3.70
E. N. Central	7	3	60	44	37	58	32	2.91	1.24	24.90	18.26	15.35	24.06	13.28
W. N. Central	2	3	17	8	22	20	17	2.25	3.37	19.10	8.99	24.72	22.47	19.10
S. Atlantic	7	9	37	59	107	64	54	2.08	2.61	10.98	17.51	31.75	18.99	16.02
E. S. Central	2	0	5	6	17	33	43	1.84	0.00	4.59	5.51	15.60	30.28	39.45
W. S. Central	1	4	37	49	30	42	37	.50	2.00	18.50	24.50	15.00	21.00	18.50
Mountain	3	2	5	20	19	33	48	2.31	1.54	3.85	15.39	14.62	25.39	36.92
Pacific	6	9	55	50	131	127	29	1.47	2.21	13.51	12.29	32.19	31.20	7.13
U.S.	35	44	392	350	498	586	338	1.56	1.96	17.48	15.60	22.20	26.13	15.07

Appendix table 27. Age of purchasers for sparkling wines, by region

Region	Number of responses							Percent of distribution						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+	Unknown	0-24	25-34	35-44	45-54	55-64	65+
N. England	7	1	13	16	12	5	2	12.50	1.79	23.21	28.57	21.43	8.93	3.57
Mid Atlantic	10	3	56	46	50	24	9	5.05	1.52	28.28	23.23	25.25	12.12	4.55
E. N. Central	9	7	69	32	34	27	14	4.69	3.65	35.94	16.67	17.71	14.06	7.29
W. N. Central	0	3	11	8	6	25	2	0.00	5.46	20.00	14.55	10.91	45.46	3.64
S. Atlantic	4	5	35	29	20	27	10	3.08	3.85	26.92	22.31	15.39	20.77	7.69
E. S. Central	0	3	8	3	6	1	0	0.00	14.29	38.10	14.29	28.57	4.76	0.00
W. S. Central	3	3	19	14	11	15	1	4.55	4.55	28.70	21.21	16.67	22.73	1.52
Mountain	1	2	8	2	4	6	4	3.70	7.41	29.63	7.41	14.82	22.22	14.82
Pacific	4	6	48	19	44	18	9	2.70	4.05	32.43	12.84	29.73	12.16	6.08
U.S.	38	33	267	169	187	148	51	4.26	3.70	29.90	18.93	20.94	16.57	5.71

Appendix table 28. Age of purchasers for flavored wines, by region

Region	Number of responses							Percent of distribution						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+	Unknown	0-24	25-34	35-44	45-54	55-64	65+
N. England	0	4	41	19	12	26	6	0.00	3.70	37.96	17.59	11.11	24.07	5.56
Mid Atlantic	10	12	109	91	41	31	14	3.25	3.90	35.39	29.55	13.31	10.07	4.55
E. N. Central	5	47	240	91	94	73	28	.87	8.13	41.52	15.74	16.26	12.63	4.84
W. N. Central	1	12	54	26	32	43	15	.55	6.56	29.51	14.21	17.49	23.50	8.20
S. Atlantic	7	42	64	32	59	66	11	2.49	14.95	22.78	11.39	21.00	23.49	3.92
E. S. Central	0	4	22	13	16	1	3	0.00	6.78	37.29	22.03	27.12	1.70	5.09
W. S. Central	1	7	62	30	28	22	6	.64	4.49	39.74	19.23	17.95	14.10	3.85
Mountain	4	8	43	8	10	16	14	3.88	7.77	41.75	7.77	9.71	15.53	13.59
Pacific	1	22	139	87	61	52	31	.25	5.60	35.37	22.14	15.52	13.23	7.89
U.S.	29	158	774	397	353	330	128	1.34	7.28	35.69	18.30	16.28	15.21	5.90

Appendix table 29. Age of purchasers for vermouth wines, by region

Region	Number of responses							Percent of distribution						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+	Unknown	0-24	25-34	35-44	45-54	55-64	65+
N. England	0	0	0	1	14	3	0	0.00	0.00	0.00	5.56	77.78	16.66	0.00
Mid Atlantic	0	0	13	17	32	26	0	0.00	0.00	14.77	14.32	36.36	29.55	0.00
E. N. Central	1	0	1	23	17	34	2	1.28	0.00	1.28	29.49	21.80	43.59	0.00
W. N. Central	0	0	0	1	1	0	0	0.00	0.00	0.00	50.00	50.00	0.00	0.00
S. Atlantic	0	0	3	6	12	14	5	0.00	0.00	7.50	15.00	30.00	35.00	12.50
E. S. Central	1	0	0	9	3	10	0	4.35	0.00	0.00	39.13	13.04	43.49	0.00
W. S. Central	0	0	2	1	0	0	0	0.00	0.00	66.67	33.33	0.00	0.00	0.00
Mountain	4	0	0	0	4	4	9	19.05	0.00	0.00	0.00	19.05	19.05	42.85
Pacific	0	0	10	5	32	9	1	0.00	0.00	17.54	8.77	56.14	15.79	1.75
U.S.	6	0	29	63	115	100	17	1.82	0.00	8.79	19.09	34.85	30.30	5.15

Appendix table 30. Age of purchasers for brandy wines, by region

Region	Number of responses							Percent of distribution						
	Unknown	0-24	25-34	35-44	45-54	55-64	65+	Unknown	0-24	25-34	35-44	45-54	55-64	65+
N. England	0	1	0	0	1	0	0	0.00	50.00	0.00	0.00	50.00	0.00	0.00
Mid Atlantic	0	2	0	4	4	4	1	0.00	13.33	0.00	16.66	16.66	16.66	6.66
E. N. Central	0	0	3	3	7	2	1	0.00	0.00	18.75	18.75	43.75	12.50	6.25
W. N. Central	0	0	5	1	0	1	0	0.00	0.00	71.42	14.29	0.00	14.29	0.00
S. Atlantic	0	0	0	4	9	0	0	0.00	0.00	0.00	30.77	69.23	0.00	0.00
E. S. Central	0	0	1	0	1	0	1	0.00	0.00	33.33	0.00	33.33	0.00	33.33
W. S. Central	0	0	1	0	0	0	0	0.00	0.00	100.00	0.00	0.00	0.00	0.00
Mountain	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pacific	0	0	15	2	9	2	1	0.00	0.00	51.72	6.90	31.03	6.90	3.45
U.S.	0	3	25	14	31	9	4	0.00	3.49	29.07	16.28	36.05	10.47	4.65

Appendix table 31. Occasion of purchase for varietal wines, by region

Region	Number of responses				Percent of distribution			
	Special	Everyday	Cooking	Gift	Special	Everyday	Cooking	Gift
N. England	34	61	1	7	33.01	59.22	.97	6.80
Mid Atlantic	169	265	10	20	36.42	57.11	2.16	4.31
E. N. Central	168	241	22	28	36.60	52.51	4.79	6.10
W. N. Central	40	115	5	10	23.53	67.65	2.94	5.88
S. Atlantic	99	157	18	12	34.62	54.90	6.29	4.20
E. S. Central	19	14	1	1	54.29	40.00	2.86	2.86
W. S. Central	36	75	9	4	29.03	60.48	7.26	3.23
Mountain	29	39	1	6	38.67	52.00	1.33	8.00
Pacific	238	407	51	31	32.74	55.98	7.02	4.26
U.S.	832	1374	118	119	34.06	56.24	4.83	4.87

Appendix table 32. Occasion of purchase for nonvarietal wines, by region

Region	Number of responses				Percent of distribution			
	Special	Everyday	Cooking	Gift	Special	Everyday	Cooking	Gift
N. England	165	515	98	35	20.30	63.35	12.05	4.30
Mid Atlantic	481	1249	188	90	23.95	62.20	9.36	4.49
E. N. Central	474	1025	145	40	28.15	60.87	8.61	2.37
W. N. Central	155	294	38	29	30.04	56.97	7.36	5.63
S. Atlantic	316	747	145	22	25.69	60.73	11.79	1.79
E. S. Central	60	116	48	9	25.75	49.79	20.60	3.86
W. S. Central	147	414	93	13	22.04	62.07	13.94	1.95
Mountain	117	246	22	13	29.40	61.81	5.53	2.27
Pacific	721	2460	477	79	19.29	65.83	12.76	2.11
U.S.	2636	7066	1254	330	23.36	62.61	11.11	2.92

Appendix table 33. Occasion of purchase for dessert wines, by region

Region	Number of responses				Percent of distribution			
	Special	Everyday	Cooking	Gift	Special	Everyday	Cooking	Gift
N. England	35	190	29	12	13.16	71.43	10.90	4.51
Mid Atlantic	74	330	83	201	10.76	47.97	12.06	29.22
E. N. Central	60	133	63	11	22.47	49.81	23.60	4.12
W. N. Central	22	49	17	8	22.92	51.02	17.71	8.33
S. Atlantic	79	245	103	11	18.04	55.94	23.52	2.51
E. S. Central	19	82	11	0	16.96	73.21	9.82	0.00
W. S. Central	39	150	23	3	18.14	69.77	10.70	1.40
Mountain	55	69	26	6	35.26	44.23	16.67	3.85
Pacific	78	255	111	15	16.99	55.56	24.18	3.27
U.S.	461	1503	466	267	17.09	55.73	17.28	9.90

Appendix table 34. Occasion of purchase for sparkling wines, by region

Region	Number of responses				Percent of distribution			
	Special	Everyday	Cooking	Gift	Special	Everyday	Cooking	Gift
N. England	34	14	0	8	60.71	25.00	0.00	14.29
Mid Atlantic	123	58	0	27	59.14	27.89	0.00	12.98
E. N. Central	127	63	4	17	60.19	29.86	1.90	8.06
W. N. Central	45	9	1	3	77.59	15.52	1.72	5.17
S. Atlantic	93	33	2	6	69.40	24.63	1.49	4.48
E. S. Central	14	5	0	3	63.64	22.73	0.00	13.64
W. S. Central	48	19	0	6	65.75	26.03	0.00	8.22
Mountain	23	3	0	1	85.19	11.11	0.00	3.70
Pacific	107	23	0	19	71.81	15.44	0.00	12.75
U.S.	614	227	7	90	65.46	24.20	.75	9.60

Appendix table 35. Occasion of purchase for flavored wines, by region

Region	Number responses				Percent of distribution			
	Special	Everyday	Cooking	Gift	Special	Everyday	Cooking	Gift
N. England	40	65	1	5	36.04	58.56	.90	4.51
Mid Atlantic	120	179	1	23	37.15	55.42	.30	7.12
E. N. Central	188	379	10	30	30.97	62.44	1.65	4.94
W. N. Central	43	107	17	16	23.50	58.47	9.29	8.74
S. Atlantic	88	195	9	6	29.53	65.44	3.02	2.01
E. S. Central	23	33	7	5	33.82	48.53	10.29	7.35
W. S. Central	51	100	3	7	31.68	62.11	1.86	4.35
Mountain	37	66	5	1	33.95	60.55	4.59	.92
Pacific	131	272	8	5	31.49	65.39	1.92	1.20
U.S.	721	1396	61	98	31.68	61.34	2.68	4.31

Appendix table 36. Occasion of purchase for vermouth wines, by region

Region	Number of responses				Percent of distribution			
	Special	Everyday	Cooking	Gift	Special	Everyday	Cooking	Gift
N. England	3	14	3	0	15.00	70.00	15.00	0.00
Mid Atlantic	11	79	13	0	10.68	76.70	12.62	0.00
E. N. Central	10	67	5	0	12.20	81.71	6.10	0.00
W. N. Central	2	0	0	0	100.00	0.00	0.00	0.00
S. Atlantic	10	36	4	0	20.00	72.00	8.00	0.00
E. S. Central	3	19	8	0	10.00	63.33	26.67	0.00
W. S. Central	0	2	2	0	0.00	50.00	50.00	0.00
Mountain	0	21	4	0	0.00	84.00	16.00	0.00
Pacific	12	42	6	1	19.67	68.85	9.84	1.64
U.S.	51	280	45	1	13.53	74.27	11.94	.27

Appendix table 37. Occasion of purchase for brandy wines, by region

Region	Number of responses				Percent of distribution			
	Special	Everyday	Cooking	Gift	Special	Everyday	Cooking	Gift
N. England	1	0	0	1	50.00	0.00	0.00	50.00
Mid Atlantic	9	5	0	2	56.25	31.25	0.00	12.50
E. N. Central	8	6	2	1	47.06	35.29	11.77	5.88
W. N. Central	0	6	1	0	0.00	85.71	14.29	0.00
S. Atlantic	2	10	3	0	13.33	66.67	20.00	0.00
E. S. Central	0	1	2	0	0.00	33.33	66.67	0.00
W. S. Central	0	1	0	0	0.00	100.00	0.00	0.00
Mountain	0	0	0	0	0.00	0.00	0.00	0.00
Pacific	8	17	4	2	25.81	54.84	12.90	6.45
U.S.	28	46	12	6	30.44	50.00	13.04	6.52

Appendix table 38. Persons who drink varietal wine, by region

Region	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
N. England	85	59	7	57	49	33.07	22.96	2.72	22.18	19.07
Mid Atlantic	385	351	52	278	196	30.51	27.81	4.12	22.03	15.53
E. N. Central	332	309	30	216	201	30.52	28.40	2.76	19.85	18.47
W. N. Central	136	136	18	92	90	28.81	28.81	3.81	19.49	19.07
S. Atlantic	194	185	18	158	90	30.08	28.68	2.79	24.50	13.95
E. S. Central	26	26	4	19	13	29.55	29.55	4.55	21.59	14.77
W. S. Central	87	88	6	51	38	32.22	32.59	2.22	18.89	14.07
Mountain	69	65	7	37	23	34.33	32.34	3.48	18.41	11.44
Pacific	585	562	40	371	371	30.33	29.13	2.07	19.23	19.23
U.S.	1899	1781	182	1279	974	31.06	29.13	2.98	20.92	15.93

Appendix table 39. Persons who drink nonvarietal wines, by region

Region	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
N. England	615	501	42	386	331	32.80	26.72	2.24	20.59	17.65
Mid Atlantic	1561	1451	136	1194	824	30.22	28.09	2.63	23.11	15.95
E. N. Central	1307	1199	94	765	572	33.20	30.46	2.39	19.43	14.53
W. N. Central	381	332	20	255	208	31.86	27.76	1.67	21.32	17.39
S. Atlantic	866	815	63	622	431	30.96	29.14	2.25	22.24	15.41
E. S. Central	159	159	12	100	79	31.24	31.24	2.36	19.65	15.52
W. S. Central	469	449	26	307	212	32.06	30.69	1.78	20.98	14.49
Mountain	313	298	18	202	120	32.91	31.34	1.89	21.24	12.62
Pacific	2840	2686	167	1939	1390	31.48	29.77	1.85	21.49	15.41
U.S.	8511	7890	578	5725	4167	31.67	29.36	2.15	21.31	15.51

Appendix table 40. Persons who drink dessert wines, by region

Region	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
N. England	190	151	9	117	85	34.42	27.36	1.63	21.20	15.40
Mid Atlantic	362	303	19	247	243	30.84	25.81	1.62	21.04	20.70
E. N. Central	209	156	5	100	86	37.59	28.06	.90	17.99	15.47
W. N. Central	75	48	1	44	32	37.50	24.00	.50	22.00	16.00
S. Atlantic	270	227	8	194	131	32.53	27.35	.96	23.37	15.78
E. S. Central	45	80	2	37	23	24.06	42.78	1.07	19.79	12.30
W. S. Central	130	148	11	103	80	27.54	31.36	2.33	21.82	16.95
Mountain	109	107	2	70	42	33.03	32.42	.61	21.21	12.73
Pacific	334	267	20	168	119	36.78	29.41	2.20	18.50	13.11
U.S.	1724	1487	77	1080	841	33.10	28.55	1.48	20.73	16.15

Appendix table 41. Persons who drink sparkling wines, by region

Region	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
N. England	47	37	2	30	21	34.31	27.01	1.46	21.90	15.33
Mid Atlantic	167	136	19	102	90	32.49	26.46	3.70	19.84	17.51
E. N. Central	165	146	18	92	87	32.48	28.74	3.54	18.11	17.13
W. N. Central	46	40	8	19	32	31.72	27.59	5.52	13.10	22.07
S. Atlantic	108	105	8	75	42	31.95	31.07	2.37	22.19	12.43
E. S. Central	13	15	4	9	6	27.66	31.92	8.51	19.15	12.77
W. S. Central	52	49	7	39	30	29.38	27.68	3.96	22.05	16.95
Mountain	24	23	1	18	13	30.38	29.11	1.27	22.79	16.46
Pacific	131	112	28	39	55	35.89	30.69	7.67	10.69	15.07
U.S.	753	663	90	473	376	31.98	28.15	3.82	20.09	15.97

Appendix table 42. Persons who drink flavored wines, by region

Region	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
N. England	91	68	0	67	51	32.85	24.55	0.00	24.19	18.41
Mid Atlantic	264	227	56	172	162	29.97	25.77	6.36	19.52	18.39
E. N. Central	461	416	59	271	220	32.31	29.15	4.14	18.99	15.42
W. N. Central	151	118	18	109	76	31.99	25.00	3.81	23.09	16.10
S. Atlantic	236	198	21	167	82	33.52	28.13	2.98	23.72	11.65
E. S. Central	42	36	7	35	27	28.57	24.49	4.76	23.81	18.37
W. S. Central	132	112	14	87	51	33.33	28.28	3.54	21.97	12.88
Mountain	96	80	14	65	33	33.33	27.78	4.86	22.57	11.46
Pacific	345	269	39	191	143	34.95	27.25	3.95	19.35	14.49
U.S.	1818	1524	228	1164	845	32.59	27.34	4.09	20.86	15.15

Appendix table 43. Persons who drink vermouth wines, by region

Region	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
N. England	17	15	0	14	12	29.31	25.86	0.00	24.14	20.69
Mid Atlantic	66	73	4	52	52	26.72	29.56	1.62	21.05	21.05
E. N. Central	63	59	3	51	29	30.73	28.78	1.46	24.88	14.15
W. N. Central	0	1	0	2	0	0.00	33.33	0.00	66.67	0.00
S. Atlantic	27	19	0	22	20	30.68	21.59	0.00	25.00	22.73
E. S. Central	23	22	0	12	1	39.66	37.93	0.00	20.69	1.72
W. S. Central	3	2	0	0	0	60.00	40.00	0.00	0.00	0.00
Mountain	19	21	0	18	13	26.76	29.58	0.00	25.35	18.31
Pacific	47	47	0	35	18	31.97	31.97	0.00	23.81	12.25
U.S.	265	259	7	206	145	30.05	29.37	.79	23.36	16.44

Appendix table 44. Persons who drink brandy wines, by region

Region	Number of responses					Percent of distribution				
	Panel member	Male head	Children	Friends	Relatives	Panel member	Male head	Children	Friends	Relatives
N. England	2	1	0	2	2	28.57	14.29	0.00	28.57	28.57
Mid Atlantic	10	9	1	11	11	23.81	21.43	2.38	26.19	26.19
E. N. Central	14	15	2	12	12	25.46	27.27	3.64	21.82	21.82
W. N. Central	7	5	0	6	3	33.33	23.81	0.00	28.57	14.29
S. Atlantic	13	11	0	11	6	31.71	26.83	0.00	26.83	14.63
E. S. Central	3	0	0	1	0	75.00	0.00	0.00	25.00	0.00
W. S. Central	1	1	0	0	0	50.00	50.00	0.00	0.00	0.00
Mountain	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pacific	27	20	0	19	14	33.75	25.00	0.00	23.75	17.50
U.S.	77	62	3	62	48	30.56	24.60	1.19	24.60	19.05

Appendix table 45. Place of purchase for varietal wines, by region

Region	Number of responses				Percent of distribution			
	Supermarket	Liquor store	Drug store	Other	Supermarket	Liquor store	Drug store	Other
N. England	23	67	4	6	23.00	67.00	4.00	6.00
Mid Atlantic	16	387	1	2	3.94	95.32	.25	.49
E. N. Central	228	138	26	21	55.21	33.41	6.30	5.09
W. N. Central	43	110	4	7	26.22	67.07	2.44	4.27
S. Atlantic	136	84	7	10	57.38	35.44	2.95	4.22
E. S. Central	7	25	1	1	20.59	73.53	2.94	2.94
W. S. Central	50	45	5	7	46.73	42.06	4.67	6.54
Mountain	26	41	2	4	35.62	56.16	2.74	5.48
Pacific	386	125	33	94	60.50	19.59	5.17	14.73
U.S.	915	1022	83	152	42.13	47.05	3.82	7.00

Appendix table 46. Place of purchase for nonvarietal wines, by region

Region	Number of responses				Percent of distribution			
	Supermarket	Liquor store	Drug store	Other	Supermarket	Liquor store	Drug store	Other
N. England	202	479	2	29	28.37	62.28	.28	4.07
Mid Atlantic	123	1589	2	72	6.89	88.97	.11	4.03
E. N. Central	945	422	69	93	61.81	27.60	4.51	6.08
W. N. Central	76	344	9	26	16.70	75.60	1.98	5.71
S. Atlantic	738	264	33	42	68.52	24.51	3.06	3.90
E. S. Central	42	140	6	5	21.76	72.54	3.11	2.59
W. S. Central	339	177	20	27	60.21	31.44	3.55	4.80
Mountain	189	133	16	24	52.21	36.74	4.42	6.63
Pacific	2313	495	151	219	72.78	15.58	4.75	6.89
U.S.	4967	4043	308	537	50.40	41.03	3.13	5.45

Appendix table 47. Place of purchase for dessert wines, by region

Region	Number of responses				Percent of distribution			
	Supermarket	Liquor store	Drug store	Other	Supermarket	Liquor store	Drug store	Other
N. England	25	199	2	12	10.50	83.63	.84	5.04
Mid Atlantic	33	372	10	17	7.64	86.11	2.32	3.94
E. N. Central	155	59	16	11	64.32	24.48	6.64	4.56
W. N. Central	29	50	8	2	32.58	56.18	8.90	2.25
S. Atlantic	227	89	7	14	67.36	26.41	2.07	4.15
S. E. Central	4	92	2	8	3.77	86.79	1.89	7.55
W. S. Central	125	67	5	3	62.50	33.50	2.50	1.50
Mountain	28	77	7	18	21.54	59.23	5.39	13.85
Pacific	307	43	15	42	75.43	10.57	3.69	10.32
U.S.	933	1048	72	127	42.80	48.07	3.30	5.83

Appendix table 48. Place of purchase for sparkling wines, by region

Region	Number of responses				Percent of distribution			
	Supermarket	Liquor store	Drug store	Other	Supermarket	Liquor store	Drug store	Other
N. England	11	40	0	5	19.64	71.43	0.00	8.93
Mid Atlantic	13	178	0	7	6.57	89.90	0.00	3.54
E. N. Central	94	59	26	13	48.96	30.73	13.54	6.77
W. N. Central	20	25	10	0	36.36	45.46	18.18	0.00
S. Atlantic	83	37	4	6	63.85	28.46	3.08	4.62
E. S. Central	1	20	0	0	4.76	95.24	0.00	0.00
W. S. Central	30	26	3	7	45.46	39.39	4.55	10.61
Mountain	11	14	2	0	40.74	51.85	7.41	0.00
Pacific	87	38	11	12	58.78	25.68	7.43	8.11
U.S.	350	437	56	50	39.19	48.94	6.27	5.60

Appendix table 49. Place of purchase for flavored wines, by region

Region	Number of responses				Percent of distribution			
	Supermarket	Liquor store	Drug store	Other	Supermarket	Liquor store	Drug store	Other
N. England	41	59	0	8	37.96	54.63	0.00	7.41
Mid Atlantic	23	258	0	27	7.47	83.77	0.00	8.77
E. N. Central	407	118	25	24	70.91	20.56	4.36	4.18
W. N. Central	43	107	17	16	23.50	58.47	9.29	8.74
S. Atlantic	211	45	4	21	75.09	16.01	1.42	7.47
E. S. Central	18	23	15	3	30.51	38.98	25.42	5.09
W. S. Central	95	45	8	8	60.90	28.85	5.13	5.13
Mountain	49	39	10	5	47.57	37.86	9.71	4.85
Pacific	319	31	14	29	81.17	7.89	3.56	7.38
U.S.	1206	725	97	141	55.60	33.43	4.47	6.50

Appendix table 50. Place of purchase for vermouth wines, by region

Region	Number of responses				Percent of distribution			
	Supermarket	Liquor store	Drug store	Other	Supermarket	Liquor store	Drug store	Other
N. England	0	18	0	0	0.00	100.00	0.00	0.00
Mid Atlantic	10	78	0	0	11.36	88.64	0.00	0.00
E. N. Central	66	10	1	1	84.62	12.82	1.28	1.28
W. N. Central	1	1	0	0	50.00	50.00	0.00	0.00
S. Atlantic	24	9	2	5	60.00	22.50	5.00	12.50
E. S. Central	1	22	0	0	4.35	95.65	0.00	0.00
W. S. Central	1	1	0	1	33.33	33.33	0.00	33.33
Mountain	10	0	8	3	47.62	0.00	38.10	14.29
Pacific	31	20	1	5	54.39	35.09	1.75	8.77
U.S.	144	159	12	15	43.64	48.18	3.64	4.55

Appendix table 51. Place of purchase for brandy wines, by region

Region	Number of responses				Percent of distribution			
	Supermarket	Liquor store	Drug store	Other	Supermarket	Liquor store	Drug store	Other
N. England	0	2	0	0	0.00	100.00	0.00	0.00
Mid Atlantic	0	14	0	1	0.00	93.33	0.00	6.67
E. N. Central	3	9	3	1	18.75	56.25	18.75	6.25
W. N. Central	0	6	1	0	0.00	85.71	14.29	0.00
S. Atlantic	1	12	0	0	7.69	92.31	0.00	0.00
E. S. Central	1	2	0	0	33.33	66.67	0.00	0.00
W. S. Central	0	1	0	0	0.00	100.00	0.00	0.00
Moutain	0	0	0	0	0.00	0.00	0.00	0.00
Pacific	19	7	3	0	65.52	24.14	10.34	0.00
U.S.	24	53	7	2	27.91	61.63	8.14	2.33

Appendix table 52. Average prices paid and market share by major wineries for domestic varietal table wine, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo	6.1	6.2	6.0	4.9	6.4	6.5	5.4	5.0	6.1	6.0
United Vintners	3.4	5.3	6.0	4.6	5.3		4.5	5.7	3.8	4.5
Franzia		4.5	4.0		4.7		4.0		3.4	3.7
Mogen David	5.2	6.1	6.0	6.6	6.4	7.2	5.0	6.6	7.4	6.0
Almaden	7.2	7.4	6.9		8.5	14.6	7.8		7.8	7.5
Canadaigua			6.0							6.0
Guild		3.9	5.6						4.3	4.4
Taylor		6.3	8.7	8.3	9.2	11.6	9.3			8.6
Paul Masson	11.7	7.7	8.6	15.5	5.0	11.4		6.8	10.0	9.6
Christian Brothers		12.1	13.8	10.3	10.1		7.0		11.8	11.5
California Wine					4.1				3.3	3.8
Great Western	6.4	6.1								6.2
Gold Seal	6.6	5.3	5.2	5.1	6.3			8.2		5.5
Other wine companies	5.6	6.8	7.0	7.7	9.3	12.9	8.4	5.8	7.3	7.2
Total average	5.3	6.1	6.3	6.8	6.4	8.8	5.7	6.1	5.8	6.1
					Market share Percent					
Gallo	7.7	7.9	8.7	1.5	5.5	4.8	8.5	7.3	4.2	6.1
United Vintners	21.5	19.2	12.7	30.7	40.3		11.9	9.7	37.1	26.1
Franzia		.6	1.4		2.4		1.8		5.2	2.4
Mogen David	6.2	7.8	33.0	20.6	21.9	63.6	55.7	28.3	.8	15.9
Almaden	4.2	6.8	6.6		1.6	4.8	1.4		2.7	3.8
Canadaigua			5.1							.8
Guild		2.9	1.9						1.4	1.3
Taylor		.5	.5	1.8	1.3	4.8	.7			.5
Paul Masson	.9	.5	.5	3.6	1.8	9.6		11.3	1.5	1.5
Christian Brothers		.5	.5	.8	.9		.7		1.7	.9
California Wine					2.2				.3	.3
Great Western	1.7	2.2								.5
Gold Seal	3.8	13.4	6.1	1.5	5.0			1.6		4.4
Other wine companies	54.0	37.7	22.9	39.5	17.1	12.4	19.2	41.8	45.0	35.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix table 53. Average prices paid and market share by major wineries for domestic nonvarietal table wine, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo	4.8	4.3	4.6	4.1	4.7	4.7	4.0	3.4	3.6	4.1
United Vintners	4.6	4.8	4.9	4.0	6.0	6.4	4.0	4.2	4.4	4.6
Franzia	4.9	4.2	4.1	3.0	4.7	4.1	4.6	3.0	3.1	3.8
Mogen David	6.4	5.7	4.2		5.4		4.7			5.1
Almaden	5.9	6.3	6.3	6.4	6.0		5.1	4.5	5.0	5.6
Canadaigua	3.9	7.6	5.9	6.3	5.3	6.1	4.7			5.5
Guild	3.7	4.3	4.1	4.0	3.5	5.0	4.3	4.7	3.2	3.6
Taylor	5.7	7.5	8.3	6.7	7.8	8.0	7.2	6.2		7.3
Paul Masson	7.3	8.2	7.8	7.9	7.9	7.8	4.1	7.8	6.7	7.3
Christian Brothers	7.5	7.0	8.3	8.3	3.0	8.9	9.4	3.8	3.4	6.6
California Wine	3.5		2.3			15.6	2.4	2.5	4.0	2.9
Great Western	4.5	7.8	5.4		8.0		7.8		10.7	7.5
Gold Seal	6.0	5.5	5.0	4.9	3.9					5.4
Other wine companies	4.0	4.1	5.5	5.5	4.0	6.2	4.0	3.7	2.9	3.7
Total average	4.7	4.7	5.2	4.9	4.8	5.5	4.5	3.9	3.5	4.3
					Market share Percent					
Gallo	30.1	31.8	44.0	42.3	29.0	47.8	39.0	29.1	28.5	32.7
United Vintners	9.7	10.8	15.3	14.5	10.0	7.5	9.2	20.1	11.5	11.9
Franzia	.1	.4	.7	1.1	7.9	3.5	2.0	1.6	2.9	2.3
Mogen David	.1	.2	.3		.1		.1			.1
Almaden	8.5	7.1	3.8	.9	6.1		11.6	3.4	4.4	5.5
Canadaigua	1.9	.6	1.5	.2	2.2	.5	1.4			.7
Guild	4.5	1.1	6.1	1.1	7.9	16.8	.1	2.2	6.6	4.7
Taylor	4.7	2.8	2.3	4.2	5.5	8.3	3.6	2.1		2.3
Paul Masson	2.7	1.4	2.1	3.8	1.5	4.0	1.7	4.0	1.8	2.0
Christian Brothers	1.2	.5	4.1	3.1	1.2	.5	3.8	1.6	1.0	1.6
California Wine	2.5		.6			.3	1.0	10.2	.2	.8
Great Western	.3	1.7	.4		.1		.1			.4
Gold Seal	.3	1.0	.2	.9	.1					.3
Other wine companies	33.4	40.6	18.6	28.0	28.5	10.8	26.3	25.7	43.0	34.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix table 54. Average prices paid and market share by major wineries for domestic dessert wine, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo	3.0	4.6	4.8	5.2	5.7	6.5	4.0	3.6	4.0	4.5
United Vintners	3.9	5.2	4.1	3.4	4.8	5.5	5.0	3.9	5.0	4.6
Franzia			6.1	5.0	5.5		3.9		4.0	5.0
Mogen David				5.3						5.3
Almaden	5.7	7.0	7.7	8.0	9.5	5.2		7.3	7.1	6.9
Canadaigua										
Guild	3.9	4.7	4.6		4.7	5.3		4.9	7.0	4.8
Tayler	6.0	8.0	8.1	7.0	8.0	8.9	6.9	6.5		7.2
Paul Masson	7.9	8.7	7.7	10.1	6.8	6.1		5.5	10.9	9.1
Christian Brothers	7.0	7.3	8.8	8.2	12.3	7.6	7.9	6.1	8.1	8.2
California Wine	3.6									3.6
Great Western	6.7	9.8					7.8			9.5
Gold Seal										
Other wine companies	5.4	4.9	5.8	5.7	11.4	6.3	3.4	5.2	4.9	5.2
Total Average	5.0	5.7	5.7	6.2	6.2	6.6	5.7	4.3	5.3	5.6
					Market share Percent					
Gallo	13.4	45.7	39.4	24.3	32.8	41.2	18.8	63.9	55.1	39.4
United Vintners	9.9	3.7	13.9	6.2	28.7	4.3	1.7	4.3	5.5	8.7
Franzia			.5	2.7	2.8		.6		.9	.7
Mogen David				1.7						.1
Almaden	7.8	3.1	5.5	14.4	1.2	4.7		1.2	7.0	4.4
Canadaigua										
Guild	10.2	.2	2.6		6.3	17.0		.6	2.0	3.5
Taylor	19.5	8.8	10.2	18.5	20.7	17.0	57.2	11.0		15.2
Paul Masson	4.1	2.2	4.5	2.7	2.8	2.4		1.5	9.8	3.8
Christian Brothers	.4	4.0	6.1	2.7	2.4	4.3	2.8	1.5	4.4	3.3
California Wine	.5									.1
Great Western	1.9	9.0					.6			2.6
Gold Seal										
Other wine companies	32.3	23.2	17.3	26.6	2.4	9.2	18.4	15.9	15.3	18.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix table 55. Average prices paid and market share by major wineries for domestic sparkling wine, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo	13.8	9.2	7.5	8.3	8.3	10.2	7.7	7.8	7.5	8.3
United Vintners	11.7	10.9	8.6		8.2	9.6	9.1	11.7	7.8	8.4
Franzia	7.4		7.3	7.7	9.8		6.8	7.3	7.8	12.2
Mogen David	4.3	3.9	6.5	4.0	5.6					5.1
Almaden	13.7	19.5			13.6				15.7	15.5
Canadaigua										
Guild		8.1	8.7			4.7	36.7	7.2	7.6	9.2
Taylor	17.4	10.1	19.7	18.2	15.1	21.9	17.9			13.4
Paul Masson			14.3		14.0		9.2		12.7	13.5
Christian Brothers						19.8				19.8
California Wine										
Great Western	11.5	17.3	12.7		9.4					14.0
Gold Seal		7.0	14.8		19.1					8.4
Other wine companies	9.6	10.9	9.1	9.6	10.1	5.6	7.9		8.9	9.5
Total average	12.7	9.9	8.3	9.1	9.3	9.7	9.0	7.8	8.3	9.2
					Market share Percent					
Gallo	41.3	40.8	62.3	56.8	66.4	23.1	49.9	62.7	46.2	51.6
United Vintners	1.8	.7	7.0		2.8	23.1	4.6	3.4	20.8	6.5
Franzia	10.1		3.7	1.5	4.4		4.3	27.1	1.7	3.4
Mogen David	3.7	.5	1.2	1.9	.9					.8
Almaden	3.7	.4			.9				3.4	.9
Canadaigua										
Guild		8.9	4.9			19.2	1.7	6.8	3.4	4.5
Taylor	12.8	14.6	1.6	4.6	7.8	7.7	7.0			6.6
Paul Masson			2.9		.9		.9		1.3	1.0
Christian Brothers						7.7				.1
California Wine										
Great Western	17.4	4.0	.8		1.7					2.2
Gold Seal		4.8	.4		.9					1.4
Other wine companies	9.2	25.3	15.1	35.1	13.3	19.2	31.6		23.3	21.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix table 56. Average prices paid and market share by major wineries for domestic flavored wine, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo	3.9	4.5	5.0	4.3	5.2	5.5	4.5	3.2	4.0	4.5
United Vintners	3.6	5.2	4.9	5.1	6.6	4.7	3.7	4.7	4.6	4.9
Franzia							9.6			9.6
Mogen David	6.5	6.6	6.0	5.1	6.3	7.4	5.5	6.0		5.9
Almaden			7.8			6.4			3.3	5.0
Canadaigua	4.5	3.9	4.5	7.6	5.3	5.9				5.1
Guild		7.0	6.0		5.9		1.6	5.4	6.4	4.4
Taylor	5.0	9.0	8.4	8.6	7.2	7.4	5.8	7.8		7.8
Paul Masson	8.9	8.6	7.9	8.2	7.3		7.5	6.2	7.7	7.6
Christian Brothers					9.4		7.4			8.4
California Wine									11.7	11.7
Great Western										
Gold Seal										
Other wine companies	5.5	6.6	5.7	6.6	6.9	9.1	5.1	4.7	6.8	6.2
Total average	4.4	5.5	5.3	5.1	6.0	6.1	4.8	4.2	4.6	5.2
					Market share Percent					
Gallo	50.8	50.4	46.6	41.9	44.2	61.7	38.4	47.2	68.0	50.4
United Vintners	15.3	14.8	10.6	17.0	10.5	8.9	7.6	23.9	14.5	13.6
Franzia							2.5			.1
Mogen David	7.1	2.4	19.4	18.1	12.4	4.3	18.8	4.3		10.0
Almaden			.2			1.7			.7	.2
Canadaigua	2.7	.3	1.9	1.0	1.9	6.0				1.1
Guild		.3	.2		1.8		4.1	.7	.3	.6
Taylor	5.6	5.5	.4	.5	2.9	3.4	.8	4.0		2.1
Paul Masson	.9	.6	.6	1.4	1.4		1.1	2.3	1.1	1.0
Christian Brothers					.4		.8			.1
California Wine									.3	.1
Great Western										
Gold Seal										
Other wine companies	17.6	25.7	20.0	20.0	24.6	14.0	25.9	17.6	15.2	20.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix table 57. Average prices paid and market share by major wineries for vermouth, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo		6.9	6.0		5.8		5.0	4.6	4.9	5.7
United Vintners	3.7	5.7	7.5	4.0	5.9	5.7	7.5		4.9	5.5
Franzia					5.8			3.9	4.3	5.0
Mogen David	10.5	5.3	6.0		8.9	7.6			7.0	6.0
Alamden					8.0					8.0
Canadaigua										
Guild			10.1	8.1					4.3	8.1
Taylor	5.8	7.1	6.6		6.6					6.6
Paul Masson		6.0				6.4			6.2	6.2
Christian Brothers			7.2							7.2
California Wine					5.4					5.4
Great Western	5.1									5.1
Gold Seal										
Other wine companies	5.4	5.6	8.0		5.2	7.7			5.4	6.1
Total average	5.4	5.7	7.1	6.7	6.0	6.5	6.4	4.3	5.3	6.0
					Market share Percent					
Gallo		2.3	39.8		19.7		44.4	50.0	24.8	15.4
United Vintners	24.5	14.4	2.5	33.3	17.6	30.8	55.6		10.6	14.4
Franzia					14.1			50.0	10.6	4.4
Mogen David	6.5	18.2	9.3		2.8	7.7			3.5	10.2
Almaden					2.8					.4
Canadaigua										
Guild			5.0	66.7					3.5	2.4
Taylor	16.3	5.9	2.5		22.5					7.3
Paul Masson		2.6				46.2			24.8	6.7
Christian Brothers			3.1							.5
California Wine					5.6					.9
Great Western	6.5									.4
Gold Seal										
Other wine companies	46.1	56.6	37.9		14.8	15.4			22.1	36.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix table 58. Average prices paid and market share by major wineries for domestic brandy, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo					6.6					6.6
United Vintners		32.1	33.2	16.1	18.0					19.2
Franzia							14.0		19.5	
Mogen David				13.7						13.7
Almaden					19.5					19.5
Canadaigua										
Guild										
Taylor										
Paul Masson	18.7									18.7
Christian Brothers		19.6			12.7				5.5	12.6
California Wine										
Great Western										
Gold Seal										
Other wine companies	14.6	19.2	14.9	5.0	14.1	2.7			12.6	13.4
Total average	16.2	20.3	16.8	13.8	16.0	2.7	14.0		11.8	14.9
					Market share Percent					
Gallo					15.4					3.3
United Vintners		7.2	10.1	50.0	7.7					18.0
Franzia							100.0		15.0	
Mogen David				37.5						6.2
Almaden					53.8					11.6
Canadaigua										
Guild										
Taylor										
Paul Masson	40.0									1.0
Christian Brothers		40.1			7.7				26.2	13.3
California Wine										
Great Western										
Gold Seal										
Other wine companies	60.0	52.7	89.9	12.5	15.4	100.0			58.9	46.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0		100.0	100.0

Appendix table 59. Average prices paid and market share by major wineries for domestic other wine, by region

Wine company	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total all regions
					Average price Cents per pound					
Gallo					3.2			6.2		4.9
United Vintners										
Franzia										
Mogen David										
Almaden	5.5									5.5
Canadaigua					6.6					6.6
Guild					5.3					5.3
Taylor										
Paul Masson										
Christian Brothers										
California Wine										
Great Western										
Gold Seal										
Other wine companies	7.6	7.8	20.0	7.9	9.0	7.8	7.3	5.4	3.9	8.8
Total average	6.7	7.8	20.0	7.9	7.1	7.8	7.3	5.6	3.9	8.1
					Market share Percent					
Gallo					16.4			26.9		7.1
United Vintners										
Franzia										
Mogen David										
Almaden	42.1									7.9
Canadaigua					15.4					3.0
Guild					16.4					3.2
Taylor										
Paul Masson										
Christian Brothers										
California Wine										
Great Western										
Gold Seal										
Other wine companies	57.9	100.0	100.0	100.0	51.7	100.0	100.0	73.1	100.0	78.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Appendix table 60. Household demographics and wine purchasing patterns for those purchasing less wine, New England region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	Domestic			
Varietal table	1	25	5.0	9,500
Nonvarietal table	3	32	3.5	9,167
Dessert	3	35	5.0	10,167
Sparkling	1	65	3.0	9,500
Flavored	1	35	4.0	17,500
	Imported			
Nonvarietal table	1	35	4.0	17,500
Flavored	1	45	2.0	10,500
Vermouth	1	35	5.0	10,500
Other	1	25	4.0	10,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 61. Household demographics and wine purchasing patterns for those purchasing more wine, New England region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	Domestic			
Varietal table	1	25	4.0	14,000
Nonvarietal table	14	38	3.5	14,643
Dessert	6	38	3.7	15,250
Sparkling	2	40	2.0	11,000
Flavored	3	35	2.3	12,000
Other	1	35	4.0	12,500
	Imported			
Nonvarietal table	6	38	3.3	14,167
Dessert	3	42	3.3	12,000

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 62. Household demographics and wine purchasing patterns for those purchasing the same wine, New England

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	3	28	3.0	13,333
Nonvarietal table	35	32	4.1	16,729
Dessert	8	39	4.0	15,125
Sparkling	8	30	4.0	13,938
Flavored	6	28	4.0	14,333
Brandy	1	15	5.0	17,500
Other	1	25	5.0	14,000
	---------- Imported ----------			
Nonvarietal table	14	29	4.1	17,679
Dessert	2	40	4.5	20,000
Sparkling	1	45	3.0	17,500
Flavored	3	35	3.0	13,000
Vermouth	1	35	4.0	22,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 63. Household demographics and wine purchasing patterns for those purchasing less wine, Middle Atlantic region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	4	38	4.8	12,750
Nonvarietal table	16	34	3.7	14,344
Dessert	7	36	3.4	13,857
Sparkling	2	25	4.5	17,500
Flavored	4	40	3.8	15,000
Vermouth	1	25	5.0	17,500
	---------- Imported ----------			
Nonvarietal table	9	36	3.9	15,222
Flavored	1	15	3.0	17,500
Other	1	25	2.0	17,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 64. Household demographics and wine purchasing patterns for those purchasing more wine, Middle Atlantic region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	13	31	4.2	16,346
Nonvarietal table	55	33	4.0	16,891
Dessert	13	41	3.6	15,808
Sparkling	11	32	3.7	17,091
Flavored	19	33	3.7	14,184
Vermouth	5	27	4.5	13,000
Brandy	2	40	5.0	18,250
Other	2	40	4.0	20,000
	---------- Imported ----------			
Nonvarietal table	35	30	4.3	16,657
Dessert	5	33	4.6	19,800
Sparkling	1	25	5.0	22,500
Flavored	8	30	3.5	15,188
Vermouth	4	23	4.3	18,750

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 65. Household demographics and wine purchasing patterns for those purchasing the same wine, Middle Atlantic region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	38	37	4.0	16,711
Nonvarietal table	87	34	3.9	15,161
Dessert	17	41	4.1	15,176
Sparkling	26	33	4.3	17,038
Flavored	29	34	3.5	13,569
Vermouth	3	45	4.3	18,833
Brandy	3	45	2.7	11,500
	---------- Imported ----------			
Varietal table	2	35	4.0	17,000
Nonvarietal table	39	33	4.2	16,449
Dessert	3	32	5.0	22,500
Sparkling	1	25	5.0	17,500
Flavored	13	30	4.1	14,192
Vermouth	3	38	4.7	20,833
Brandy	2	35	5.0	15,000
Other	1	35	5.0	22,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 66. Household demographics and wine purchasing patterns for those purchasing less wine, East North Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	7	34	3.3	15,071
Nonvarietal table	13	40	3.3	13,538
Dessert	9	45	2.6	15,167
Sparkling	3	32	3.3	14,667
Flavored	12	30	2.9	10,667
Vermouth	2	50	3.0	12,000
Other	1	55	1.0	4,000
	---------- Imported ----------			
Nonvarietal table	3	32	3.7	7,333
Dessert	1	65	4.0	4,000
Sparkling	2	45	3.5	20,000

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 67. Household demographics and wine purchasing patterns for those purchasing more wine, East North Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	18	34	4.0	17,111
Nonvarietal table	63	35	4.0	17,278
Dessert	7	35	4.4	19,143
Sparkling	13	33	3.8	16,923
Flavored	23	34	3.6	15,674
Vermouth	2	50	2.5	11,750
Brandy	1	25	3.0	11,500
	---------- Imported ----------			
Nonvarietal table	29	29	4.0	16,155
Dessert	1	35	2.0	17,500
Flavored	6	40	4.2	17,167
Vermouth	1	25	5.0	22,500
Brandy	1	25	3.0	14,000

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 68. Household demographics and wine purchasing patterns for those purchasing the same wine, East North Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	32	38	3.5	15,813
Nonvarietal table	82	38	4.0	16,683
Dessert	15	40	3.9	15,400
Sparkling	21	38	4.0	18,262
Flavored	48	34	3.6	15,625
Vermouth	5	45	4.3	12,800
Brandy	3	45	4.3	17,500
Other	1	15	5.0	8,500
	---------- Imported ----------			
Nonvarietal table	38	35	4.0	17,816
Dessert	3	28	4.7	19,167
Flavored	13	33	3.5	16,846
Vermouth	2	45	5.0	15,000
Other	1	25	5.0	17,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 69. Household demographics and wine purchasing patterns for those purchasing less wine, West North Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	1	55	2.0	4,000
Nonvarietal table	6	37	3.5	15,417
Dessert	1	25	3.0	8,500
Flavored	3	58	2.3	9,333
	---------- Imported ----------			
Nonvarietal table	1	25	3.0	17,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 70. Household demographics and wine purchasing patterns for those purchasing more wine, West North Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	2	50	2.5	9,500
Nonvarietal table	12	38	3.7	16,083
Dessert	5	47	3.0	16,500
Sparkling	2	40	4.0	14,250
Flavored	10	42	3.2	15,300
	---------- Imported ----------			
Nonvarietal	8	33	4.0	13,125
Sparkling	1	25	5.0	22,500
Flavored	2	50	4.5	22,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 71. Household demographics and wine purchasing patterns for those purchasing the same wine, West North Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	16	44	3.7	15,813
Nonvarietal table	35	39	3.8	15,586
Dessert	7	39	4.4	17,429
Sparkling	9	29	3.6	13,389
Flavored	22	35	3.8	14,386
	---------- Imported ----------			
Nonvarietal table	15	37	4.3	15,667
Flavored	2	35	5.0	20,000

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 72. Household demographics and wine purchasing patterns for those purchasing less wine, South Atlantic region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	3	55	3.5	6,167
Nonvarietal table	11	39	4.1	13,864
Dessert	4	60	4.5	9,625
Sparkling	2	25	5.0	12,750
Flavored	5	49	3.0	15,500
	---------- Imported ----------			
Nonvarietal table	2	25	4.0	13,000
Flavored	2	40	4.5	9,500
Brandy	1	55	5.0	10,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more .

Appendix table 73. Household demographics and wine purchasing patterns for those purchasing more wine, South Atlantic region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	6	32	4.6	16,083
Nonvarietal table	13	35	4.7	18,077
Dessert	4	33	4.3	20,375
Sparkling	3	28	4.7	17,833
Flavored	8	26	3.9	14,500
Vermouth	2	45	4.5	22,500
	---------- Imported ----------			
Nonvarietal table	7	34	4.3	19,143
Flavored	2	45	4.0	22,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more .

Appendix table 74. Household demographics and wine purchasing patterns for those purchasing the same wine, South Atlantic region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	7	42	3.7	11,429
Nonvarietal table	39	39	4.0	15,462
Dessert	14	46	3.9	17,714
Sparkling	9	37	4.7	18,944
Flavored	19	42	3.6	16,026
Brandy	3	38	4.7	20,833
Other	1	35	5.0	17,500
	---------- Imported ----------			
Nonvarietal table	15	33	4.1	17,567
Dessert	1	35	5.0	22,500
Sparkling	1	35	5.0	17,500
Flavored	3	25	2.5	12,500
Vermouth	1	35	0.0	10,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 75. Household demographics and wine purchasing patterns for those purchasing less wine, East South Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Nonvarietal table	1	25	4.0	11,500
Flavored	2	30	4.5	14,500
Vermouth	1	45	3.0	14,000
	---------- Imported ----------			
Nonvarietal table	1	45	3.0	14,000

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 76. Household demographics and wine purchasing patterns for those purchasing more wine, East South Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	3	28	4.0	9,833
Nonvarietal table	5	35	4.0	13,900
Dessert	2	35	3.0	12,750
Flavored	2	30	3.5	15,750
Other	1	15	5.0	7,500
	---------- Imported ----------			
Nonvarietal table	1	35	5.0	22,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 77. Household demographics and wine purchasing patterns for those purchasing the same wine, East South Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	3	25	2.7	11,333
Nonvarietal table	7	35	4.3	14,714
Dessert	3	45	4.3	19,167
Sparkling	3	48	5.0	8,333
Flavored	5	49	4.3	13,000
Vermouth	1	35	5.0	17,500
	---------- Imported ----------			
Nonvarietal table	2	40	3.0	14,250

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 78. Household demographics and wine purchasing patterns for those purchasing less wine, West South Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	3	32	4.0	16,000
Nonvarietal table	5	45	4.4	15,800
Dessert	2	50	3.0	11,750
Sparkling	1	25	3.0	22,500
Flavored	5	37	3.6	17,400
	---------- Imported ----------			
Nonvarietal table	4	40	3.5	15,375
Flavored	1	35	3.0	22,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 79. Household demographics and wine purchasing patterns for those purchasing more wine, West South Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	5	29	4.4	13,900
Nonvarietal table	16	34	4.2	15,656
Dessert	2	50	4.0	18,250
Sparkling	4	35	4.3	15,375
Flavored	7	38	3.8	16,286
	---------- Imported ----------			
Nonvarietal table	6	32	4.5	17,000
Flavored	2	35	4.0	12,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 80. Household demographics and wine purchasing patterns for those purchasing the same wine, West South Central region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	9	35	4.6	19,889
Nonvarietal table	23	33	4.4	17,152
Dessert	14	38	3.7	14,821
Sparkling	7	39	4.6	19,000
Flavored	7	38	3.7	15,714
Brandy	1	25	4.0	8,500
	---------- Imported ----------			
Nonvarietal table	12	32	4.3	18,083
Flavored	3	35	4.7	16,333

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 81. Household demographics and wine purchasing patterns for those purchasing less wine, Mountain region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	5	39	4.5	15,100
Nonvarietal table	7	42	3.9	11,500
Flavored	7	32	3.3	11,929
	---------- Imported ----------			
Nonvarietal table	1	25	3.0	11,500
Flavored	1	35	3.0	17,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 82. Household demographics and wine purchasing patterns for those purchasing more wine, Mountain region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	2	30	4.0	18,250
Nonvarietal table	12	30	4.5	15,375
Dessert	1	25	3.0	14,000
Sparkling	3	32	5.0	20,833
Flavored	4	35	3.8	11,625
	---------- Imported ----------			
Nonvarietal table	5	37	3.4	15,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 83. Household demographics and wine purchasing patterns for those purchasing the same wine, Mountain region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	6	48	3.7	14,083
Nonvarietal table	19	39	4.0	14,316
Dessert	4	50	4.5	16,625
Sparkling	5	41	4.6	15,200
Flavored	13	38	3.7	10,846
Other	1	20	0.0	7,500
	---------- Imported ----------			
Nonvarietal table	8	33	4.6	18,563
Flavored	1	25	0.0	4,000

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 84. Household demographics and wine purchasing patterns for those purchasing less wine, Pacific region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	11	42	3.6	18,364
Nonvarietal table	19	41	3.8	17,053
Dessert	8	48	3.5	16,875
Sparkling	6	33	4.0	16,083
Flavored	9	38	3.0	11,889
Vermouth	1	25	5.0	17,500
Brandy	1	25	5.0	17,500
	---------- Imported ----------			
Nonvarietal table	5	27	3.0	13,300

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 85. Household demographics and wine purchasing patterns for those purchasing more wine, Pacific region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	22	34	4.1	19,386
Nonvarietal table	51	36	4.1	18,069
Dessert	12	35	4.4	18,333
Sparkling	7	35	4.6	18,857
Flavored	8	39	3.8	12,188
Vermouth	3	38	3.7	20,833
Brandy	2	25	4.0	20,000
	---------- Imported ----------			
Nonvarietal table	8	38	4.3	18,500
Dessert	2	25	4.0	18,250
Flavored	1	35	5.0	22,500

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 86. Household demographics and wine purchasing patterns for those purchasing the same wine, Pacific region

Wine type purchased	Number of households	Age of wife Years	Education of male head a/	Household income Dollars
	---------- Domestic ----------			
Varietal table	51	38	4.2	16,098
Nonvarietal table	137	39	3.9	14,803
Dessert	32	44	3.7	14,000
Sparkling	20	37	4.3	16,075
Flavored	39	38	3.7	14,782
Vermouth	5	43	3.6	16,500
Brandy	1	45	4.0	14,000
Other	2	35	4.5	16,500
	---------- Imported ----------			
Nonvarietal table	29	42	4.4	18,362
Flavored	4	30	4.7	16,750

a/ Education codes: 1 - grade school; 2 - some high school; 3 - graduated high school; 4 - some college; 5 - graduated college or more.

Appendix table 87. Demand functions by regions for red varietal table wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Slope coefficients: PR DTNVR Cents/oz.	Functional form a/	$\overline{Q}$	n	R^2	S	S_y
N. England	4.066	-0.711			DL	3.139	18	.15	.88	.93
t-values	6.97	-1.70								
means		1.303								
Mid Atlantic	3.684	-0.751	0.266		DL	3.032	107	.33	.54	.65
t-values	15.39	-7.10	1.87							
means		1.438	1.604							
E. N. Central	3.829	-0.888	0.236		DL	2.924	71	.39	.50	.63
t-values	12.00	-6.41	1.52							
means		1.449	1.613							
W. N. Central	3.573	-0.354			DL	3.024	22	.14	.38	.40
t-values	11.32	-1.80								
means		1.548								
S. Atlantic	4.572	-1.065			DL	2.961	54	.41	.56	.72
t-values	16.47	-6.04								
means		1.514								
E. S. Central							0			
t-values										
means										
W. S. Central	3.236	-0.958	0.588		DL	2.830	29	.45	.42	.55
t-values	9.77	-4.49	2.91							
means		1.374	1.548							
Mountain	3.585	-0.927	0.555		DL	3.235	14	.29	.53	.58
t-values	6.32	-2.06	1.52							
means		1.258	1.470							
Pacific	2.519	-0.808	0.498	1.048	DL	3.067	218	.37	.61	.76
t-values	4.70	-10.36	4.84	1.88						
means		1.441	1.611	0.868						

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 88. Demand functions by regions for white varietal table wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Per capita income $1,000	PR DTNVW Cents/oz.	PR DTVR Cents/oz.	Functional form a/	$\overline{Q}$	n	R^2	S	S_y
N. England	3.341	-0.363				DL	2.820	15	.16	.37	.39
t-values	9.70	-1.57									
means		1.436									
Mid Atlantic	2.574	-0.485	0.669			DL	2.894	68	.24	.52	.59
t-values	7.83	-3.60	3.99								
means		1.562	1.609								
E. N. Central	3.904	-0.774				DL	2.808	71	.24	.49	.55
t-values	16.13	-4.66									
means		1.416									
W. N. Central	69.487	-7.062				L	38.801	19	.07	59.26	59.64
t-values	2.25	-1.11									
means		4.345									
S. Atlantic	3.952	-0.714				DL	2.859	25	.23	.51	.56
t-values	9.11	-2.59									
means		1.529									
E. S. Central								0			
t-values											
means											
W. S. Central	21.768	-3.461	2.606			L	19.781	18	.51	6.40	8.58
t-values	5.00	-3.48	3.20								
means		4.011	4.565								
Mountain	2.081	-0.682		1.124	0.634	DL	2.983	15	.65	.42	.63
t-values	2.15	-3.05		1.13	1.26						
means		1.393		0.905	1.315						
Pacific	3.382	-0.648	0.338			DL	2.892	154	.19	.62	.69
t-values	13.44	-5.13	3.20								
means		1.543	1.514								

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 89. Demand functions by regions for pink varietal table wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Slope coefficients: PR DTNVP Cents/oz.	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	4.581	-1.688	0.420		DL	2.941	25	.68	.41	.70
t-values	16.82	-5.89	1.51							
means		1.238	1.071							
Mid Atlantic	2.923	-1.028	0.603	0.623	DL	3.227	88	.41	.52	.67
t-values	3.82	-6.37	4.66	1.01						
means		1.219	1.444	1.100						
E. N. Central	3.348	-0.746	0.391		DL	2.952	60	.21	.56	.62
t-values	9.33	-3.03	2.72							
means		1.253	1.376							
W. N. Central	35.958	-5.232	3.672		L	32.978	12	.43	12.29	14.76
t-values	2.98	-2.22	1.58							
means		3.326	3.927							
S. Atlantic	3.704	-0.605			DL	2.861	33	.07	.46	.47
t-values	6.74	-1.55								
means		1.394								
E. S. Central							0			
t-values										
means										
W. S. Central	3.177	-1.121	0.723		DL	2.943	14	.57	.38	.54
t-values	5.26	-2.97	2.45							
means		1.121	1.416							
Mountain	37.205	-4.160			DL	21.497	13	.22	9.69	10.54
t-values	4.05	-1.79								
means		3.776								
Pacific	3.320	-0.947	0.566		DL	3.272	61	.44	.50	.66
t-values	8.86	-5.08	3.22							
means		1.000	1.589							

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 90. Demand functions by regions for Concord varietal table wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Slope coefficients: PR DTVR Cents/oz.	Functional form a/	$\overline{Q}$	n	R^2	S	S_y
N. England	3.758	-0.478	0.260		DL	2.8672	27	.15	.57	.59
t-values	6.90	-1.04	-1.15							
means		1.2958	1.0462							
Mid Atlantic	4.081	-1.067	0.328		DL	3.0923	99	.27	.55	.64
t-values	12.87	-5.45	2.59							
means		1.3618	1.4155							
E. N. Central	3.299	-0.659	0.243		DL	2.7114	147	.20	.49	.54
t-values	17.93	-5.51	3.03							
means		1.3517	1.2487							
W. N. Central	3.856	-0.793			DL	2.7471	60	.24	.48	.55
t-values	14.57	-4.31								
means		1.3986								
S. Atlantic	3.688	-0.695			DL	2.6738	72	.16	.38	.41
t-values	13.12	-3.65								
means		1.4605								
E. S. Central	4.099	-1.146	0.276		DL	2.7219	19	.80	.28	.58
t-values	13.72	-6.59	3.10							
means		1.4713	1.1194							
W. S. Central	4.857	-1.331			DL	3.0760	25	.23	.78	.87
t-values	6.87	-2.59								
means		1.3381								
Mountain	4.440	-1.156			DL	2.8128	18	.17	.64	.68
t-values	4.85	-1.80								
means		1.4075								
Pacific	3.274	-1.291	0.170	0.468	DL	2.5131	39	.62	.34	.52
t-values	5.96	-5.88	1.34	2.37						
means		1.4042	1.1378	1.8346						

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 91. Demand functions by regions for red nonvarietal table wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Per capita income $1,000	PR DTVR Cents/oz.	PR DTVW Cents/oz.	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	4.332	-1.223	0.151			DL	3.1845	216	.40	.66	.86
t-values	28.63	-11.87	2.01								
means		1.090	1.262								
Mid Atlantic	3.640	-1.233	0.130	0.225	0.428	DL	3.3570	615	.44	.68	.91
t-values	10.02	-21.39	2.51	1.87	2.29						
means		1.172	1.478	1.336	1.559						
E. N. Central	3.278	-0.712	0.357			DL	2.9502	491	.24	.57	.66
t-values	29.93	-11.22	6.19								
means		1.1630	1.3982								
W. N. Central	3.292	-0.906	0.144	0.403		DL	2.9643	142	.37	.55	.69
t-values	9.42	-9.04	1.68	1.70							
means		1.2147	1.3062	1.4498							
S. Atlantic	4.281	-1.012				DL	3.0042	350	.30	.59	.71
t-values	38.97	-12.14									
means		1.2619									
E. S. Central	3.698	-0.786	0.121			DL	2.7944	71	.38	.48	.60
t-values	14.04	-5.51	1.37								
means		1.3518	1.3120								
W. S. Central	3.674	-0.936	0.269			DL	3.1256	206	.34	.57	.70
t-values	23.54	-10.00	3.03								
means		1.0006	1.4438								
Mountain	4.294	-1.092				DL	3.1475	95	.44	.51	.67
t-values	29.92	-8.57									
means		1.0495									
Pacific	3.332	-0.833	0.510			DL	3.3603	847	.37	.61	.76
t-values	36.13	-19.29	9.73								
means		0.8913	1.5107								

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 92. Demand functions by regions for white nonvarietal table wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Slope coefficients: PR DTVW Cents/oz.	Functional form a/	$\overline{Q}$	n	R^2	S	S_y
N. England	3.516	-0.772	0.296		DL	3.0141	192	.29	.53	.61
t-values	24.64	-8.11	3.81							
means		1.1659	1.3476							
Mid Atlantic	3.536	-1.038	0.378	0.230	DL	3.1210	499	.41	.57	.74
t-values	11.78	-17.15	6.73	1.30						
means		1.2870	1.4828	1.5711						
E. N. Central	3.432	-0.809	0.339		DL	2.8697	360	.28	.55	.65
t-values	25.73	-11.23	4.94							
means		1.3011	1.4470							
W. N. Central	3.971	-0.961	0.276		DL	3.0231	106	.35	.56	.68
t-values	18.39	-7.12	2.92							
means		1.2133	1.4442							
S. Atlantic	4.302	-1.197	0.154		DL	2.9596	252	.44	.50	.66
t-values	28.35	-13.68	2.36							
means		1.3099	1.4634							
E. S. Central	3.648	-1.039	0.444		DL	2.9470	61	.23	.66	.74
t-values	7.57	-3.65	2.27							
means		1.3456	1.5673							
W. S. Central	3.892	-1.017	0.247		DL	3.0684	131	.25	.72	.83
t-values	13.22	-6.24	1.69							
means		1.1652	1.4619							
Mountain	4.191	-1.003			DL	3.1655	80	.51	.48	.68
t-values	33.26	-9.01								
means		1.0227								
Pacific	3.411	-0.790	0.433		DL	3.2804	688	.32	.63	.76
t-values	34.99	-16.42	7.72							
means		0.9736	1.4757							

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 93. Demand functions by regions for pink nonvarietal table wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Per capita income $1,000	PR DTVP Cents/oz.	PR DTVR Cents/oz.	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	4.235	-1.018				DL	3.0851	124	.34	.54	.68
t-values	27.62	-7.91									
means		1.1292									
Mid Atlantic	3.910	-0.994	0.332			DL	3.2152	280	.44	.54	.72
t-values	33.09	-14.67	5.00								
means		1.1823	1.4463								
E. N. Central	3.334	-0.730	0.351			DL	2.9374	352	.32	.52	.63
t-values	27.88	-12.55	4.97								
means		1.2449	1.4598								
W. N. Central	3.901	-0.890	0.106	0.115		DL	3.1240	103	.43	.45	.59
t-values	21.06	-8.26	1.09	1.21							
means		1.1756	1.3930	1.0620							
S. Atlantic	4.514	-1.283	0.104			DL	3.1378	205	.50	.54	.76
t-values	25.64	-14.11	1.02								
means		1.1977	1.5473								
E. S. Central	5.264	-1.747				DL	2.9803	26	.38	.65	.81
t-values	8.69	-3.85									
means		1.3070									
W. S. Central	3.462	-0.118		0.427	0.459	DL	3.2616	105	.27	.82	.95
t-values	6.49	-5.82		1.20	1.64						
means		1.0499	1.4033	1.0636	1.2854						
Mountain	3.828	-1.026	0.321			DL	3.2621	80	.47	.49	.66
t-values	18.13	-8.34	2.03								
means		0.9436	1.2528								
Pacific	4.037	-1.031	0.189			DL	3.5796	650	.43	.65	.86
t-values	46.52	-22.20	3.37								
means		0.7064	1.4343								

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 94. Demand functions by regions for sherry dessert wines

Region	Intercept	Price Cents/oz.	Per capita income $1,000	PR DPØRT Cents/oz.	Functional form a/	$\overline{Q}$	n	R^2	S	S_y
N. England	3.619	-0.979	0.407		DL	2.9482	97	.39	.60	.76
t-values	13.80	-6.56	3.50							
means		1.2572	1.3779							
Mid Atlantic	3.472	-0.642	0.228		DL	2.9308	191	.18	.59	.65
t-values	18.10	-5.54	3.37							
means		1.3596	1.4520							
E. N. Central	2.697	-0.223	0.165		DL	2.6368	133	.05	.45	.45
t-values	15.72	-2.39	1.76							
means		1.368	1.485							
W. N. Central	3.360	-0.752	0.261		DL	2.720	35	.24	.48	.54
t-values	8.83	-2.99	1.57							
means		1.3167	1.3415							
S. Atlantic	3.847	-0.752			DL	2.8003	179	.22	.51	.57
t-values	25.21	-7.08								
means		1.3923								
E. S. Central	3.945	-1.007	0.256		DL	2.817	43	.35	.47	.56
t-values	8.66	-4.23	1.42							
means		1.4706	1.3775							
W. S. Central	3.527	-0.645			DL	2.6529	94	.14	.52	.56
t-values	14.96	-3.81								
means		1.3541								
Mountain	-15.692	-5.445	1.676	20.218	L	24.8566	40	.28	14.47	16.42
t-values	-0.55	-2.56	1.60	1.89						
means		3.2561	4.8307	2.4820						
Pacific	2.489	-0.288	0.372		DL	2.7171	212	.10	.65	.68
t-values	12.05	-2.66	3.79							
means		1.1611	1.5104							

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 95. Demand functions by regions for port dessert wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Slope coefficients: PR DSHRY Cents/oz.	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	4.074	-1.144	0.174		DL	3.0007	57	.42	.57	.73
t-values	13.52	-5.95	1.07							
means		1.1013	1.0764							
Mid Atlantic	4.527	-1.441	0.343		DL	3.2841	125	.39	.54	.68
t-values	24.6	-8.78	3.76							
means		1.1469	1.1950							
E. N. Central	3.968	-0.964			DL	2.7771	73	.33	.45	.55
t-values	19.00	-5.90								
means		1.2355								
E. N. Central	39.714	-4.316	-1.145		L	20.124	30	.21	9.04	9.83
t-values	5.28	-2.23	-1.05							
means		3.7216	3.0808							
S. Atlantic	3.232	-0.993		0.832	DL	3.035	53	.32	.52	.63
t-values	4.95	-4.39		1.87						
means		1.2738		1.2833						
E. S. Central	1.978	-0.075	0.747		DL	2.9814	24	.55	.39	.55
t-values	3.01	-0.21	4.53							
means		1.4267	1.4860							
W. S. Central	3.830	-0.840	0.185		DL	2.9095	45	.35	.53	.65
t-values	11.19	-3.78	1.48							
means		1.2793	0.8331							
Mountain	44.066	-8.185	2.394		L	31.2625	40	.37	13.22	16.27
t-values	6.28	-4.03	2.84							
means		2.8997	4.5664							
Pacific	8.556	-1.594	1.638	2.416	L	18.2821	88	.13	9.59	10.12
t-values	1.31	-1.97	2.75	1.23						
means		3.1680	4.3136	3.1923						

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 96. Demand functions by regions for apple flavored wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	21.200	0.061	0.392	DL	2.6352	20	.25	.38	.42
t-values	7.50	0.31	2.37						
means		0.9929	1.1613						
Mid Atlantic	2.775	-0.495	0.383	DL	2.722	36	.25	.51	.57
t-values	7.47	-1.90	2.18						
means		0.9825	1.1317						
E. N. Central	2.536	-0.321	0.360	DL	2.6843	86	.19	.44	.49
t-values	12.45	-2.24	3.73						
means		1.0138	1.3142						
W. N. Central	2.120	0.059	0.524	DL	2.7336	29	.29	.42	.48
t-values	4.78	0.16	3.16						
means		0.963	1.0626						
S. Atlantic	3.172	-0.480		DL	2.6152	55	.11	.42	.44
t-values	14.39	-2.62							
means		1.1612							
E. S. Central	3.823	-0.833		DL	2.7944	17	.33	.45	.53
t-values	9.70	-2.72							
means		1.2358							
W. S. Central	2.194	0.158	0.237	DL	2.6367	30	.08	.47	.48
t-values	6.01	0.59	1.44						
means		1.0858	1.1418						
Mountain	2.892	-0.105		DL	2.7938	15	.01	.34	.33
t-values	7.36	-0.26							
means		0.9315							
Pacific	3.412	-0.376	-0.227	DL	2.7816	73	.13	.55	.58
t-values	16.01	-2.31	-1.57						
means		0.9516	1.2005						

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 97. Demand functions by regions for berry flavored wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	3.007	-0.497	0.216	DL	2.6831	25	.13	.39	.40
t-values	7.58	-1.62	1.15						
means		1.1936	1.2456						
Mid Atlantic	2.643	-0.326	0.366	DL	2.6826	69	.27	.42	.48
t-values	14.30	-2.71	4.18						
means		1.2214	1.1986						
E. N. Central	2.557	-0.238	0.303	DL	2.6326	143	.12	.46	.49
t-values	14.38	-1.91	4.15						
means		1.2467	1.2279						
W. N. Central	21.371	-2.658	1.751	L	18.1133	35	.14	10.48	11.00
t-values	3.86	-2.29	1.26						
means		3.7027	3.7599						
S. Atlantic	2.932	-0.591	0.266	DL	2.4597	50	.33	.35	.42
t-values	9.87	-3.47	2.54						
means		1.3743	1.2794						
E. S. Central	4.021	-1.110		DL	2.6546	11	.30	.58	.66
t-values	5.56	1.95							
means		1.2319							
W. S. Central	3.553	-0.764		DL	2.6827	37	.15	.52	.56
t-values	9.86	-2.49							
means		1.1401							
Mountain	3.742	-0.668		DL	2.8499	20	.17	.49	.53
t-values	7.89	-1.93							
means		1.3346							
Pacific	20.811	-2.523	1.479	L	18.2377	60	.08	15.81	16.17
t-values	2.49	-1.52	1.25						
means		3.4165	4.0916						

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 98. Demand functions by regions for citrus flavored wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	2.143	-0.584	1.079	DL	2.6173	12	.76	.36	.66
t-values	3.51	-1.71	4.54						
means		1.3912	1.1920						
Mid Atlantic	3.930	-1.120	0.559	DL	3.2876	88	.41	.60	.78
t-values		1.2819	1.4207						
means									
E. N. Central	3.057	-0.702	0.445	DL	2.7285	104	.24	.57	.64
t-values	10.86	-4.30	3.65						
means		1.3323	1.3647						
W. N. Central	3.954	-0.893		DL	2.7696	44	.31	.47	.56
t-values	14.12	-4.37							
means		1.3259							
S. Atlantic	3.598	-0.740	0.189	DL	2.7576	67	.17	.52	.56
t-values	9.64	-3.59	1.15						
means		1.5124	1.4803						
E. S. Central	Too few observations								
t-values									
means									
W. S. Central	3.006	-0.873	0.539	DL	2.7368	27	.68	.37	.63
t-values	8.95	-5.63	3.18						
means		1.1706	1.3959						
Mountain	4.155	-0.846		DL	3.3184	26	.41	.53	.68
t-values	18.18	-4.11							
means		0.9889							
Pacific	3.762	-0.961	0.133	DL	2.8780	109	.53	.47	.68
t-values	17.77	-10.59	1.13						
means		1.1179	1.4368						

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 99. Demand functions by regions for other flavored wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Functional form a/	$\overline{Q}$	n	R^2	S	S_y
N. England	3.899	-0.765		DL	3.0589	26	.46	.44	.58
t-values	19.06	-4.52							
means		1.0982							
Mid Atlantic	3.672	-0.641	0.120	DL	2.9969	65	.24	.44	.50
t-values	16.62	-4.06	1.70						
means		1.2602	1.1015						
E. N. Central	3.218	-0.682	0.221	DL	2.7417	114	.27	.43	.50
t-values	16.54	-5.99	2.38						
means		1.1811	1.4809						
W. N. Central	3.350	-0.820	0.265	DL	2.6877	47	.45	.46	.60
t-values	11.05	-5.79	1.49						
means		1.2377	1.3345						
S. Atlantic	3.418	-0.641	0.240	DL	2.8710	47	.19	.52	.56
t-values	10.16	-2.90	1.62						
means		1.3059	1.2064						
E. S. Central	2.987	-0.145		DL	2.8192	13	.004	.55	.52
t-values	3.52	-0.20							
means		1.1569							
W. S. Central	3.231	-0.302		DL	2.9315	37	.06	.48	.49
t-values	14.73	-1.46							
means		0.9917							
Mountain	4.652	-0.956	-0.374	DL	3.4685	26	.39	.63	.77
t-values	14.10	-3.10	-1.77						
means		0.875	0.9298						
Pacific	3.152	-0.249		DL	2.8870	77	.08	.48	.50
t-values	26.54	-2.52							
means		1.0635							

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 100. Demand functions by regions for sparkling champagne wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Slope coefficients: Per capita income $1,000	Functional form a/	$\overline{Q}$	n	R^2	S	S_y
N. England	3.264	-0.315		DL	2.7059	19	.10	.44	.45
t-values	7.81	-1.38							
means		1.7722							
Mid Atlantic	2.977	-0.514	0.597	DL	2.8541	92	.13	.83	.87
t-values	6.80	-2.67	2.85						
means		1.8943	1.4250						
E. N. Central	2.826	-0.405	0.527	DL	2.9257	78	.14	.69	.74
t-values	6.11	-1.90	3.00						
means		1.7584	1.5429						
W. N. Central	2.378	-0.220	0.521	DL	2.4961	13	.20	.50	.51
t-values	2.30	-0.37	1.54						
means		1.8897	1.0258						
S. Atlantic	10.334	-0.649	2.123	L	15.7332	56	.19	8.38	9.13
t-values	2.61	-1.63	3.27						
means		6.7339	4.6036						
E. S. Central	Too few observations								
t-values									
means									
W. S. Central	2.952	0.122		DL	3.1624	27	.002	.95	.93
t-values	3.28	0.23							
means		1.7195							
Mountain	Too few observations								
t-values									
means									
Pacific	2.897	-0.532	0.613	DL	2.9605	82	.22	.63	.70
t-values	8.01	-3.74	3.26						
means		1.6738	1.5564						

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 101. Demand functions by regions for sparkling burgundy wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Per capita income $1,000	PR DSPCH Cents/oz.	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	3.729	-0.501	-0.673	0.399	DL	2.6062	9	.73	.29	.45
t-values	5.03	-2.09	-1.83	2.10						
means		1.9867	1.1701	1.6500						
Mid Atlantic	2.857	-0.361	0.393		DL	2.7456	15	.12	.52	.52
t-values	3.09	-0.77	1.15							
means		1.8532	1.4197							
E. N. Central	2.714	0.136			DL	2.9309	20	.01	.58	.57
t-values	5.33	0.44								
means		1.5973								
W. N. Central	17.521	-1.0918			L	12.0381	7	.35	2.36	2.66
t-values	5.02	-1.63								
means		5.0223								
S. Atlantic	4.656	-1.087			DL	3.1848	11	.56	.52	.74
t-values	10.03	-3.37								
means		1.3544								
E. S. Central	Too few observations									
t-values										
means										
W. S. Central	2.920	-0.008			DL	2.9044	7	.0001	.91	.83
t-values	2.88	-0.02								
means		1.8262								
Mountain	Too few observations									
t-values										
means										
Pacific	Too few observations									
t-values										
means										

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

Appendix table 102. Demand functions by regions for sparkling cold duck wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Per capita income $1,000	PR DSPCH Cents/oz.	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	1.986	-0.484	0.475	0.600	DL	2.7897	20	.32	.57	.64
t-values	2.50	-1.24	1.92	2.28						
means		1.6775	1.0358	1.8713						
Mid Atlantic	3.561	-0.814	0.379		DL	2.7495	63	.22	.59	.66
t-values	8.11	-3.49	2.36							
means		1.6441	1.3890							
E. N. Central	3.673	-0.548			DL	2.7643	66	.15	.52	.56
t-values	13.45	-3.42								
means		1.6597								
W. N. Central	2.449	-0.363	0.617		DL	2.6484	27	.25	.59	.65
t-values	2.43	-0.84	1.95							
means		1.6930	1.3202							
S. Atlantic	3.258	-0.438	0.200		DL	2.8082	41	.09	.46	.47
t-values	7.23	-1.76	1.20							
means		1.7274	1.5374							
E. S. Central	3.924	-0.784			DL	2.4035	12	.14	.55	.56
t-values	3.21	-1.26								
means		1.9401								
W. S. Central	3.040	-0.579	0.401		DL	2.5998	28	.17	.56	.59
t-values	4.23	-1.56	1.66							
means		1.6888	1.3416							
Mountain	4.827	-1.157			DL	3.0168	14	.18	.54	.57
t-values	4.27	-1.61								
means		1.5647								
Pacific	2.314	0.298			DL	2.8032	38	.02	.55	.55
t-values	3.67	0.78								
means		1.6429								

a/ L denotes linear functional form, while DL denotes double logarithmic form.

Appendix table 103. Demand functions by regions for vermouth wines

Region	Intercept	Slope coefficients: Price Cents/oz.	Per capita income $1,000	PR IVER Cents/oz.	Functional form a/	$\bar{Q}$	n	R^2	S	S_y
N. England	4.034	-1.042	0.125		DL	3.1126	15	.89	.23	.66
t-values	17.49	-9.13	1.06							
means		1.0421	1.3124							
Mid Atlantic	4.315	-1.080			DL	3.0521	61	.30	.59	.69
t-values	16.52	-5.04								
means		1.1690								
E. N. Central	1.969	-0.306	0.171	0.422	DL	2.6027	51	.11	.33	.33
t-values	3.07	-1.53	1.70	1.33						
means		1.4018	1.5127	1.9050						
W. N. Central	Too few observations									
t-values										
means										
S. Atlantic	3.525	-1.042	-0.163	0.428	DL	2.7437	30	.54	.27	.38
t-values	6.33	-4.27	-1.96	1.96						
means		1.3458	1.3532	1.9687						
E. S. Central	20.298	-1.481			L	14.0800	10	.04	4.20	4.05
t-values	1.93	-0.60								
means		4.1985								
W. S. Central	Too few observations									
t-values										
means										
Mountain	24.278	-3.925			L	14.0800	10	.05	4.17	4.05
t-values	1.61	-0.68								
means		2.5980								
Pacific	17.449	-1.530			L	12.3914	47	.09	4.07	4.22
t-values	7.18	-2.14								
means		3.3058								

a/ L denotes linear functional form, while DL denotes double logarithmic functional form.

* U.S. GOVERNMENT PRINTING OFFICE. : 1978 0-280-931/ESCS-2