

**West Virginia Public Finance Program
Bureau of Business and Economic Research
West Virginia University**

Fiscal Note 2003.2

Economics of Underage Drinking in West Virginia FY2003

A recent study published in the Journal of American Medical Association (JAMA) concluded that 50% of the persons aged 12 to 20 years consumed alcohol. Expenditure on alcohol by underage drinkers (\$22.5 billion) was also estimated to be about 19.4% of the total consumer expenditure on alcohol (\$116.2 billion).¹ We used these estimated results to predict the dollar value of underage drinking in West Virginia and its counties. In order to do this calculation, we also assumed that 19.4% market share for underage drinkers applies to total dollar sales of beer, wine and liquor in the market. Finally, we assumed that these shares remain the same for all West Virginia counties.

Total Alcohol Sales

To get an estimate of total dollar sales of alcohol to underage, we compiled data from wine and liquor sales and beer sales. Beer sales data was only available in units (barrels) sold.² To convert the beer sales data to dollars, we used the consumer price index - average price data for malt beverages (all types, all sizes, any origin) per 16 oz for the FY (fiscal year) 2002. This data came from the U.S. Bureau of Labor Statistics. Table 1 shows different components of the estimated dollar sales of beer, wine and liquor. Estimated beer sales make the 78% of total beer, wine and liquor sales in FY 2002. Using the JAMA study numbers and Census 2000 data on the West Virginia demographic profile, about 14% of all alcohol consumers are estimated as underage drinkers in West Virginia. In FY 2002, these underage drinkers consumed more than \$83 million worth of beer, wine and liquor. We also calculated the per capita sales in order to compare underage drinking with the alcohol consumption by the legal age group. The estimated per capita sales to underage drinkers (\$740) is found to be substantially greater than the estimated per capita sales to the legal age group (\$484).

Wine and Liquor Sales in West Virginia Counties

Table 2 presents our calculations for West Virginia as a whole and for each individual county using wine and liquor sales data for fiscal year 2002.³ The estimates for West Virginia show that per capita dollar sales to underage drinkers (\$165) is greater than the per capita sales to legal age drinkers (\$108). Monongalia County has the third largest total dollar sales of wine and liquor. While it has the second largest number of underage drinkers, it has the highest share of underage drinkers in total population. It also ranks third in total estimated

¹ See "Alcohol Consumption and Expenditures for Underage Drinking and Adult Excessive Drinking," by S.E. Foster, R.D. Vaughan, W.H. Foster and J.A. Califano, *Journal of American Medical Association*, February 26, 2003 – Vol. 289, No.8.

² This was derived from the beer barrel tax collections data provided by the West Virginia State Tax Department.

³ The data on beer sales in West Virginia counties was not available at the time of our analysis.

dollar sales to underage drinkers. However, Monongalia County ranks tenth among all counties in estimated per capita sales to underage drinkers.

We should also caution that some of the high estimates of per capita dollar sales to underage drinkers in Table 2 could be due to other factors than underage drinking alone. For example, there are major tourism attractions in Greenbrier and Pocahontas counties. Similarly, Hancock, Jefferson, Ohio and Kanawha counties have racetrack facilities that attract a considerable number of tourists. It should not be surprising to see relatively higher total consumption of wine and liquor in these counties. Given our assumption that 19.4% underage market share remains constant for all counties, we naturally see substantially higher per capita sales to the underage group. In addition, the border counties are expected to have larger wine and liquor sales compared to the interior counties. Cross-border sales to non-residents are not captured in our estimates. Nevertheless, counties like Monongalia, Cabell and Wood have fairly large college populations, which are indicated by high shares of persons, aged 12 to 20 years. These counties also have large total dollar sales of wine and liquor and they are estimated to have large wine and liquor sales to underage drinkers. Furthermore, Table 1 shows that total per capita beer, wine and liquor sales to underage drinkers is significantly greater than per capita wine and liquor sales. We would expect greater proportion of beer consumption for the underage group compared to the legal age group. While county level beer sales data is not available, counties with large college populations are likely to have greater per capita alcohol sales to underage drinkers than the estimated average of \$740.

Table 1: Beer, Wine and Liquor Sales in West Virginia (Fiscal Year 2002)

Total Estimated Beer Sales in FY 2002	\$326,154,507
Total Wine and Liquor Sales in FY 2002	\$93,965,266
Total Estimated Beer, Wine and Liquor Sales in FY 2002	\$420,119,773
Share of Persons Aged 12 to 20	12.16%
Estimated Number of Underage Drinkers (Ages 12 to 20)	109,947
Estimated Number of Legal Age Drinkers (Ages 21 and over)	700,593
Total Estimated Sales to Underage Drinkers	\$81,348,493
Total Estimated Sales to Legal Age Drinkers	\$338,771,280
Estimated Per Capita Sales to Underage Drinkers	\$740
Estimated Per Capita Sales to Legal Age Drinkers	\$484

Source: Census 2000 is used for the demographic profile of West Virginia. Data on beer, wine and liquor sales in West Virginia is provided by the West Virginia State Tax Department.

Table 2: Wine and Liquor Sales in West Virginia and its Counties (Fiscal Year 2002)

County	Total Dollar Sales of Wine and Liquor	Share of 12 to 20	Estimated Number of Underage Drinkers (Ages 12 to 20)	Estimated Number of Legal Age Drinkers (Ages 21 and over)	Total Estimated Dollar Sales to Underage to Legal Age Drinkers	Total Estimated Dollar Sales to Legal Age Drinkers	Estimated Per Capita Dollar Sales to Underage Drinkers	Estimated Per Capita Dollar Sales to Legal Age Drinkers
Barbour	253,949	12.88%	1,002	5,940	49,173	204,777	49	34
Berkeley	4,662,287	12.25%	4,650	28,327	902,766	3,759,521	194	133
Boone	482,126	11.53%	1,472	9,856	93,355	388,771	63	39
Braxton	451,171	11.56%	850	5,754	87,361	363,810	103	63
Brooke	1,562,801	12.17%	1,548	10,080	302,608	1,260,193	195	125
Cabell	7,501,770	13.28%	6,428	37,681	1,452,580	6,049,190	226	161
Calhoun	0	13.26%	503	2,958	0	0	0	0
Clay	136,653	12.80%	661	3,836	26,460	110,192	40	29
Doddridge	488	14.02%	519	2,755	95	394	0	0
Fayette	1,238,236	11.66%	2,775	18,589	239,762	998,474	86	54
Gilmer	224,256	16.70%	598	2,695	43,423	180,833	73	67
Grant	216,860	10.20%	576	4,426	41,991	174,869	73	40
Greenbrier	4,060,886	11.68%	2,013	13,609	786,316	3,274,570	391	241
Hampshire	507,051	11.42%	1,154	7,631	98,181	408,869	85	54
Hancock	3,050,363	10.21%	1,668	13,121	590,647	2,459,716	354	187
Hardy	595,070	10.59%	671	4,905	115,224	479,845	172	98
Harrison	3,322,625	12.38%	4,249	26,456	643,365	2,679,260	151	101
Jackson	650,617	11.96%	1,674	10,695	125,980	524,637	75	49
Jefferson	3,105,320	12.83%	2,706	15,861	601,288	2,504,032	222	158
Kanawha	20,182,935	10.86%	10,861	79,296	3,908,055	16,274,879	360	205
Lewis	429,041	11.30%	956	6,658	83,076	345,965	87	52
Lincoln	14,332	12.78%	1,413	8,431	2,775	11,557	2	1
Logan	1,130,547	11.49%	2,166	14,709	218,910	911,638	101	62
McDowell	535,786	12.65%	1,729	10,562	103,745	432,041	60	41
Marion	1,971,966	12.21%	3,454	22,267	381,835	1,590,131	111	71
Marshall	1,508,102	11.18%	1,986	13,850	292,016	1,216,086	147	88
Mason	753,033	11.58%	1,504	10,047	145,811	607,222	97	60
Mercer	3,515,568	11.70%	3,686	24,786	680,725	2,834,843	185	114
Mineral	411,047	12.90%	1,746	10,294	79,592	331,455	46	32
Mingo	579,758	13.04%	1,843	10,681	112,259	467,498	61	44
Monongalia	7,170,960	17.18%	7,031	30,474	1,388,525	5,782,435	198	190
Monroe	380,589	11.10%	809	5,887	73,694	306,895	91	52
Morgan	515,416	9.73%	727	5,897	99,801	415,615	137	70
Nicholas	834,160	13.00%	1,727	10,233	161,520	672,640	94	66
Ohio	4,466,425	12.69%	3,010	18,371	864,841	3,601,584	287	196
Pendleton	186,260	10.33%	424	3,241	36,066	150,194	85	46
Pleasants	125,371	11.62%	437	2,886	24,276	101,095	56	35

Pocahontas	608,232	10.24%	468	3,687	117,773	490,459	252	133
Preston	426,997	12.45%	1,826	11,250	82,680	344,317	45	31
Putnam	1,656,267	11.87%	3,062	19,492	320,706	1,335,561	105	69
Raleigh	3,744,191	11.35%	4,498	31,250	724,994	3,019,197	161	97
Randolph	1,207,549	11.50%	1,625	11,024	233,820	973,729	144	88
Ritchie	170,646	11.83%	612	4,006	33,042	137,603	54	34
Roane	337,741	12.92%	998	5,930	65,397	272,344	66	46
Summers	325,621	11.22%	729	5,219	63,050	262,570	86	50
Taylor	283,666	10.94%	880	6,243	54,927	228,739	62	37
Tucker	485,946	10.48%	384	2,917	94,095	391,852	245	134
Tyler	156,032	12.02%	577	3,732	30,213	125,820	52	34
Upshur	698,564	15.16%	1,774	8,724	135,264	563,300	76	65
Wayne	178,721	12.35%	2,650	16,460	34,606	144,115	13	9
Webster	144,891	12.07%	587	3,766	28,055	116,835	48	31
Wetzel	712,165	11.58%	1,025	6,822	137,898	574,267	135	84
Wirt	6,158	14.37%	422	2,202	1,192	4,965	3	2
Wood	5,720,824	11.61%	5,106	34,094	1,107,733	4,613,092	217	135
Wyoming	331,805	11.74%	1,509	10,034	64,248	267,557	43	27
West Virginia Total	93,965,266	12.16%	109,947	700,593	18,194,651	75,770,615	165	108

Source: Census 2000 is used for demographic profiles of West Virginia counties. Data on wine and liquor sales in West Virginia and its counties is provided by the West Virginia State Tax Department.

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