

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

Tax Estimate 2002.2

**Impacts of Various Cigarette Excise Tax Increase Scenarios
FY 2003**

Recently, 18 states have implemented substantial cigarette tax hikes in response to rising expectations of budget shortfalls in the next few years. Among these, West Virginia's three neighbor states, Maryland, Ohio and Pennsylvania increased rates in 2002. After these rate changes, Pennsylvania and Maryland's rate of \$1.00/pack and Ohio's rate of \$0.55/pack became significantly greater than West Virginia's current \$0.17/pack rate on cigarettes. The rate increases in these northern neighbors underline the possibility of an increase in the cigarette tax rate in West Virginia as well. The sizeable gap between West Virginia's rate and the rates in northern neighbors might enable West Virginia to increase its own rate without sacrificing much of the cross border sales of, and thus the exportation of the tax on, cigarettes to these states. However, the total tax revenue impact of a rate increase in West Virginia will depend on the decrease in cigarette consumption. The repercussions of such a decrease on both cigarette tax collections and other state and local tax collections need to be estimated to see that net effect.

The Bureau of Business and Economic Research estimated this total tax impact using IMPLAN and other tax impact methodologies including BBER's personal income tax calculator (PITCALC), which was developed by the West Virginia Public Finance Program staff. PITCALC calculates personal income tax liabilities of West Virginia residents by utilizing state income tax return data and the personal income tax rate schedule. Our estimates are based on various cigarette tax increase scenarios.

List of state and local taxes that will be impacted:

Personal income tax
Consumer sales tax (excluding direct impact on sales tax collected from cigarettes)
Business franchise tax
Corporate net income tax
Cigarette excise tax
Sales tax from cigarettes

Impact Assumptions

1. Personal income tax impact is estimated by using the employee compensation impact from IMPLAN in the Bureau of Business and Economic Research's personal income tax calculator (PITCALC). PITCALC calculates personal income tax liabilities of West Virginia residents by utilizing state income tax return data and the state personal income tax rate schedule.
2. Consumer sales tax impact is based on the information gathered from the historical relationship between West Virginia personal income and taxable gross sales.
3. Corporate net income, business franchise, and local business and occupation tax impacts are estimated by making use of state value added impacts from IMPLAN.
4. Cigarette excise tax impacts are calculated using price elasticities of demand for cigarettes. These elasticities and tax rate scenarios were provided by the West Virginia State Tax Department. The net tax impacts are found by subtracting the 4% discount given to cigarette vendors from the gross cigarette excise tax impact.
5. The impacts on the sales tax collected from cigarettes are calculated separately from the previously mentioned consumer sales tax impact. These impacts are due to change in the total dollar sales of cigarettes.

Impacts of Various Cigarette Excise Tax Increase Scenarios

Impact on Tax Revenues	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Price Elasticity of Demand	-0.4	-0.4	-0.4	-0.4	-0.9	-0.9
Rate Increase (\$ / pack)	0.17	0.38	0.5	1.0	0.17	0.38
New Tax Rate (\$ / pack)	0.34	0.55	0.67	1.17	0.34	0.55
Change in Total Sales of Cigarettes (2002\$)	19,583,000	42,507,000	55,021,000	103,055,000	3,168,000	6,649,000
Change in State Taxes (2002\$)						
Personal Income Tax	965,000	2,092,000	2,709,000	5,053,000	1,140,000	2,392,000
Consumer Sales Tax	393,000	852,000	1,103,000	2,067,000	464,000	975,000
Business Franchise Tax	-1,500	-3,000	-4,000	-8,000	18,000	39,000
Corporate Net Income Tax	-900	-2,000	-3,000	-5,000	28,000	58,000
Cigarette Tax	30,558,000	66,330,000	85,856,000	160,810,000	28,724,000	60,281,000
Sales Tax From Cigarettes	1,175,000	2,550,000	3,301,000	6,183,000	190,000	399,000
Total State Tax Impact	33,088,600	71,819,000	92,962,000	174,100,000	30,564,000	64,144,000

Impact on Tax Revenues	Scenario 7	Scenario 8	Scenario 9	Scenario 10	Scenario 11	Scenario 12
Price Elasticity of Demand	-0.9	-0.9	-1.4	-1.4	-1.4	-1.4
Rate Increase (\$ / pack)	0.5	1.0	0.17	0.38	0.5	1.0
New Tax Rate (\$ / pack)	0.67	1.17	0.34	0.55	0.67	1.17
Change in Total Sales of Cigarettes (2002\$)	8,454,000	14,823,000	-12,313,000	-25,057,000	-31,364,000	-52,148,000
Change in State Taxes (2000\$)						
Personal Income Tax	3,039,000	5,313,000	1,303,000	2,661,000	3,322,000	5,510,000
Consumer Sales Tax	1,239,000	2,173,000	532,000	1,083,000	1,355,000	2,253,000
Business Franchise Tax	49,000	86,000	37,000	76,000	95,000	158,000
Corporate Net Income Tax	74,000	129,000	55,000	111,000	139,000	231,000
Cigarette Tax	76,640,000	134,383,000	26,993,000	54,933,000	68,760,000	114,324,000
Sales Tax From Cigarettes	507,000	889,000	-739,000	-1,503,000	-1,882,000	-3,129,000
Total State Tax Impact	81,548,000	142,973,000	28,181,000	57,361,000	71,789,000	119,347,000

Note: The greater the price elasticity of demand for cigarettes is, the greater will be the decrease in the packs of cigarettes consumed. In the case of high demand elasticities in the last four scenarios (elastic demand scenarios), dollar sales of cigarettes also fall due to large enough negative impact on the number of packs of cigarettes consumed. This is the main factor behind the smaller total state tax impacts associated with higher demand elasticities.

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Appendix: Recent Cigarette Excise Tax Rate Increases and Cigarette Tax Collections in West Virginia

Table 1 shows the rate increases and new tax rates for all 18 states. Table 2 presents historical data on cigarette excise tax rates and net tax collections for West Virginia. Figure 1 shows changes in per capita cigarette tax collections between 1950 and 2001. The last rate increase was in FY1978 when the rate went up from \$0.12/pack to \$0.17/pack. The historical changes show that cigarette tax collections increased quite significantly immediately after the tax rate increases. All the rate increases were followed by an increasing trend in per capita tax collections except for the last tax increase in 1978. Cigarette tax collections exhibited a decreasing trend between 1979 and 2001. This may reflect a general decrease in cigarette consumption, in total and in per capita terms, due to extensive anti-smoking campaigns in the past two decades. Thus, if this decreasing trend in cigarette consumption continues, we should not expect a rise in cigarette tax revenues in the future. Nonetheless, we might see an immediate boost in tax revenues right after the rate increase.

Table 1: Cigarette Excise Tax Rate Increases in 2002

	Increase Per Pack	New Rate/Pack of 20	Effective Date
Connecticut	\$0.61	\$1.11	4/3/2002
Hawaii	\$0.20	\$1.20	10/1/2002
Illinois	\$0.40	\$0.98	7/1/2002
Indiana	\$0.40	\$0.555	7/1/2002
Kansas	\$0.46	\$0.70	7/1/2002
Louisiana	\$0.12	\$0.36	8/1/2002
Maryland	\$0.34	\$1.00	7/1/2002
Massachusetts	\$0.75	\$1.51	7/25/2002
Michigan	\$0.50	\$1.25	8/1/2002
Nebraska	\$0.30	\$0.64	10/1/2002
New Jersey	\$0.70	\$1.50	7/1/2002
New York City	\$1.42	\$1.50	7/2/2002
New York State	\$0.39	\$1.50	4/3/2002
Ohio	\$0.31	\$0.55	7/1/2002
Pennsylvania	\$0.69	\$1.00	7/15/2002
Rhode Island	\$0.32	\$1.32	5/1/2002
Tennessee	\$0.07	\$0.20	7/15/2002
Utah	\$0.18	\$0.695	5/6/2002
Vermont	\$0.49	\$0.93	7/1/2002
U.S. Median*		\$0.48	10/1/2002

*Includes increase effective in 2002.

Source: Federation of Tax Administrators.

Table 2: West Virginia Cigarette Excise Tax Rates and Net Tax Collections (1970-2002)

Fiscal Year	Rate (\$ / pack)	Net Tax Collections (\$)
1969-70	0.07	13,974,891
1970-71	0.12	22,518,884
1971-72	0.12	23,647,060
1972-73	0.12	23,849,548
1973-74	0.12	24,714,518
1974-75	0.12	25,252,182
1975-76	0.12	26,975,577
1976-77	0.12	28,028,974
1977-78	0.12	28,979,260
1978-79	0.17	37,101,381
1979-80	0.17	37,241,418
1980-81	0.17	38,131,328
1981-82	0.17	37,877,992
1982-83	0.17	36,486,376
1983-84	0.17	35,645,407
1984-85	0.17	34,834,130
1985-86	0.17	35,046,416
1986-87	0.17	34,198,588
1987-88	0.17	34,127,909
1988-89	0.17	32,278,717
1989-90	0.17	32,218,638
1990-91	0.17	31,839,833
1991-92	0.17	32,282,841
1992-93	0.17	32,798,123
1993-94	0.17	33,595,995
1994-95	0.17	34,008,497
1995-96	0.17	33,651,705
1996-97	0.17	33,988,488
1997-98	0.17	33,476,518
1998-99	0.17	33,077,660
1999-00	0.17	32,344,669
2000-01	0.17	31,838,476
2001-02	0.17	32,219,157

Source: West Virginia State Tax Department.

Figure 1: West Virginia Net Cigarette Tax Collections Per Capita (1950-2002)

