Neutrality

Dollar value of loss in households' economic welfare attributable to deterioration in neutrality: $16 million.

Comments. As the sales tax is broadened to include some services, it's revenue productivity is further enhanced, as Americans have been spending an increasing percentage of their budgets on services, as opposed to goods. However, this shift is slowing, as the nation's fascination with computers and consumer electronics continues. Volatility and progressivity are similar to those of sales tax with a base of intermediate breadth. Addition of selected services makes the sales tax more procyclical. Households hire contractors to fix their homes when times are good and postpone repairs and maintenance when the economy is weak and income growth is sluggish.

State Property Tax

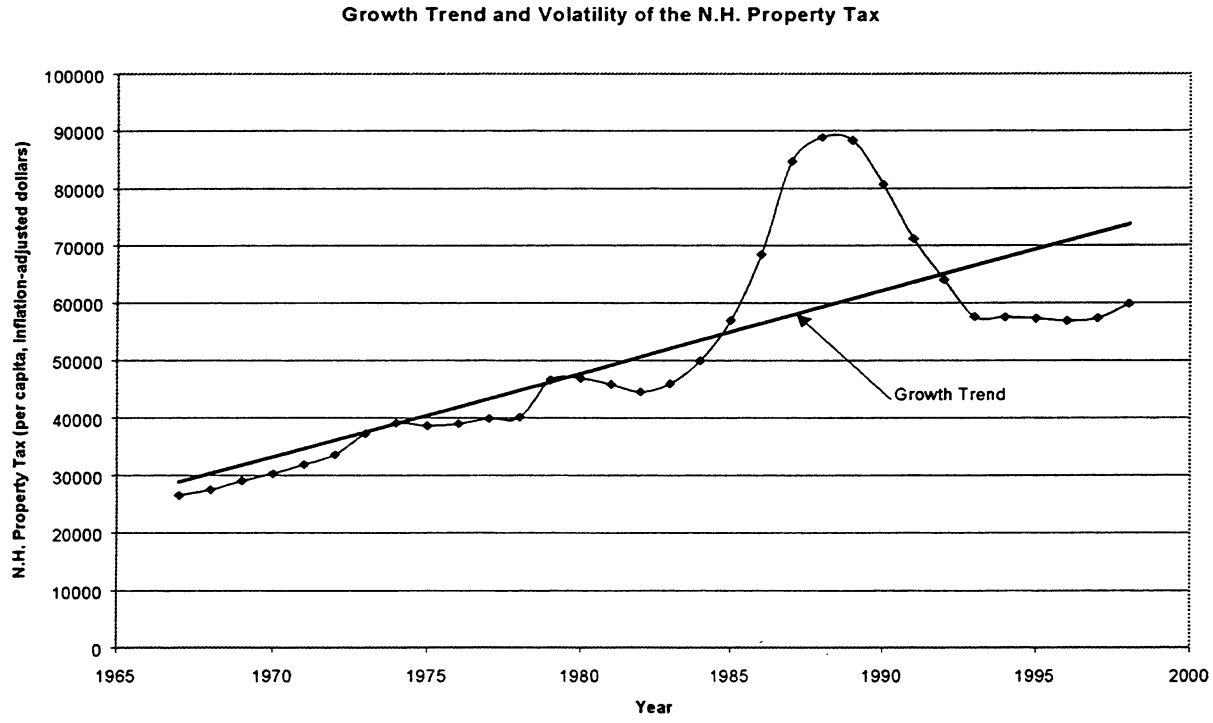
Definition of Base

The same base as the current state property tax.

Projected Revenue Productivity

	Revenues per percentage-point increase in statutory tax rate ($millions)	Annual rate of growth in tax base
2000	825	10.1
2001	854	3.5
2002	913	6.9
2003	974	6.7

Stability and Adequacy



Growth and Volatility of the Tax Base
Historical Trends

Historical annual trend growth rate of tax base (per capita, adjusted for inflation): 2.29
(Note: comparable growth rate for New Hampshire personal income[1] : 2.12)
Index of volatility (volatility of personal income = 100): 377
Index of procyclicality (procyclicality of New Hampshire personal income = 100): 58

Fairness

Ratio of high income-to-low income tax burden if tax were implemented: 1.94
(Note: comparable ratio for 1997 tax structure was 1.94)

Competitiveness

See Chapter IVB.

Exportability

Percent of tax burden borne by nonresidents:
26 – 28 percent in short-run; 19 – 23 percent in long-run
Percent of burden of 1997 tax structure borne by non-residents: 25 – 27 percent in short-run, 19 –22 percent in long-run.

[1] This is the only revenue option whose volatility and procyclicality were indexed to New Hampshire personal income rather than U.S. personal income, since it's base is New Hampshire taxable property. As noted in the "Guide to Worksheets", other tax bases were evaluated with national data because of the difficulty of getting comparable state-by-state data for all bases. The opposite is true with respect to taxable property; national data are non-existent. Hence, New Hampshire trends in taxable property were compared to trends in New Hampshire personal income.

Comments. With the broadest base of all the taxes evaluated by the Commission, a one percent statutory rate ($10 per $1,000 valuation) would raise more than $825 million. Since, like all revenue options, a state property tax would replace local property taxes, the Commission assumed that the progressivity of the state's tax structure would not change.[2]

In some respects, traditional indicators of adequacy and volatility do not apply to the property tax. It is the one tax whose base is measured by governments in advance through the appraisal process. Given the base, policymakers then set the rate to achieve a given revenue goal. Nevertheless, since raising tax rates is difficult politically, the relative volatility of taxable property is a potential concern. The tax's high volatility index largely reflects the speculative bubble that roiled real estate markets throughout the northeast during the late 1980s and early 1990s. Such volatility is unlikely to be repeated in the foreseeable future.

Contrary to widespread belief, the property tax is not necessarily regressive. Indeed, the Commission's analysis indicates that over most of the income scale the tax is progressive and more progressive than a comprehensive income tax based on federal adjusted gross income.[3] The tax is progressive in large part because most households in lower income classes are renters. Renters' effective property tax burdens (a portion of their landlords' taxes passed on to them in the form of higher rent) are generally lower than the property tax burdens of homeowners earning similar incomes.[4]

Approximately 74 percent of the property tax consists of residential property. About 12 percent of the tax burden on homes is shifted to nonresidents through the federal loss offset. Another 5.5 percent is borne by nonresident owners of vacation homes. percent of the property tax burden initially borne by residents is exported to nonresidents through the federal loss offset. Industrial and commercial property account for 10 percent and 8 percent of the tax base, respectively. Since manufacturers compete in national markets, they are able to shift almost half of their property tax burden to owners of capital nationwide. Although owners of commercial property have less of an ability to export their burden, they still shift a significant percentage of it to nonresident consumers who flock to New Hampshire to purchase tax-free retail goods and services.

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[2] Some would argue that under the local property tax system high-income households enjoy lower tax burdens than they would under a state property tax of equal revenue yield. They would contend that high-income tend to for exclusive communities, in which their superior wealth enables them to fund a given level of services with a lower tax burden than other communities. However, a town's per capita income is only weakly correlated with its per capita taxable property in New Hampshire. It is not at all clear that the distribution of a state property tax burden has a different pattern across income classes than the distribution of local property tax burdens as a whole.

[3] At the very high end of the income scale, the tax is probably regressive. The value of a house owned by household that earns $1,000,000 is generally not worth twice as much as the value of a house owned by family that earns $500,000. The Commission's data sources provide no detail on incomes above $70,000.

[4] According to the Commission's analysis, the property tax raises rents by about 2 percent on average. Consider a family earning $20,000 per year and paying $8000 a year in rent (not including property taxes shifted by its landlord). The family bears an effective property tax burden of .02 x $8000, or $160. Now suppose the family owns a house worth $80,000. The average property tax rate in New Hampshire in 1999 was about 2.5 percent. 2.5 percent of $80,000 is $2,000, a much higher property tax burden than that effectively borne by the renter.

ADDITIVE VALUE ADDED TAX—CONSUMPTION BASE

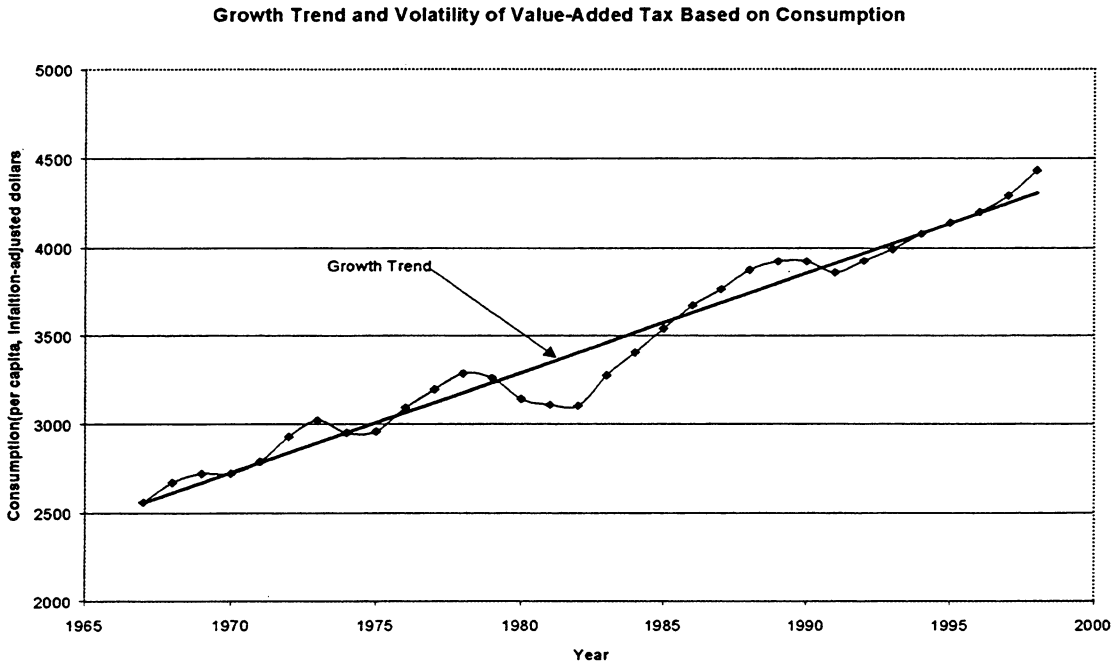
Definition of Base

This tax would be paid by businesses. It would be similar to the Business Enterprise Tax (BET), except that, in addition to paying tax on dividends, interest, and compensation, firms would also be taxed on rental payments and on retained earnings. Businesses would also have to add depreciation allowance to their tax base, but would be able to deduct gross investment. The current business profits tax (BPT) and BET would be repealed.

Projected Revenue Productivity

	Revenues per percentage-point increase in statutory tax rate ($millions)	Annual rate of growth in tax base
2000	298	7.9
2001	317	6.2
2002	337	6.2
2003	360	6.8

Stability and Adequacy



Growth and Volatility of the Tax Base
Historical Trends

Historical annual trend growth rate of tax base (per capita, adjusted for inflation): 1.65
(Note: comparable growth rate for U.S personal income: 1.52)
Index of volatility (volatility of personal income = 100): 115
Index of procyclicality (procyclicality of personal income = 100): 111

Fairness

Ratio of high income-to-low income tax burden if tax were implemented: 1.35
(Note: comparable ratio for 1997 tax structure was 1.94)

Competitiveness

See Chapter IVB.

Exportability

Percent of tax burden borne by nonresidents: short-run – 24 percent; long-run – 17 percent.
(Percent of total state and local tax burden borne by nonresidents in 1997: short-run – 22 percent; long-run – 19 percent.)

Comments. No state currently levies a tax resembling this VAT, although Michigan's Business Activities Tax has some elements of it. Compared to an income-style VAT it is more regressive, has exhibited higher historical revenue productivity, is more volatile, and is more procyclical. Although a tax rate of 2.8 percent would be sufficient to raise $825 million in the year 2000, it would have to be 3.9 percent to raise that amount and to offset the loss in revenues from repeal of the BET and BPT as well.

In effect, the tax allows business to deduct net investment. This feature, in combination with the repeal of the BET and BPT, would be attractive to businesses in general and to capital-intensive industries in particular. However, like the income variant of a VAT, firms would have to pay it whether or not they were profitable, creating liquidity problems.

ADDITIVE VALUE ADDED TAX—INCOME BASE

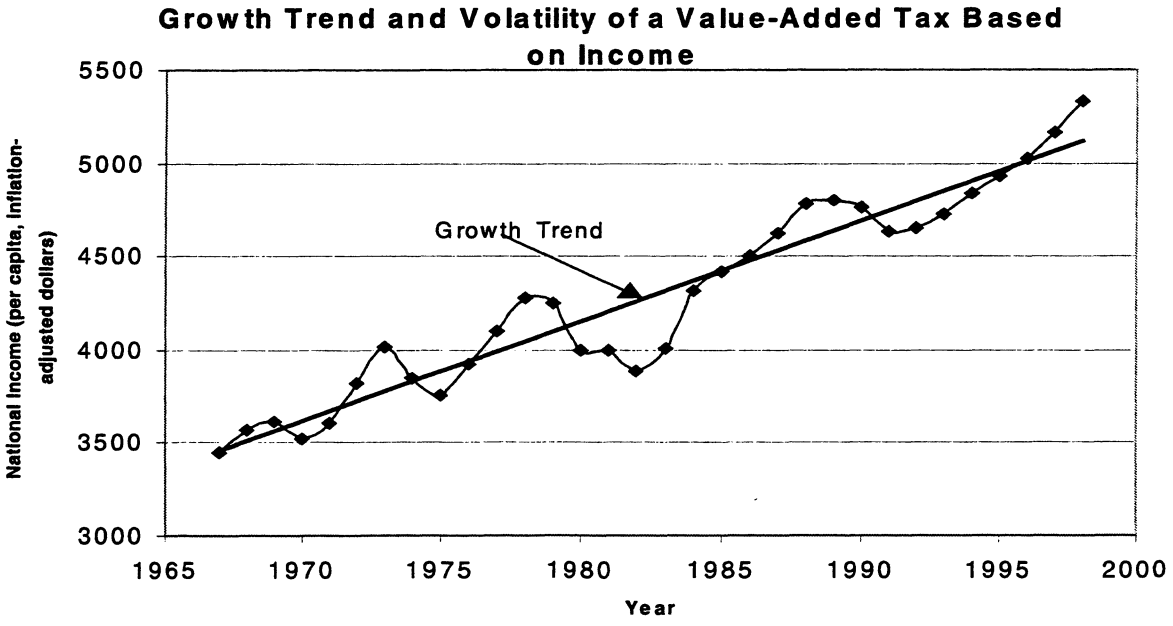
Definition of Base

This tax would be paid by businesses. It would be similar to the Business Enterprise Tax (BET) except that, in addition to paying tax on dividends, interest, and compensation, firms would also be taxed on rental payments and retained earnings. The current business profits tax (BPT) and BET would be repealed.

Projected Revenue Productivity

	Revenues per percentage-point increase in statutory tax rate ($millions)	Annual rate of growth in tax base
2000	355	7.4
2001	376	6.0
2002	397	5.7
2003	422	6.3

Stability and Adequacy



Growth and Volatility of the Tax Base
Historical Trends

Historical annual trend growth rate of tax base (per capita, adjusted for inflation): 1.25
(Note: comparable growth rate for U.S personal income: 1.52)
Index of volatility (volatility of personal income = 100): 136
Index of procyclicality (procyclicality of personal income = 100): 84

Fairness

Ratio of high income-to-low income tax burden if tax were implemented: 2.30
(Note: comparable ratio for 1997 tax structure was 1.94)

Competitiveness

See Chapter IV.

Exportability

Percent of tax burden borne by nonresidents: short-run – 26 percent; long-run – 18 percent.
(Percent of state and local tax burden borne by nonresidents in 1997: short-run – 22 percent; long-run – 19 percent.)

Comments. The only state currently levying this type of tax is Michigan. It is called an "income type" VAT because it consists of the components of net national income, as defined in the National Income and Product Accounts (compensation + interest + rent dividends + retained earnings). Michigan adopted it because of its stability and its relatively low sensitivity to the business cycle (the procyclicality of the state's automobile industry made revenues too volatile). It is more progressive than a comprehensive tax on AGI because it includes corporate retained earnings. The portion of the tax falling on retained earnings is assumed to be passed on to owners of capital, who are concentrated in high-income brackets.

The base of an income VAT (proxied by net national income) has grown relatively slowly over the past few decades because of sluggish average growth in productivity. Productivity growth has accelerated in recent years, producing concomitant acceleration in growth of net national income. This recent trend suggests that future revenue productivity of an income style VAT might be greater than long-term historical trends suggest.

A tax rate of approximately 2.3 percent would be sufficient to raise $825 million in the year 2000. However, the rate would have to be raised to 3.1 percent to raise that amount and also to offset revenue losses from repeal of the BET and BPT.

Gross Receipts Tax or "Consumption Tax" Worksheet

Definition of Base

The gross value of all transactions would be taxed generally. Tax transactions would include all retail sales of goods and services, including financial services. Several items would be excluded from the tax base, including medical services; items already subject to some form of taxation, such as meals and lodging, real estate, liquor, motor fuels and communication services; goods and services sold by governments and nonprofit organizations; manufacturing materials purchased from out-of-state suppliers; management services for retirement plans; food; tuition; and certain construction items and construction project components.

Projected Revenue Productivity

	Revenues per percentage-point increase in statutory tax rate ($millions)	Annual rate of growth in tax base
2000	337	6.1
2001	355	5.4
2002	373	5.1
2003	391	4.8

Among the taxes evaluated by the Commission, this tax has a base exceeded in breadth only by the two value-added taxes. It differs from a comprehensive sales tax primarily in the items it excludes and the inclusion in its base of a broad array of business purchases, including services. Taxes on business purchases are passed on from one stage of production to another. As a result, goods and services produced by industries that are not vertically integrated are taxed relatively heavily. Too few resources are allocated to such industries, while too many resources are devoted to production in industries that are vertically integrated.

Nevertheless, the low rate of tax needed to raise $825 million would produce a smaller border effect than the four sales tax options analyzed.

The Commission had difficulty finding the data needed to evaluate this tax. The revenue projection in the above table for the year 2000 was supplied by the New Hampshire Legislative Assistant Office. Revenue projections for future years assume the same rate of growth in the tax base as that for the comprehensive sales tax.

years assume the same rate of growth in the tax base as that for the comprehensive sales tax.

CAPITAL GAINS TAX

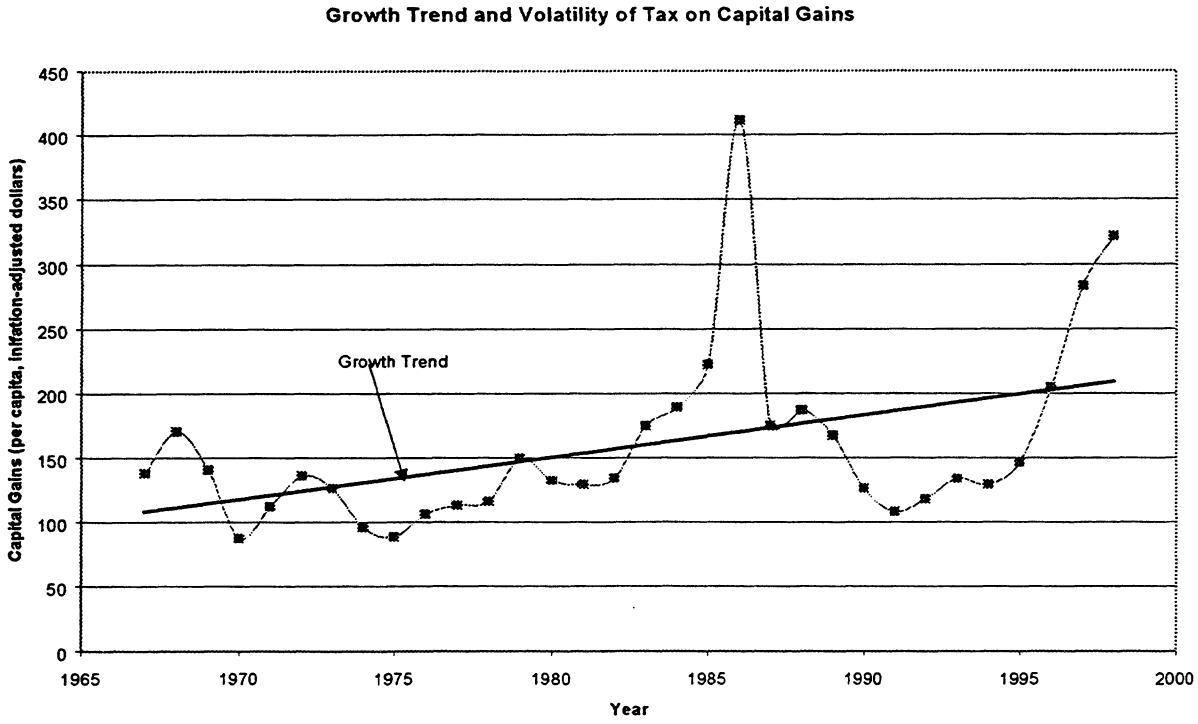
Definition of Base

Federal taxable capital gains.

Projected Revenue Productivity

	Revenues per percentage-point increase in statutory tax rate ($millions)	Annual rate of growth in tax base
2000	34	10.6
2001	38	10.5
2002	42	10.5
2003	45	7.5

Stability and Adequacy



Growth and Volatility of the Tax Base
Historical Trends

Historical annual trend growth rate of tax base (per capita, adjusted for inflation): 5.02
(Note: comparable growth rate for U.S personal income: 1.52)
Index of volatility (volatility of personal income = 100): 1362
Index of procyclicality (procyclicality of personal income = 100): 503

Fairness

The Commission's data sources did not permit an evaluation of the distributional characteristics of this tax. However, other sources suggest that it would be highly progressive. Forty-five percent of all taxable long-term capital gains are realized by taxpayers with federal adjusted gross incomes exceeding $1 million.

Competitiveness

See Chapter IVB.

Exportability

Percent of tax burden borne by nonresidents: 33 – 37 percent.
(Percent of burden of 1997 tax structure borne by nonresidents: 19-22 percent in the long-run.)

Comments. Capital gains comprise a larger fraction of federal adjusted gross income in New Hampshire (9.5 percent) than in the U.S. (6.7 percent). However, the instability of the tax would make it a highly undesirable source of revenue. In particular, as shown in the chart above, a change in federal tax laws concerning the definition of taxable capital gains can induce a huge displacement in the timing of sales.

The relative large fraction of income accounted for by capital gains in New Hampshire may reflect the importance of start-up, high-growth firms in the state's economy. If so, a tax as steep as 24 percent (the rate required to raise $825 million in the year 2000) would probably induce significant migration of these firms to other states, forcing New Hampshire to impose an even higher rate to reach its revenue target.

The revenue forecasts assume a continuation of strong growth in the stock market. A run-off of stocks would slow growth in the tax base dramatically.

The exportability of the tax is so high because capital gains are concentrated so heavily among taxpayers exposed to the highest federal marginal tax rates. To the extent that the burden of the tax is exported, it is done so entirely through the federal loss offset.

Motor Fuels Tax

Definition of Base

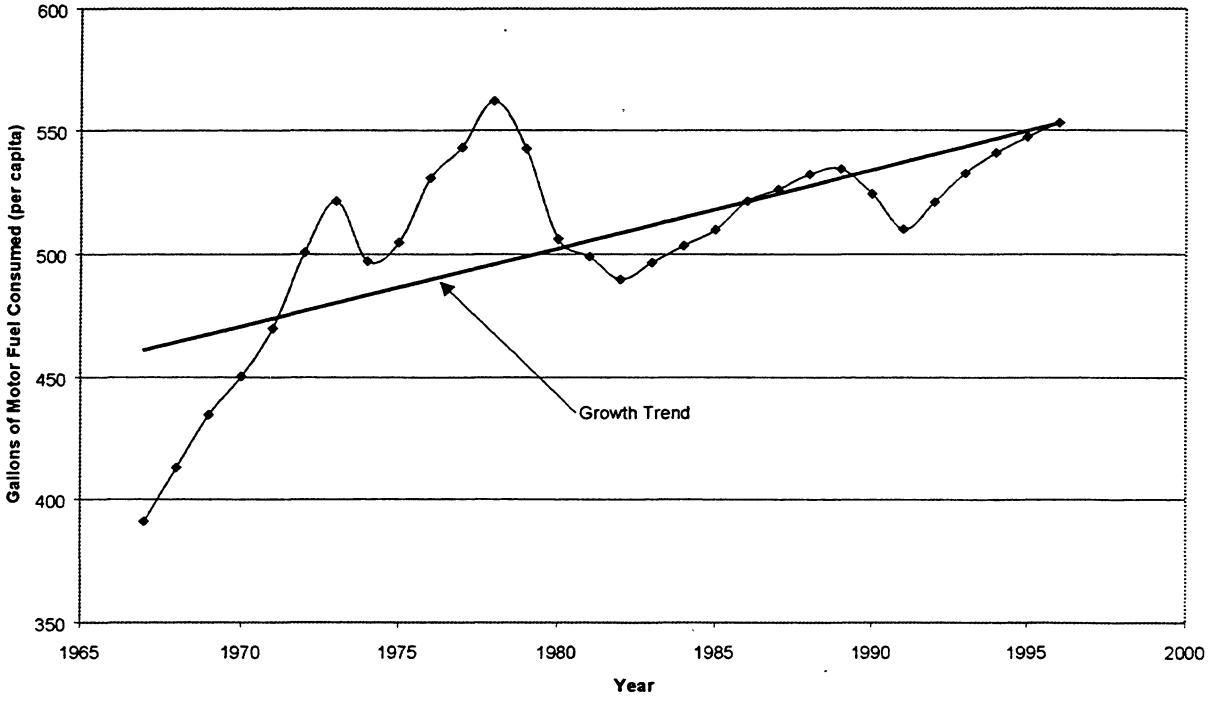
Taxable motor fuel sales, as currently defined by New Hampshire law.

Projected Revenue Productivity

	Revenues per percentage-point increase in statutory tax rate ($millions)	Annual rate of growth in tax base
2000	6.6	-1.2
2001	6.9	4.2
2002	7.1	3.2
2003	7.3	2.9

Stability and Adequacy

Growth Trend and Volatility of the Consumption of Motor Fuel



Growth and Volatility of the Tax Base
Historical Trends

Historical annual trend growth rate of tax base (per capita, adjusted for inflation): .66
(Note: comparable growth rate for U.S personal income: 1.52)
Index of volatility (volatility of personal income = 100): 241
Index of procyclicality (procyclicality of personal income = 100): 46

Fairness

The Commission's data sources did not permit an evaluation of the distributional characteristics of this tax. However, other sources suggest that the tax is regressive.

Exportability

Percent of burden of the tax borne by nonresidents: 7 – 17 percent.
(Percent of all state and local tax burden borne by nonresidents in 1997: 19 – 22 percent in the long run)

Comments. Motor fuel sales respond to oil price shocks, which are reflected in the price at the pump. They have exhibited relatively slow growth over the past several decades because of increasing fuel-efficient vehicles, a trend that has reversed in recent years with the growing popularity of SUVs and vans. Since people need to drive in recessions as well as booms and oil price shocks do not coincide with the business cycle, revenues from the tax are less procyclical than all the other taxes examined by the Commission except the tobacco excise tax.

Tobacco Excise Tax

Definition of Base

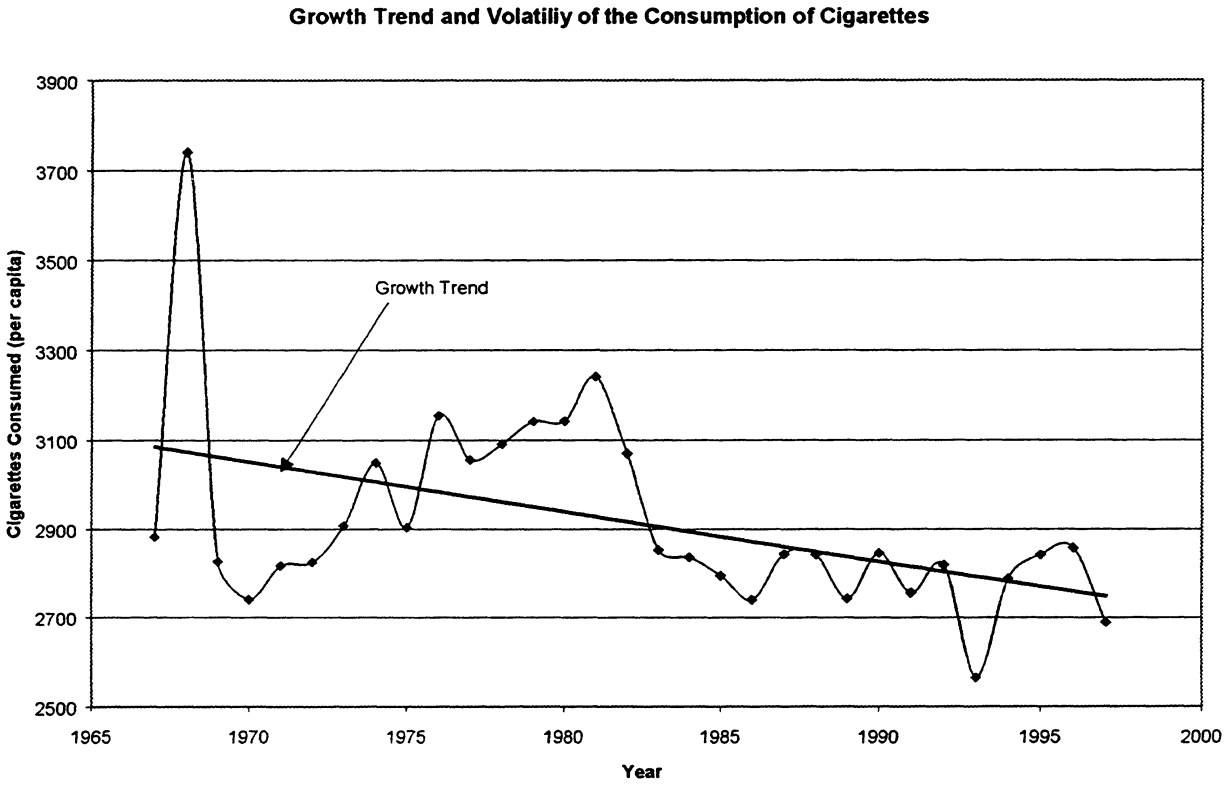
Taxable sales of cigarettes and other taxable tobacco products, as currently defined by New Hampshire law.

Projected Revenue Productivity

	Revenues per percentage-point increase in statutory tax rate ($millions)	Annual rate of growth in tax base (percent)
2000	1.4	
2001	1.3	-4.0
2002	1.3	-4.0
2003	1.2	-4.0

Note: the projected revenue for the year 2000 is the revenue yield of the tobacco excise tax in that year, $70.9 million, divided by the tax rate on cigarettes in that year, 52 cents per pack of twenty.

Stability and Adequacy



Growth and Volatility of the Tax Base
Historical Trends

Historical annual trend growth rate of tax base (per capita, adjusted for inflation): -.37
(Note: comparable growth rate for U.S personal income: 1.52)
Index of volatility (volatility of personal income = 100): 246
Index of procyclicality (procyclicality- of personal income = 100): -24

Fairness

The Commission's data sources did not permit an evaluation of the distributional characteristics of this tax. However, other sources suggest that the tax is regressive.

Exportability

Percentage of tax borne by nonresidents: 15 percent
(Percentage of burden of all taxes under 1997 tax structure borne by nonresidents: 19 – 22 percent in the long run)

Comments. The base of this tax is the only one that has exhibited a long-term decline and is countercyclical. People smoke more when economic times are bad and less when economic times are good. New Hampshire recently increased its tax rate on cigarettes to 52 cents per pack, more in line with neighboring states. Cross-border sales are very sensitive to differences in tax rates between neighboring states. Consequently, at lower tax rates, a much larger percentage of the tax would be exportable.

Introduction to Ernst & Young
"Representative Firm" Analysis

These are the results of the "representative firm" analysis performed by Ernst & Young and discussed in Chapter 4.

The representative firm approach grew out of dissatisfaction with simple but misleading indicators of a state's "tax competitiveness." For example, some conclude that because New Hampshire has the lowest per capita state and local revenue burden in the nation, it therefore need not be concerned about the competitive standing of its revenue system. But while somewhat useful, this fact does not offer much insight into how the state's current tax system, let alone alternative ones, can affect the profitability of investing in New Hampshire.

Nor do readily available data enable policymakers to evaluate how tax alternatives affect firms' bottom lines. More ambitious, sophisticated analysis, such as the representative firm approach, is required.

Following this approach, Ernst & Young constructed hypothetical firms representative of several industries important to New Hampshire's economy. Each firm 1). is assumed to earn a pre-tax rate of return to investment equal to15 percent on equity, 2). is contemplating new investments in New Hampshire with useful lifetimes of 30 years, and 3.) possesses balance sheets and income statements typical of firms in their industry.

Each firm is also assumed to undertake a new investment in New Hampshire in new equipment, structures, inventories, and financial assets, and to hire more workers. As result of the expansion, each firm makes more profits and pays more taxes. It is possible to calculate the long-run after-tax rate of return to the new facility under each tax option by comparing after-tax cash flows before and after expansion. The higher this rate of return, the less the tax alternative would discourage business investment in New Hampshire.

In estimating the tax burden of each firm, Ernst & Young took into account a wide variety of business taxes at all levels of government. Federal, state, and local business taxes should all be taken into account because businesses make their investment decisions not according to whom they pay taxes, but how much tax they pay to all governments relative to their profits. Since state and local taxes are deductible from federal corporate taxable income, it is very important to take federal taxes into account. Ernst & Young evaluated the impact of personal income taxes on the profitability of investment by using a variety of assumptions concerning the extent to which taxes are passed on to firms in the form of higher labor costs.

SUMMARY OF ERNST & YOUNG ANALYSIS

Business Tax Model Estimates

Ernst & Young estimated the after-tax rate of return for five hypothetical firms in New Hampshire and Massachusetts under current law and selected tax policy changes in New Hampshire. The industries include: semiconductor and electronic components, computer and office machines, fabricated metal products, general merchandise retailer and business services, except advertising.

Table 1 presents the after-tax rate of return estimates for several different simulations, current law in Massachusetts and the law in effect in New Hampshire prior to the Claremont decision. For each industry, the before-tax rate of return is assumed to be 15 percent. Table 2 lists the tax parameters used in each case.

The memorandum includes a brief description of the methodology used to estimate the after-tax rates of return. Table 3 presents a summary of the balance sheet and income statement information used for each of the five hypothetical firms.

Firm Financials

New Hampshire data on sales and employment by industry from the U.S. Census Bureau, *County Business Patterns – 1998* was used to determine the major manufacturing, retail and service industry hypothetical firms to be included in the study.

The income and balance sheet information used to construct the financial profiles for the hypothetical firms was developed from multiple sources, starting with income and balance sheet data for firms with positive income from the Internal Revenue Service, *Statistics of Income Corporate Source Book 1997*. The financial data was selected for the median size firms in each industry, generally firms with total assets between $25 and $50 million.

Information from the U.S. Bureau of Economic Analysis, Input-Output Requirement Matrix for 1996 was used to determine the amount of purchases from other firms and value added per dollar of sales for the selected industries. This information is needed to determine firm purchases by detailed cost categories that are subject to state and local consumption taxes. Additional information on the composition of business investment by industry was derived from BEA estimates of investment in new structures and equipment.

Economic depreciation rates used to determine the annual level of investment needed to maintain the real stock of capital were based on estimates by Hulten and Wycoff and reported in Barbara M. Fraumeni, The Measurement of Depreciation in the U.S. National Income and Product Accounts, *Survey of Current Business*, July 1997.

Tax Information

Tax return information from the New Hampshire Department of Revenue Administration and the Massachusetts Department of Revenue was used to develop the tax parameters and tax calculator used in the model. Local property tax information used in the study included information on local tax rates in Nashua and Boston and information on statewide assessment and sales ratios. Information from the Federation of Tax Administrators surveys of state and local taxation of services was also used in estimating existing sales taxes on business purchases.

Model Calculations

The financial information for each firm was used to determine the composition of assets and the revenues and costs related to an expansion of the hypothetical firms in New Hampshire and Massachusetts. The financial results are projected over a 30-year period for the new investment. The model assumes a 15 percent before-tax rate of return on the owners equity related to the expansion. Annual reinvestment equal to economic depreciation on the new assets from the expansion maintains the level of investment over time.

The annual balance sheet and income statement information is used to estimate the tax bases for the major state and local taxes including corporate income taxes, the business enterprise tax, net worth taxes, property taxes and consumption taxes. The corporate income tax calculations include annual estimates of tax depreciation of the firms' depreciable assets. The tax calculations also assume that any net losses from the expansion can be used to offset positive income from the operation of the pre-expansion business. The tax calculations also include the reduction in federal corporate income taxes due to the deductibility of state and local taxes.

Annual state and local taxes, net of the reduction in federal income taxes, are subtracted from the before-tax income stream to determine the after-tax rate of return for each industry. This is the measure reported in Table 1.

Tax Policy Simulations

The business tax model was used to simulate the expected impacts of changes in the state and local tax structure in New Hampshire. Table 2 describes the tax parameters that were used in each simulation.

For purposes of calculating corporate income and business enterprise tax impacts, the simulations assume that 100 percent of the payroll and property from the expansion is located in New Hampshire or Massachusetts and 20 percent of the sales are in the state.

Table 1: Estimated Rates of Return Under Various Tax Options

	Electronic Components	Computers	Fabricated Metals	General Merchandise Stores	Business Services
Consumption VAT	13.2%	13.1%	13.4%	7.2%	12.2%
State Property Tax	14.7%	14.6%	14.7%	14.0%	14.8%
Sales Tax 6.6%	13.9%	13.6%	14.0%	11.2%	12.9%
Sales Tax 5.0%	14.0%	13.8%	14.1%	11.6%	13.4%
Income Tax-100% Pass Through to Wages	12.5%	12.4%	12.8%	6.6%	11.5%
Income Tax-50% Pass Through to Wages	13.6%	13.5%	13.8%	10.6%	13.2%
Income Tax-25% Pass Through to Wages	14.2%	14.1%	14.3%	12.6%	14.0%
Income/Property Mix	13.6%	13.5%	13.7%	9.9%	13.1%
Income/VAT Consumption Mix	12.7%	12.5%	13.0%	7.0%	11.6%
Sales Tax/Property Tax Mix	14.2%	14.0%	14.3%	12.6%	13.7%
Pre-Claremont Manchester at 31.5 mills	14.6%	14.6%	14.6%	14.0%	14.7%
Pre-Claremont Nashua at 21.35 mills	14.7%	14.6%	14.7%	14.3%	14.8%
MA Current Law	14.3%	14.1%	14.1%	11.4%	13.4%

Table 2: Parameters for Each Tax Option

	Wage Increase	BET	BET (Alt 1)	Corporate Profits Tax (w/BET Alt 1)	Property Tax Rate	Sales Tax Rate	Profits Tax
Consumption VAT	0.00%	0.00%	3.90%	0.0%	1.20%	0.0%	0.0%
State Property Tax	0.00%	0.50%	0.00%	0.0%	2.03%	0.0%	8.0%
Sales Tax 6.6%	0.00%	0.50%	0.00%	0.0%	1.20%	6.6%	8.0%
Sales Tax 5.0%	0.00%	0.50%	0.00%	0.0%	1.20%	5.0%	8.0%
Income Tax- 100% Pass Through	2.60%	0.50%	0.00%	0.0%	1.20%	0.0%	8.0%
Income Tax- 50% Pass Through	1.30%	0.50%	0.00%	0.0%	1.20%	0.0%	8.0%
Income Tax- 25% Pass Through	0.65%	0.50%	0.00%	0.0%	1.20%	0.0%	8.0%
Income (100% Pass Through)/Property Mix	1.30%	0.50%	0.00%	0.0%	1.62%	0.0%	8.0%
Income/VAT Consumption Mix	1.30%	0.25%	1.95%	0.0%	1.20%	0.0%	4.0%
Sales Tax/Property Tax Mix	0.00%	0.50%	0.00%	0.0%	1.62%	3.3%	8.0%

In each scenario, with the exception of those involving a consumption-type value added tax (VAT), it was assumed that the new state tax regime raises an additional $825 million and local property taxes are reduced by $412.5 million. The reduction follows from the assumption that local property taxes are reduced by only 50 percent of the net new state taxes raised. .5 x $825 million = $412.5 million. It is assumed further that the current state property tax is repealed.

In the consumption-based VAT scenario, the VAT is imposed at a rate of 3.9 percent, high enough to raise $825 million plus offset the revenue loss from repeal of the business profits tax and business enterprise tax.

Note that the income tax simulation with 100 percent pass through to wages assumes an increase in labor costs of 2.6 percent. This percentage was arrived at in the following manner. It was assumed that 14.6 percent of the $825 million tax increase is exported through the net loss offset, leaving .854 * $825 million, or $705 million to be passed on in the form of higher labor costs. Estimated earnings by place of work in New Hampshire in the years 2000 were approximately $26.7 billion. $705 million divided by $26.7 billion is approximately .026.

Table 3: Balance Sheet and Income Statements for Hypothetical Firms

	Firm Financials ($thousands)				
	SIC 367	**SIC 357**	**SIC 34**	**SIC 53**	**SIC 73**
Assets					
Financial Assets	$18,488	$22,272	$14,369	$17,906	$23,852
Land	$280	$212	$576	$1,023	$210
Inventories	$8,247	$9,415	$7,705	$12,662	$1,318
Other Assets	$1,799	$1,680	$2,722	$342	$4,421
Depreciable Assets:					
Furniture & Fixtures	$181	$93	$293	$286	$351
Office Equipment, Computers	$1,524	$785	$969	$714	$2,199
Motor Vehicles	$365	$188	$1,045	$1,250	$614
Other Machinery & Equipment	$3,587	$1,847	$6,042	$1,476	$918
Structures	$1,116	$575	$1,728	$1,995	$381
Total Depreciable Assets	*$6,773*	*$3,488*	*$10,077*	*$5,721*	*$4,463*
Total Assets	*$35,587*	*$37,067*	*$35,449*	*$37,654*	*$34,264*
Liabilities and Equity					
Accounts Payable	$4,955	$5,871	$4,007	$12,258	$4,953
Long-Term Debt	$5,752	$5,180	$6,488	$2,078	$5,111
Other Liabilities	$5,897	$12,064	$7,481	$16,188	$9,986
Total Debt	$16,604	$23,115	$17,976	$30,524	$20,050
Stockholder Equity	$18,983	$13,952	$17,473	$7,130	$14,214
Total Liabilities & Equity	*$35,587*	*$37,067*	*$35,449*	*$37,654*	*$34,264*
Income Statement					
Business Receipts	$54,404	$66,036	$56,721	$81,181	$46,123
Other Income	$956	$1,369	$835	$3,122	$2,244
Total Income	$55,360	$67,405	$57,556	$84,303	$48,367
Less:					
Employee Compensation	$18,098	$13,798	$18,337	$33,619	$19,695
Rent	$334	$424	$205	$2,118	$984
Materials/Goods	$23,111	$38,535	$27,727	$35,028	$11,625
Utilities	$1,408	$1,221	$1,412	$3,234	$1,063
Services	$2,743	$2,657	$1,541	$4,533	$2,534
Other Costs	$6,603	$7,852	$5,105	$4,701	$8,715
Total Expenses	*$52,297*	*$64,487*	*$54,327*	*$83,233*	*$44,616*
Net Income Before Depreciation, Interest, and Taxes	*$3,063*	*$2,918*	*$3,229*	*$1,070*	*$3,751*

MEMORANDUM

TO: ALICE DE SOUZA
FROM: RONALD U. MENDOZA
DATE: AUGUST 7, 2000
SUBJECT: LIST OF ASSUMPTIONS FOR THE VLT MEMO

The following is a list of the major assumptions made in order to forecast the net economic impact of legalizing VLTs in New Hampshire:

In estimating the New Hampshire VLT market:

- It was assumed that there would be 6 sites for the Video Lottery Terminals (VLTs): Rockingham Park, Hinsdale Park, Seabrook Park, Lakes Region Park, The Balsams Resort, and Mt. Washington Hotel.
- Most of the potential patrons were assumed to be *day-trippers,* implying that drawing a circle with a 125 mile radius around each of the proposed VLT sites, should encompass the main market area for these sites.
- The Canadian market was assumed to be saturated (i.e. Quebec has over 15,000 VLTs in 4,175 locations), so it was dropped from the New Hampshire VLT market estimate.

In estimating the New Hampshire VLT revenues:

- Due to general similarities in population and income demographics, the Delaware and New Hampshire markets were assumed to be comparable. Hence, the 1999 weekly net machine revenue per device numbers from Delaware VLTs were used to forecast revenues in the proposed New Hampshire sites.
- 7 days a week for 52 weeks was the assumed annual period of operation.
- National Opinion Research Center (NORC, 1999) estimates of 1997 per capita casino spending were used to forecast 2000, 2001 and 2004 casino spending for the New Hampshire market. It was further assumed that, with the establishment of the 6 VLT sites in New Hampshire, much of the potential casino spending within the New Hampshire market would be concentrated in New Hampshire.
- 2000 and 2001 population growth rates were based on the 1998 state and county population growth rates estimated by the Bureau of the Census. The 2004 population levels were based on the Rand McNally Commercial Atlas and Marketing Guide, 2000.
- Based on the assumption that 60% of casino revenues come from slot machines and a comparison of the gross profits per machine in casino and non-casino sites, it was assumed that the VLT/Slots share would be 30% of the projected casino spending in the New Hampshire market.
- The state gambling tax on the machines was pegged at 44.8%.
- Multiplier effects for New Hampshire were assumed to be negligible.

In estimating the total costs:

- Adults are assumed to be 70% of the population.
- Incidence rates for problem and pathological gambling were taken from the random digital dial (RDD) survey of adults conducted by NORC. These were 1.3% and 0.8% respectively.
- NORC estimates of total annual costs for problem and pathological gamblers were $560 and $1,050 respectively.
- Cannibalization of entertainment spending was assumed to be 8% of total VLT revenues. (Conservative estimate.)
- Decline in instant lottery game revenues was assumed to be 10%. (Conservative estimate.)
- Decline in pari-mutuel state revenues was assumed to be within the range of 10% and 32%.
- Increased infrastructure and public services costs were assumed to be handled by the VLT operators.

MEMORANDUM

TO: **Members of the New Hampshire Education Funding Commission**

FROM: **Ronald U. Mendoza**

DATE: **August 4, 2000**

SUBJECT: **An analysis of the net economic impact of Video Lottery Terminals (VLTs) in New Hampshire**

SYNOPSIS:

Adding VLTs or slot machines to the portfolio of gambling products at New Hampshire's four racetracks (i.e. Rockingham Park, Hinsdale Park, Seabrook Park, and Lakes Region Park) and two resort destinations (i.e. The Balsams and Mt. Washington Hotel) will generate between $200M and $240M in additional government revenues. After factoring in social costs and the cannibalization of lottery and racetrack revenues, the estimated net economic impact will fall within the estimated range of $67M to $178M for 2001. Beyond these numbers, there are several important issues that need to be given due consideration. One deals with the sustainability of these revenue flows, particularly in light of increasing competition and innovation in the gambling industry. Several other issues focus on the increasing prevalence of problem and pathological gambling, and the regressivity of using VLTs as a revenue-generating option.

INTRODUCTION:

EGDs (Electronic Gaming Devices) or VGDs (Video Gaming Devices) are probably the most widely adopted innovations in contemporary casino gaming. While these devices are essentially equivalent to slot machines, they offer the added attractions of programmed games such as keno, blackjack, and several variants of poker. The impact on revenues of these high-tech slot machines is quite significant: roughly 60% of gross gambling revenues in Las Vegas and New Jersey casinos are attributed to these machines.[1] Consequently, their revenue generating potential was immediately recognized by several state and local governments, which have decided to legalize them. Video Lottery Terminals or VLTs are the same as regular video gaming devices but are referred to as "lottery terminals" because they are regulated by the state's lottery commission, which receives a share of the revenues.

VLT gaming was first legalized in South Dakota in 1989. Since then West Virginia (1990), Oregon (1992), Rhode Island (1992) and Delaware (1995) have followed suit. Some states, like Delaware and Rhode Island, have authorized the operation of VLTs in close proximity to pari-mutuel wagering sites such as racetracks in order to enable these facilities to compete with the booming casino market of the 90s.

[1] Christiansen and Cummings Associates, 1995.

The experience of these states in terms of generating more revenues or resuscitating their ailing racetracks[2] has been overwhelmingly positive. Thalheimer (1998) presents empirical evidence from the experience of Mountaineer Racetrack in West Virginia that adding VLTs into the gambling portfolio mix negatively impacts pari-mutuel revenues from horse wagering but more than compensates for this through larger revenue gains from the VLTs.[3] Hence, one proposal to help shore up the educational funding deficit in New Hampshire is to legalize the operation of VLTs or VGDs (Video Gambling Devices) in four racetracks and two hotels located within the state. Licensing and tax revenues from the operation of these machines can then be earmarked specifically for state educational expenditures. The proposed locations for these devices include The Balsams Hotel (Dixville Notch), Mount Washington Hotel (Bretton Woods), Hinsdale Greyhound Park (Hinsdale), Lakes Region Greyhound Park (Belmont), Rockingham Park (Salem), and Seabrook Greyhound Park (Seabrook).

This memo examines the revenue potential of VLTs with due consideration to its cannibalization[4] effects, particularly on pari-mutuel wagering (i.e. wagering on horse and dog races) and state lottery revenues. Furthermore, this memo provides forecasts of the social costs based on national studies conducted on problem gambling and on the experience of other states that have legalized VLTs. Net revenue estimates for the state of New Hampshire can then be examined.

On the revenue side, two approaches are used in attempting firs-pass approximations. The first approach adopts the common practice of using the average of net revenue numbers for slot machines located in other states. By simply multiplying these net revenue statistics by the intended number of machines in New Hampshire, a very rough approximation of the revenue potential can be made. However, this approach can be criticized on several grounds. First, one can make the argument that the net revenue per machine in New Hampshire may not be comparable to those in other states due to the differences in market demographics. Second, the net revenue per machine may be sensitive to the number of machines in place; too many machines may end-up lowering the net revenue of each individual machine. Conversely, too few machines may result in a lower incentive for VLT players to make the trip, because of concerns about machine availability.

The second approach evaluates the New Hampshire gambling market. A 125-mile radius is used to determine the markets for each of the proposed VLT sites in New Hampshire. After correcting for overlaps with casinos and other racetracks with VLTs, a unified market base is identified in order to project total state revenues for all of the facilities. To implement these projections, calculations on per capita gambling by the National Opinion Research Center (NORC) at the University of Chicago are utilized.

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[2] A report by the Association of Racing Commissioners International, Inc. found that pari-mutuel horse-race wagering has declined by as much as 60% in real dollars for the period 1960-1994. This decline is largely attributed to the rapid spread of casino gaming due to the legalization of tribal casinos and gambling boats.

[3] Thalheimer, Richard. "Pari-mutuel wagering and video gaming: a racetrack portfolio." Applied Economics. 30. pages 531-544. Routledge. 1998.

[4] This refers to the drain on spending for other products and services due to increased spending on VLTs.

With respect to social costs, baseline estimates are taken from the Gambling Impact and Behavior Study (1999)[5] conducted by the NORC. Per capita prevalence rates of problem and pathological gambling as well as costs per gambler are used to project total annual social costs for all 6 proposed VLT sites in New Hampshire.

REVENUE ESTIMATES:

One way to provide a rough estimate of the revenue stream from installing VLTs in New Hampshire is to simply take an average net revenue number for a machine currently in operation in some other state and multiply this by the proposed number of machines to be authorized. For this method to be reliable, several assumptions need to be made. First, the market size and demographics between the two sites need to be similar. Second, the number of machines in both markets needs to be roughly equal. The reason for this is that slight subtleties in market scenarios are just as conceivable: 100 VLTs in a small market and 1000 VLTs in a larger market may give out the same annual average net revenue per machine, *ceteris paribus*. These scenarios clearly imply that many factors need to be similar (or many demand and supply conditions need to be just so) in order for this method to be accurate. This notwithstanding, the range of outcomes can still be of some use, if only as a first-pass approximation of the revenue numbers one can expect. Table 1 below shows the range of potential revenue outcomes assuming a total of 5000 machines.[6]

Table 1: Projected Revenues Based on Net Revenues per Machine in Other States, 1999

Location	**Delaware**	Louisiana	Montana	Oregon	R. Island	S. Dakota	W. Virginia
Weekly net machine revenue per device	**2079**	825	248	877	1834	440	1067
Number of machines	**3500**	15600	19600	8800	1600	8000	3400
Number of locations	**3**	3656	1759	1835	2	1406	4

New Hampshire Projections							
Revenues for 5000 machines per year*	**540,540,000**	214,500,000	64,480,000	228,020,000	476,840,000	114,400,000	277,420,000
Projected State revenue from VLTs**	**242,161,920**	96,096,000	28,887,040	102,152,960	213,624,320	51,251,200	124,284,160

*Assuming 52 weeks of operation per year.
**Assuming 44.8% State percent tax.
Source: La Fleur's Fiscal 1999 VLT Special Report. Teresa La Fleur, Editor. TLF Publications. Boyds, MD. 1999.

Given the wide range of revenue outcomes, a specific *net-revenue-per-machine* number from a market similar to New Hampshire's must be selected. From a general analysis of population and median income statistics, the Delaware market seems to be the most similar to that of New Hampshire.

[5] Gerstein, Dean. et al. "Gambling Impact and Behavior Study." NORC, Gemini Research, The Lewin Group, and Christiansen/Cummings Associates. http://www.norc.uchicago.edu/new/gamb-fin.htm. April. 1999.

[6] Based on phone interviews, Delaware currently has around 5000 VLTs spread across 3 pari-mutuel facilities. Note however, that unlike VLTs in other states, Delaware's machines pay out in cash.

In determining the market areas and population sizes of the Delaware and New Hampshire gambling markets, all casinos and pari-mutuel facilities with VLTs or slot machines in the general area are identified. A circle with a 125-mile radius[7] is then drawn around each of these sites. The specific criteria for identifying the relevant casinos and pari-mutuel facilities is that all potential competitors whose market areas overlap those of the proposed VLT sites in New Hampshire need to be included in the analysis. These gambling sites are presented in Table 2.

The market area for each of the VLT sites can then be identified, by using perpendicular bisectors to apportion the market based purely on distance.[8] The areas *controlled* by each VLT site in New Hampshire can then be added to show the total market area that the state's gambling facilities can generate revenues from. The same procedure is used to identify the aggregate gambling market in Delaware, which has 3 VLT sites: Delaware Park Racetrack and Slots (Wilmington), Dover Downs Slots (Dover), and Midway Slots and Simulcast (Harrington). Finally, in order to evaluate the proposition that the Delaware and New Hampshire gambling markets are sufficiently comparable (i.e. so that net revenues per machine in Delaware can be used to project revenues in New Hampshire), the population size and the income demographics of these two markets must (at the very least) be relatively similar.

Table 2: Selected Existing and Proposed Gambling Facilities

New Hampshire Market*

State	Facility	Type	Town/City	Slots/VLTs
New Hampshire	Hinsdale Greyhound Park	Racetrack	Hinsdale	0
	Lakes Region Greyhound Park	Racetrack	Belmont	0
	Rockingham Park	Racetrack	Salem	0
	Seabrook Greyhound Park	Racetrack	Seabrook	0
	The Balsams	Hotel	Dixville Notch	0
	Mt. Washington Resort	Hotel	Bretton Woods	0
Connecticut	Foxwoods Resort Casino	Casino	Mashantucket	4500
	Mohegan Sun Resort	Casino	Uncasville	3000
	Plainfield Greyhound Park	Racetrack	Plainfield	0
	Shoreline Star	Jai Alai	Bridgeport	0
Massachusetts	El Dorado Casino Cruises	Gambling boat	Gloucester	200
	Horizon's Edge Casino	Gambling boat	Lynn	180
	Leisure Casino Cruises	Gambling boat	Gloucester	175
	MA Wonderland Greyhound Park	Racetrack	Revere	0
	Raynham-Taunton Greyhound Park	Racetrack	Raynham	0
	Suffolk Downs	Racetrack	Boston	0
Rhode Island	American Canadian Caribbean Lines	Gambling boat	Warren	NA
	Lincoln Park Greyhound Track	Racetrack	Lincoln	1700
	Newport Grand Jai Alai	Jail Alai	Jamestown	400
Maine	Bangor Raceway	Racetrack	Bangor	0
	Prince of Fundy Cruises	Gambling boat	Portland	200
	Scarborough Downs	Racetrack	Scarborough	0

[7] Various studies have used different radii in order to show the market size, assuming that patrons will mostly be *day-trippers* (i.e. approximately 74% based on patron surveys in some Wisconsin casinos). If one accounts for the density of the New Hampshire and Delaware markets as well as the potential and/or existing traffic congestion, 125 miles can be considered an appropriate number.

[8] The idea is to draw concentric circles around each VLT site or casino in order to represent the market area for each site. Overlapping market regions are then divided equally in order to identify the areas where each particular gambling facility is the first choice, when evaluated purely on a minimum distance criterion.

New York	Akwesasne Mohawk Casino	Casino	Hogansburg	280
	Turning Stone Casino Resort	Casino	Verona	800
	Freeport Casino Cruises	Gambling boat	Freeport	NA
	Manhattan Cruises	Gambling boat	Brooklyn	NA
Canada	Casino de Montreal	Casino	Montreal	2980

Delaware Market*

State	Facility	Type	Town/City	Slots/VLTs
Delaware	Delaware Park Racetrack and Slots	Racetrack	Wilmington	2000
	Dover Downs Slots	Racetrack	Dover	2000
	Midway Slots and Simulcast	Racetrack	Harrington	1200
New Jersey	Various Casinos	Casino	Atlantic City	15,000+
West Virginia	Charles Town Races	Racetrack	Charles Town	2000

*Data gathered from Internet search and phone interviews in July , 2000.

There are some obvious similarities between the two markets. Both the New Hampshire and Delaware sites face considerable competition from neighboring facilities: over 14,000 slot machines in competing gambling sites for New Hampshire and well over 17,000 machines (mostly in Atlantic City) for Delaware. Gambling facilities in both states also face strong competition from popular tourist destination sites that offer gambling as only one of many other activities: New Hampshire sites will face competition from Foxwoods and Mohegan Sun to the South and Casino de Montreal to the North, while Delaware sites face significant competition from Atlantic City casinos.

With respect to market size, the population base or market size for New Hampshire is roughly 9 million with a median income range among the covered counties of $24,893 to $51,855.[9] The Delaware market has a larger population base of approximately 13 million with a median income range of about $19,412 to $66,745. Based on surveys conducted by NORC (1999) and the Wisconsin Policy Research Institute (1995),[10] the majority of casino patrons fall within the $20k to $50k income range, making both New Hampshire and Delaware prime gambling sites. The decomposition of the population numbers by county can be found in Tables 3A and 3B below.

Table 3: Population Estimates/Projections

A. The New Hampshire Market*

	1999 estimated	Growth rate 98	2000 projected	2001 projected	2004 projected**
Massachusetts.....41%					
Berkshire	132,218	-0.5	131,557	130,899	129900
Essex	704,407	0.6	708,633	712,885	729300
Franklin	70,806	0.3	71,018	71,231	70500
Hampden	438,279	-0.2	437,402	436,528	433500
Hampshire	150,892	0.4	151,496	152,102	153600
Middlesex	1,426,606	0.3	1,430,886	1,435,178	1463400
Worcester	738,629	1.1	746,754	754,968	761400
	3,661,837		**3,677,747**	**3,693,792**	**3741600**
Maine.....11%					
Androscoggin	101,337	0.1	101,438	101,540	98300

[9] Population numbers from overlapping areas into Canada were not included. The reason being that Quebec has over 15,000 installed VLTs in over 4,175 locations according to La Fluer (1999). The Quebec market is considered saturated.

[10] *The Economic Impact of Native American Gaming in Wisconsin.* Wisconsin Policy Research Institute Report. Vol. 8. no.3. April, 1995.

Cumberland	256,437	0.8	258,488	260,556	264100
Franklin	28,797	-0.2	28,739	28,682	29100
Kennebec	115,224	0.1	115,339	115,455	112700
Oxford	54,288	0.8	54,722	55,160	54600
Penobscot	144,432	0	144,432	144,432	139500
Piscataquis	18,077	-0.6	17,969	17,861	17700
Somerset	52,630	0.4	52,841	53,052	54100
Waldo	36,965	1.2	37,409	37,857	38100
York	177,588	1.5	180,252	182,956	185500
	985,775		**991,629**	**997,550**	**993700**
New Hampshire.....14%					
Belknap	53,680	1.4	54,432	55,194	55200
Carroll	40,184	2	40,988	41,807	40700
Cheshire	72,401	0.5	72,763	73,127	75200
Coos	32,725	-0.4	32,594	32,464	34800
Grafton	78,570	0.4	78,884	79,200	79700
Hillsborough	367,233	1.3	372,007	376,843	387700
Merrimack	129,931	1.6	132,010	134,122	135700
Rockingham	275,488	1.8	280,447	285,495	288000
Strafford	110,667	1.1	111,884	113,115	115000
Sullivan	40,255	1	40,658	41,064	40700
	1,201,134		**1,216,666**	**1,232,431**	**1252700**
New York.....17%					
Albany	292,006	-0.3	291,130	290,257	286200
Columbia	63,002	-0.2	62,876	62,750	64500
Dutchess	268,237	1.1	271,188	274,171	277900
Essex	37,507	-0.1	37,469	37,432	39600
Greene	48,348	0.4	48,541	48,736	50500
Rensselaer	151,445	-0.5	150,688	149,934	150800
Saratoga	199,733	1.2	202,130	204,555	206900
Schenectady	143,871	-0.9	142,576	141,293	143100
Ulster	167,293	0.3	167,795	168,298	168100
Warren	61,441	0.3	61,625	61,810	63000
Washington	60,141	0	60,141	60,141	60700
	1,493,024		**1,496,159**	**1,499,377**	**1511300**
Connecticut.....11%					
Hartford	829,671	0.2	831,330	832,993	817600
Litchfield	182,399	0.6	183,493	184,594	188400
	1,012,070		**1,014,824**	**1,017,587**	**1006000**
Vermont.....6%					
Addison	35,440	0.8	35,724	36,009	36500
Bennington	35,965	0.1	36,001	36,037	34800
Caledonia	28,821	0.9	29,080	29,342	28500
Chittenden	143,947	1	145,386	146,840	148600
Essex	6,644	0.9	6,704	6,764	6700
Lamoille	21,935	1.4	22,242	22,553	22500
Orange	27,871	0	27,871	27,871	29200
Orleans	25,496	0.5	25,623	25,752	26300
Rutland	62,407	-0.2	62,282	62,158	62700
Washington	56,289	0.2	56,402	56,514	57200
Windham	42,670	-0.1	42,627	42,585	42600
Windsor	55,454	0.2	55,565	55,676	55700
	542,939		**545,508**	**548,102**	**551300**
Total Market	**8,896,779**		**8,942,533**	**8,988,839**	**9,056,600**

B. The Delaware Market*

	1999 estimated	Growth rate 98	2000 projected	2001 projected	2004 projected**
New Jersey.....23%					
Burlington	424,510	0.8	427,906	431,329	428300
Camden	503,093	-0.2	502,087	501,083	503300
Cape May	98,009	0	98,009	98,009	99500
Cumberland	140,112	-0.2	139,832	139,552	140100
Gloucester	250,492	1	252,997	255,527	259100
Hunterdon	124,553	1.8	126,795	129,077	133200
Mercer	333,861	0.7	336,198	338,551	337400
Morris	463,545	1	468,180	472,862	492000
Salem	64,534	-0.6	64,147	63,762	66600

Somerset	288,090	2.1	294,140	300,317	320100
Sussex	144,700	1.1	146,292	147,901	149800
Warren	100,312	1.6	101,917	103,548	104000
	2,935,811		**2,958,500**	**2,981,518**	**3033400**
Pennsylvania.....55%					
Berks	358,211	0.7	360,718	363,244	366600
Bucks	594,047	1.1	600,582	607,188	611400
Carbon	58,759	0.1	58,818	58,877	60200
Chester	430,001	1.9	438,171	446,496	456800
Columbia	63,674	-0.4	63,419	63,166	64400
Dauphin	245,576	0	245,576	245,576	248000
Delaware	541,502	-0.2	540,419	539,338	528400
Lackawanna	206,520	-0.9	204,661	202,819	199200
Lancaster	460,035	0.7	463,255	466,498	477500
Lebanon	117,856	0.2	118,092	118,328	119900
Lehigh	299,855	0.4	301,054	302,259	303100
Luzerne	312,000	-0.8	309,504	307,028	301900
Lycoming	116,709	-0.6	116,009	115,313	114900
Monroe	128,541	2.5	131,755	135,048	145000
Montgomery	724,087	0.6	728,432	732,802	737800
Montour	17,571	-0.1	17,553	17,536	17400
Northampton	259,736	0.5	261,035	262,340	263200
Northumberland	93,163	-0.8	92,418	91,678	91100
Philadelphia	1,417,601	-1.2	1,400,590	1,383,783	1353500
Pike	41,357	3	42,598	43,876	46900
Schuylkill	148,788	-0.9	147,449	146,122	145600
Snyder	37,875	-0.2	37,799	37,724	39600
Union	40,546	0.7	40,830	41,116	44600
Wayne	46,080	1.4	46,725	47,379	49300
York	376,586	0.8	379,599	382,635	392400
	7,136,676		**7,147,061**	**7,158,169**	**7178700**
Delaware.....6%					
Kent	126,048	1.4	127,813	129,602	128600
New Castle	487,182	1	492,054	496,974	501800
Sussex	140,308	2.3	143,535	146,836	154600
	753,538		**763,402**	**773,412**	**785000**
Maryland.....15%					
Anne Arundel	480,483	1.2	486,249	492,084	506800
Baltimore	723,914	0.3	726,086	728,264	744900
Calvert	73,748	2.8	75,813	77,936	84900
Caroline	29,708	0.6	29,886	30,066	31200
Cecil	84,238	2.3	86,175	88,158	90600
Dorchester	29,709	0.4	29,828	29,947	30000
Hartford	217,908	1.6	221,395	224,937	237900
Kent	19,089	0.5	19,184	19,280	19800
Queen Anne's	40,688	2.5	41,705	42,748	45700
St. Mary's	88,758	1.3	89,912	91,081	102000
Somerset	24,236	-0.1	24,212	24,188	24900
Talbot	33,550	1.2	33,953	34,360	35100
Wicomico	79,560	0.1	79,640	79,719	80900
Worcester	43,672	2.1	44,589	45,525	48300
	1,969,261		**1,988,627**	**2,008,293**	**2083000**
Virginia.....1%					
Accomack	32,121	-0.4	31,993	31,865	32000
Essex	9,121	0.4	9,157	9,194	9100
King and Queen	6,540	0.6	6,579	6,619	7000
Lancaster	11,349	0.1	11,360	11,372	11000
Mathews	9,255	1.6	9,403	9,554	9800
Middlesex	9,771	1.4	9,908	10,047	10500
New Kent	13,218	2.7	13,575	13,941	14400
Northampton	12,810	0.7	12,900	12,990	12500
Northumberland	11,668	1.7	11,866	12,068	12300
Richmond	8,745	0.7	8,806	8,868	8700
Westmoreland	16,259	-0.4	16,194	16,129	15200
	140,857		**141,741**	**142,647**	**142500**
Total Market	**12,936,143**		**12,999,331**	**13,064,039**	**13,222,600**

*1999 growth rates used to calculate projections for 2000 and 2001, and market shares in percentages are indicated after each state.
**Projections for 2004 from Rand McNally Commercial Atlas and Marketing Guide, 2000.
Source:http://www.census.gov/datamap/www/index.html

While these population numbers seem to indicate that Delaware VLT sites have a significantly larger market than that of the proposed New Hampshire sites, it is important to note one cogent argument that may lead us to conclude otherwise. In determining the New Hampshire and Delaware markets, only the influence of distance has been considered so far. While this is obviously of paramount concern for a market predominantly composed of *day-trippers*, there is also the gravity effect from being proximal to a popularly known tourist spot (i.e. Atlantic City or Foxwoods).

It follows that the population base for both the Delaware and New Hampshire sites need to be scaled down in order to account for this effect. Incidentally, it is important to note that this argument applies more so for the case of Delaware Park in Wilmington, DE which is much closer to Atlantic City, NJ (i.e. approximately 65 miles away) than the closest New Hampshire sites are to Foxwoods (i.e. from Rockingham Park in Salem, NH, 99 miles), Mohegan Sun (i.e. from Rockingham Park, 100 miles), or even Casino de Montreal (i.e. from The Balsams, 120 miles). Moreover, Foxwoods may be the largest casino in the world with over 4500 slot machines, but it pails in comparison to the combined gambling supply of Atlantic City. The gravity effect of Foxwoods on the proposed VLT sites in New Hampshire will be much lower than the effect of Atlantic City on the Delaware sites.

Therefore, there is every reason to expect that the Delaware market is much lower than 13 million, and that this estimated market size should be viewed as a very generous upper bound estimate. If one makes the not unreasonable assumption that all New Jersey residents would much prefer Atlantic City (15,000+ slots) over Delaware Park Racetrack and Slots (2000+ slots) in Wilmington, then the market for Delaware is closer to 10 million people (i.e. by subtracting the New Jersey residents from the Delaware market), and is not too far off from the 9 million estimate for the New Hampshire market. Hence, a case can indeed be made for using the net revenue numbers from Delaware machines in order to make projections of expected VLT revenues in New Hampshire. From earlier calculations presented in Table 1, New Hampshire stands to gain $242M in gross tax revenues from operating 5000 VLTs while imposing a 44.8% state tax on machine revenues.

In order to test how robust these projected revenue numbers are, another method is used to forecast VLT revenues. The National Opinion Research Center (NORC) at the University of Chicago published a report in 1999 evaluating the impact of gambling trends in the United States. Studying 100 sample communities across the US from 1980 to 1997, the report produced baseline estimates of per capita casino spending. In order to impute expected VLT revenues from casino spending, use is made of the fact that slot machines account for around 60% of casino revenues in various gambling facilities in Atlantic City and Las Vegas.

However, slot machines in casinos will definitely pull in more revenues than slot machines located in racetracks or hotels. Gambling industry experts observe that video wagering machines in non-casino settings usually generate less revenues than those based in casinos, because the presence of table games in casinos "define the gaming atmosphere and stimulate the behavior within a [gambling] facility."[11]

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[11] *Toward Expanded Gaming: A review of Gaming in Massachusetts.* Report of the Senate Committee on Post Audit and Oversight. The Commonwealth of Massachusetts. September 1993, pages 56 and 57.

Comparing the numbers for gross profits per machine in non-casino (i.e. Louisiana, Montana, Rhode Island) and casino sites (i.e. Colorado towns of Cripple Creek, Central City, and Black Hawk), 30% is identified as a more reasonable share number. The calculations are summarized in Table 4 below.

Table 4: Projected VLT Revenues from NORC Estimates*

Year	Distance	NH Market		Potential Casino spending	VLT/Slot share	State revenue
		Population		A. at $153 per capita (125 miles)	at 30%	at 44.8% tax
				B. at $178 per capita (50 miles)**		
2000	51-125 miles	3,650,214		$ 558,482,742		
	0-50 miles	5,292,319		$ 942,032,782		
		8,942,533	Total	$ 1,500,515,524	$ 450,154,657	$ 201,669,286
2001	51-125 miles	3,661,520		$ 560,212,560		
	0-50 miles	5,327,319		$ 948,262,782		
		8,988,839	Total	$ 1,508,475,342	$ 452,542,603	$ 202,739,086
2004	51-125 miles	3,660,000		$ 559,980,000		
	0-50 miles	5,396,600		$ 960,594,800		
		9,056,600	Total	$ 1,520,574,800	$ 456,172,440	$ 204,365,253

*Based on NORC (1999) estimates of 1997 per capita casino spending.
**Population total within 50 miles of the VLT sites were drawn from all the counties of New Hampshire and Massachusetts (i.e. those falling within the market scope determined earlier), Oxford, Franklin and York in Main, and Bennington, Windham, and Windsor in Vermont.

With these additional calculations, projections of additional gross tax revenues for New Hampshire range from $200M to $240M.

COST ESTIMATES:

To a large extent, estimating the economic and social costs of operating VLTs or slot machines is a far more complicated exercise than projecting its revenues. In terms of economic costs, existing infrastructure will depreciate far more quickly due to increased traffic, and new facilities (i.e. parking space and access roads) will need to be constructed in order to maximize patronage. As regards social costs, we again rely on the NORC (1999) study, which estimated the costs attending pathological and problem gambling in the US.[12] These costs included expenses related to job loss, bankruptcy, arrests, corrections and poor health, to name a few. While these estimates do not account for the time dimension of problem and pathological gambling[13] the estimated numbers can still serve as a useful benchmark.

However, both problem and pathological gambling already exist in New Hampshire, due either to the exposure of its residents to the gambling activities already legalized in the state (i.e. pari-mutuel horse wagering, lotto, and *Power Ball*) or due to imported gambling problems when its residents visit casinos and

[12] The NORC (1999) estimates are significantly lower than earlier estimates which fall within a range of $13,000 to $52,000 as cited in the 1995 Wisconsin Policy Research Institute Report. The NORC numbers are used because these are the most recent estimates of social costs.
[13] NORC (1999) concluded that lifetime costs for individual gamblers are much higher than the yearly costs would imply. The lifetime costs estimated for problem and pathological gamblers were $5,130 and $10,550 respectively.

VLT sites in other states. Hence, the difficulty of identifying economic and social costs is separating the incremental effect of legalizing these VLTs in New Hampshire.

In order to simplify the analysis, it is assumed that the legalization of VLTs will account for much of the resulting problem and pathological gambling in Hew Hampshire. This is not an unrealistic assumption based on two reasons. First, anecdotal evidence supports this assumption. For instance, Dr. Robert Hunter, a prominent Las Vegas clinical psychologist specializing in problem and pathological gambling, has been widely quoted for calling EGDs (i.e. VLTs) "the crack cocaine of gambling," implying that it is the most addictive and destructive type of gambling. Second, there is no compelling reason to expect that using the NORC (1999) prevalence rates will lead to an overestimate of the social costs of VLTs. These rates are much lower than those estimated by previous studies, and Cox, Lesieur, Rosenthal, and Volberg (1997)[14] concluded from a general survey of prevalence studies conducted throughout the US, that prevalence rates tend to be higher in the Northeast. Therefore using the NORC rates, which can be considered a close approximation of national average prevalence, should then provide a conservative estimate of the social costs. The social costs of legalizing VLTs in the 6 proposed sites in NH are calculated below.

Table 5: Social Costs

Only NH residents

Year of Operation	NH Adults	Problem Gamblers*	Annual cost**	Pathological Gamblers*	Annual cost**	Total Cost
	at 70% of total population	at 1.3% incidence	at $560 per person	at 0.8% incidence	at $1,050 per person	current dollars
2000	851,666	11,072	6,200,128	6,813	7,153,994	13,354,123
2001	862,702	11,215	6,280,471	6,902	7,246,697	13,527,167
2004	876,890	11,400	6,383,759	7,015	7,365,876	13,749,635

Entire NH market

Year of Operation	NH Adults	Problem Gamblers*	Annual cost**	Pathological Gamblers*	Annual cost**	Total Cost
	at 70% of total population	at 1.3% incidence	at $560 per person	at 0.8% incidence	at $1,050 per person	current dollars
2000	6,259,773	81,377	45,571,148	50,078	52,582,094	98,153,242
2001	6,292,187	81,798	45,807,124	50,337	52,854,373	98,661,497
2004	6,339,620	82,415	46,152,434	50,717	53,252,808	99,405,242

*Incidence was based on random digital dial (RDD) survey of **adults** conducted by NORC, p.25.
**NORC estimates, p.52. The per adult costs of $560 and $1050 refer to an average bundle of costs of problem and pathological gambling which include: job loss, unemployment benefits, welfare benefits, bankruptcy, arrests, corrections, divorce, poor health, poor mental health, and gambling treatment.

Besides social costs, infrastructure costs and public expenditure increases need to be factored in. These additional costs include city service improvements, additional police spending, and road improvements and upkeep. The majority of studies indicate that the gambling facilities themselves (i.e. mostly casinos) provide funds for these additional costs, and that this arrangement is usually a binding

[14] Cox, S., H. Lesieur, R. Rosenthal, and R. Volberg. *Problem and Pathological Gambling in America: The national picture.* Report prepared by the Research and Public Policy Committees of the National Council on Problem Gambling. 1997.

clause in permits authorizing gambling operations. For ease of analysis, it is assumed that the legalization of VLTs in New Hampshire incorporates this clause.

Several other factors regarding *cannibalization effects* also need to be considered. First, Goodman (1994) cites the assumption by some economists that any increase in gaming revenue needs to be deflated by around 8%, due to the decline in revenues in other entertainment spending (i.e. regional restaurant, theater, and sporting event patronage).[15] Second, West Virginia state officials estimate that the pari-mutuel handle at Mountaineer Park declined by approximately 10% since the introduction of VLTs, while Thalheimer (1998) concludes that pari-mutuel wagering in the same racetrack can decline by as much as 32% if an average of 160 VLTs are operated. The calculations for both scenarios will be presented. Third, a 1993 Commonwealth of Massachusetts Senate report concluded that legalizing video wagering would result in a 15% decline in the state lottery's Instant Game sales.[16] While these three factors alone do not exhaust all of the potential cannibalization effects of legalizing VLTs in New Hampshire, these should nevertheless provide some account of the adverse effects of VLTs.

NET ECONOMIC IMPACT OF VLTs:

The calculations for the projected net economic impact of legalizing 5000 VLTs in 6 proposed sites in New Hampshire are shown below. Scenario 1 uses projected revenues based on the population of the New Hampshire market identified earlier, and it considers problem and pathological gambling costs only among New Hampshire adults. Scenario 2 uses projected revenues from the Delaware average net machine statistics, and it considers problem and pathological gambling costs only among New Hampshire adults. Scenario 3 is the same as Scenario 2 except for the inclusion of total social costs from the entire market population. Scenario 4 is the same as Scenario 1 except for the exclusion of Massachusetts patrons. It represents the competitive threat from Massachusetts racetracks and gambling facilities, in case VLTs are legalized there as well. Finally, Scenario 5 shows the net economic impact, if Massachusetts also chooses to legalize VLTs, and the full social cost from the remaining New Hampshire market is considered.

Table 6: General Net Economic Impact

Scenario 1: $200M Net Revenue

(based on market/population data)

Items	millions	millions
Tax revenues from VLTs (at 44.8% tax rate)	$200	$200
Less: 8% of $450M (cannibalization of other entertainment spending)	-$36	-$36
Less: 10% of $120 (decline in instant lottery game revenues due to substitution effect)	-$12	-$12
Pari-mutuel revenue decline	(10%)	(32%)
Less: Pari-mutuel revenue decline (based on approximately $3.5M state revenue from four tracks)	-$0.35	-$1.12
Less: Social costs of problem and pathological gambling (2001 population = 860,000 NH adults)	-$13.5	-$13.5
Net Economic Impact	**$138.15**	**$137.38**

[15] Goodman, Robert. *Legalized Gambling as a Strategy for Economic Development.* Center for Economic Development. University of Massachusetts. Amherst, MA. 1994. Page 53.

[16] See page 45.

Scenario 2: $240M Net Revenue

(based on Delaware net machine revenues)

Items	millions	millions
Tax revenues from VLTs (at 44.8% tax rate)	$240	$240
Less: 8% of $450M (cannibalization of other entertainment spending)	-$36	-$36
Less: 10% of $120 (decline in instant lottery game revenues due to substitution effect)	-$12	-$12
Pari-mutuel revenue decline	(10%)	(32%)
Less: Pari-mutuel revenue decline (based on approximately $3.5M state revenue from four tracks)	-$0.35	-$1.12
Less: Social costs of problem and pathological gambling (2001 population = 860,000 NH adults)	-$13.5	-$13.5
Net Economic Impact	**$178.15**	**$177.38**

Scenario 3: $240M Net Revenue with Full Social Costs of Entire NH Market

(including selected areas in NH, MA, ME, NY, CT and VT)

Items	millions	millions
Tax revenues from VLTs (at 44.8% tax rate)	$240	$240
Less: 8% of $450M (cannibalization of other entertainment spending)	-$36	-$36
Less: 10% of $120 (decline in instant lottery game revenues due to substitution effect)*	-$12	-$12
Pari-mutuel revenue decline	(10%)	(32%)
Less: Pari-mutuel revenue decline (based on approximately $3.5M state revenue from four tracks)	-$0.35	-$1.12
Less: Social costs of problem and pathological gambling (2001 population figure = 6.292M adults)	-$98.6	-$98.6
Net Economic Impact	**$93.05**	**$92.28**

*Data from www.lafleur.com.

Scenario 4: Massachusetts legalizes VLTs and Social Costs for NH Residents Only

(all MA patrons excluded)

Items	millions	millions
Tax revenues from VLTs (at 44.8% tax rate)	$114.37	$114.37
Less: 8% of $450M (cannibalization of other entertainment spending)	-$20.42	$20.42
Less: 10% of $120 (decline in instant lottery game revenues due to substitution effect)*	-$12	-$12
Pari-mutuel revenue decline	(10%)	(32%)
Less: Pari-mutuel revenue decline (based on approximately $3.5M state revenue from four tracks)	-$0.35	-$1.12
Less: Social costs of problem and pathological gambling (2001 population = 860,000 NH adults)	-$13.5	-$13.5
Net Economic Impact	**$68.1**	**$67.33**

*Data from www.lafleur.com.

Scenario 5: Massachusetts legalizes VLTs and Social Costs of Entire NH Market

(all MA patrons excluded)

Items	millions	millions
Tax revenues from VLTs (at 44.8% tax rate)	$114.37	$114.37
Less: 8% of $450M (cannibalization of other entertainment spending)	-$20.42	$20.42
Less: 10% of $120 (decline in instant lottery game revenues due to substitution effect)*	-$12	-$12
Pari-mutuel revenue decline	(10%)	(32%)
Less: Pari-mutuel revenue decline (based on approximately $3.5M state revenue from four tracks)	-$0.35	-$1.12
Less: Social costs of problem and pathological gambling (2001 population = 3.7M adults)	-$58.12	-$58.12
Net Economic Impact	**$23.48**	**$22.71**

*Data from www.lafleur.com.

These potential outcomes point towards a wide range of net economic impacts. From a purely New Hampshire-centric point of view, Scenarios 4 and 2 show a net economic gain of $67.33M to $178.15M, depending on whether or not Massachusetts responds by legalizing VLTs as well. However, once the full social costs are considered, the appropriate range is from $22.71 to $93.05, in Scenarios 5 and 3. It is clear from these numbers that VLTs, as a revenue-generating option for New Hampshire, will score high marks in terms of exportability. That is to say, gaming revenue burdens will fall mostly on out of state

patrons (86%): Massachusetts (41%), New York (17%), Maine (11%), Connecticut (11%), and Vermont (6%). New Hampshire residents comprise only 14% of the VLT gambling market.

OTHER ISSUES:

The calculations made so far indicate a positive net economic impact, if VLTs are to be legalized in New Hampshire. The market numbers also imply a high degree of exportability of the gambling tax burden. Beyond these numbers however, there are equally important issues that need to be considered. These include the issue of the sustainability of these revenue flows, the increasing prevalence of problem and pathological gambling, and the regressivity of using VLTs as a revenue-generating option. Focusing first on sustainability, the income and profit statistics from VLT operations in other states are presented below.

Table 7: Historical Net VLT Income and State Profits

State	FY1994	FY1995	FY1996	FY1997	FY1998	FY1999	Growth from legalization date
Net Income							
Delaware	NA	NA	76.7	255.9	326.7	377.7	392%
Louisiana	412.9	508.1	587.1	618.5	653.4	670.6	62%
Montana	200.3	209	214.6	225.3	244.5	253.3	26%
Oregon	NA	NA	355.6	393.1	407.4	402.6	13%
Rhode Island	NA	57	86	112	131	155	172%
South Dakota	165	126	175	178	185	183	11%
West Virginia	5.6	28.1	47.2	82.3	131.4	190.6	3304%
State Profit							
Delaware	NA	NA	19.2	NA	87.7	117.6	513%
Louisiana	92.9	141.5	163.9	181.1	193.6	199.1	114%
Montana	30	31.4	32.2	33.8	36.7	38	27%
Oregon	NA	NA	203.9	216.2	228.1	235.7	16%
Rhode Island	NA	24	42	54	64	75	213%
South Dakota	59	46	87	89	92	92	56%
West Virginia	1.5	9.2	15.7	15.7	44	64	4167%

*Data from La Fleur (1999).

All 7 states currently operating VLTs have experienced positive growth rates for net VLT income and state profits. More importantly, Delaware, Rhode Island, and West Virginia have posted phenomenal triple or quadruple digit growth in incomes and state profits. While these numbers appear extremely encouraging, one must note however, that none of these states show VLT revenues during an economic downturn. Industry experts like Goodman (1994) and Madhusudhan (1995)[17] have found evidence showing a strong correlation between the economic business cycle and gambling revenues. Hence, these growth rates may simply apply during an economic upswing, such as the one currently prevailing. Another important reason why one might doubt the sustainability of these high growth numbers, especially in the

[17] Madhusudhan, Ranjana. *Implications of Legalized Gambling for State and Local Finances: The case of New Jersey.* in Casino Development: How would casinos affect New England's economy? Robert Tannenwald, Editor. Federal Reserve Bank of Boston. Special Report 2. October, 1995.

case of New England, is that the supply of gambling facilities and products is increasing at equally phenomenal rates. For instance, while casinos were legal only in Atlantic City and Las Vegas in the early 90s, today they are legal in over 28 states.

Furthermore, based on the market numbers for the 6 VLT sites in New Hampshire, more than half of the prospective patrons are from Massachusetts (41%) and Connecticut (11%). It is not unreasonable to expect these states to consider legalizing VLTs, in the event that New Hampshire's VLT-equipped racetracks and hotels start to siphon-off Massachusetts and Connecticut dollars. Likely candidates for VLT sites include Suffolk Downs, Raynham-Taunton Park, and Wonderland Park, in Massachusetts and Plainfield Park in Connecticut. Under a more competitive scenario where Rhode Island, New Hampshire, Connecticut and Massachusetts have legalized VLTs, growth rates in income and revenues can be expected to taper off in all these 4 states. There is also the very possibility that net revenue statistics for each machine in these states will decline as well. Under these conditions, there will be more pressure to legalize more innovations in these states' gambling portfolios, in the same way that the explosive growth of casinos in the 90's exerted pressure on various states to make innovations in their lottery products. Seen under this lens, policy makers must be aware of the consequences of going down this route.

Another issue that needs to be addressed deals with the disturbing trend of increasing problem and pathological gambling. While the estimates of the prevalence of problem and pathological gambling used earlier appear on the low end of the range of estimated prevalence rates, a study by the National Research Council (NRC)[18] concluded: "With the increased availability of gambling and new gambling technologies, pathological gambling has the potential to become even more widespread." Perhaps what is even more alarming is the NRC estimate that as many as 1.1 million adolescents between the ages of 12 and 18 can already be considered pathological gamblers. In fact, the National Coalition Against Legalized Gambling cites the statistic that 96% of problem gamblers began gambling before the age of 14. This additional cost is difficult to quantify and even more difficult to predict, and it has not yet been included in the net economic impact numbers discussed earlier. Nevertheless, one can reasonably expect adolescent problem and pathological gambling to rise significantly in New Hampshire if VLTs are legalized.

Finally, there is also the issue regarding the regressivity of using VLTs as a means to generate revenues for the state of New Hampshire. Taxes on VLT revenues are, *de facto*, taxes on the patrons of these gambling devices. At the heart of this issue then is the question: "Which part of the population bears the brunt of this gambling tax?" While there are no available studies that specifically focus on the regressivity of taxing VLTs in racetracks or hotels, there is a considerable amount of literature focusing on the regressivity of taxing casino revenues. For instance, Borg, Mason, and Shapiro (1991) found that people making less than $10,000 a year spend twice as much, as a percentage of their income, on gambling than those who make $30,000 to $40,000 a year. They concluded that policy makers should consider that taxes on gambling place a heavier burden, as a proportion of income, on lower income groups than on the more affluent.[19] One can probably observe the same regressive structure for VLT revenues.

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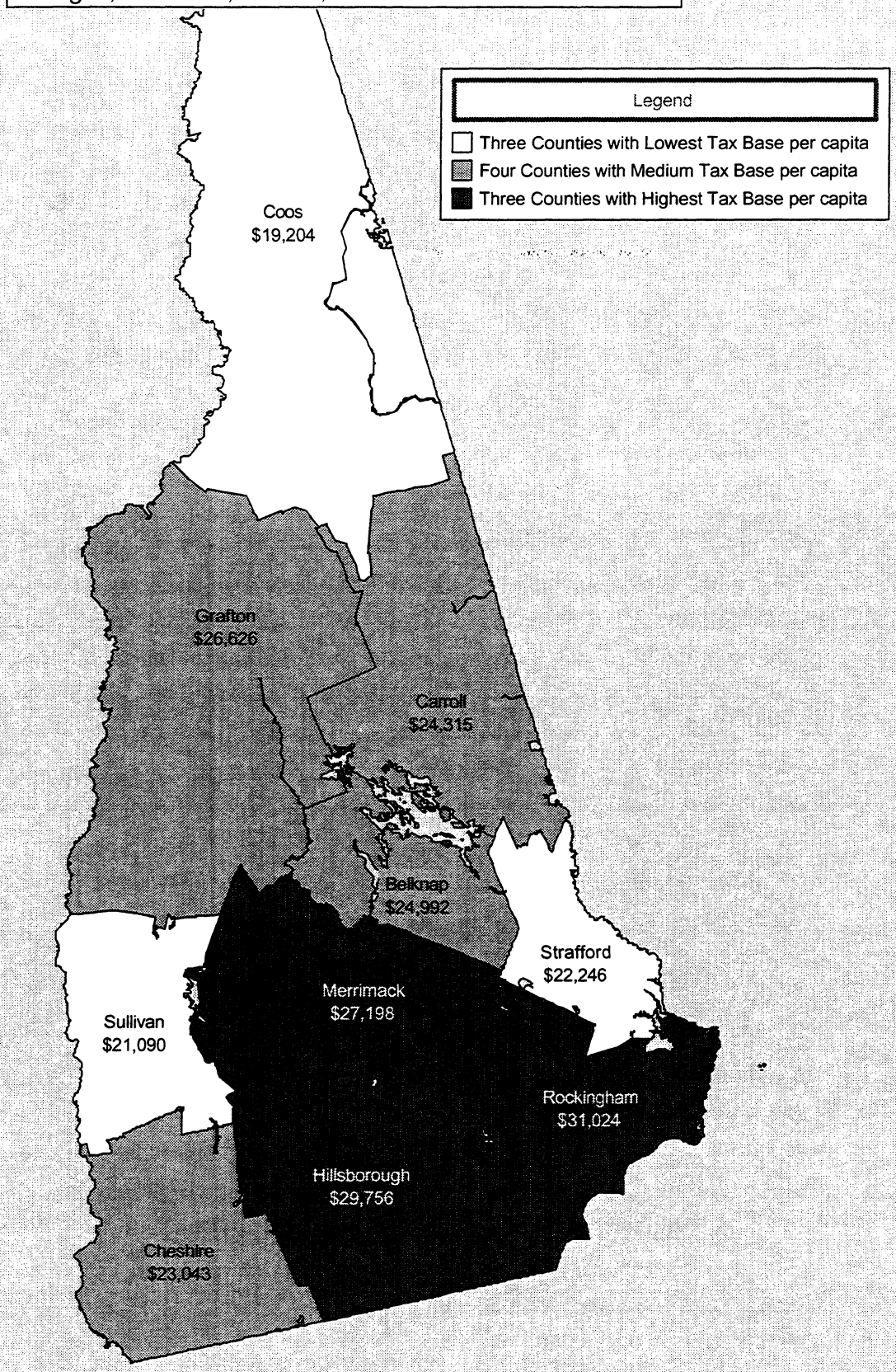
[18] National Research Council. *Pathological Gambling: A critical review.* April, 1999.

[19] Borg, Mary O., Paul M. Mason, and Stephen L. Shapiro. *The Incidence of Taxes on Casino Gambling: Exploiting the tired and the poor.* American Journal of Economics and Sociology. 50. No.3. July, 1991.

Map 1:
Core Personal Income** Tax Base per capita of Residents by County, 1998

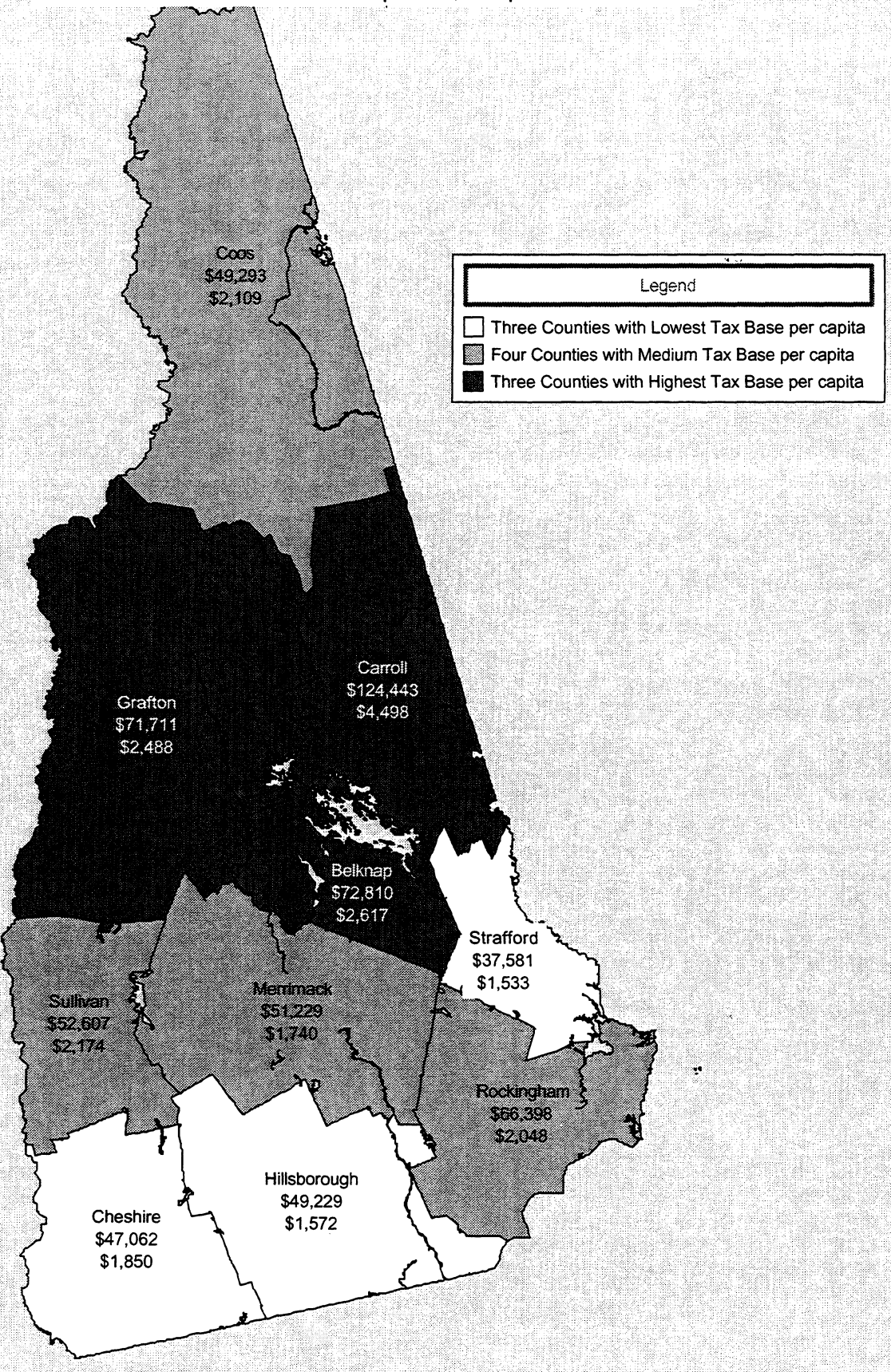
**Wages, Dividends, Interest, and Rental Income of Residents



Source: U.S. Department of Commerce and Bureau of Economic Analysis

Map 2: Taxable Property Tax Base by County, 1999

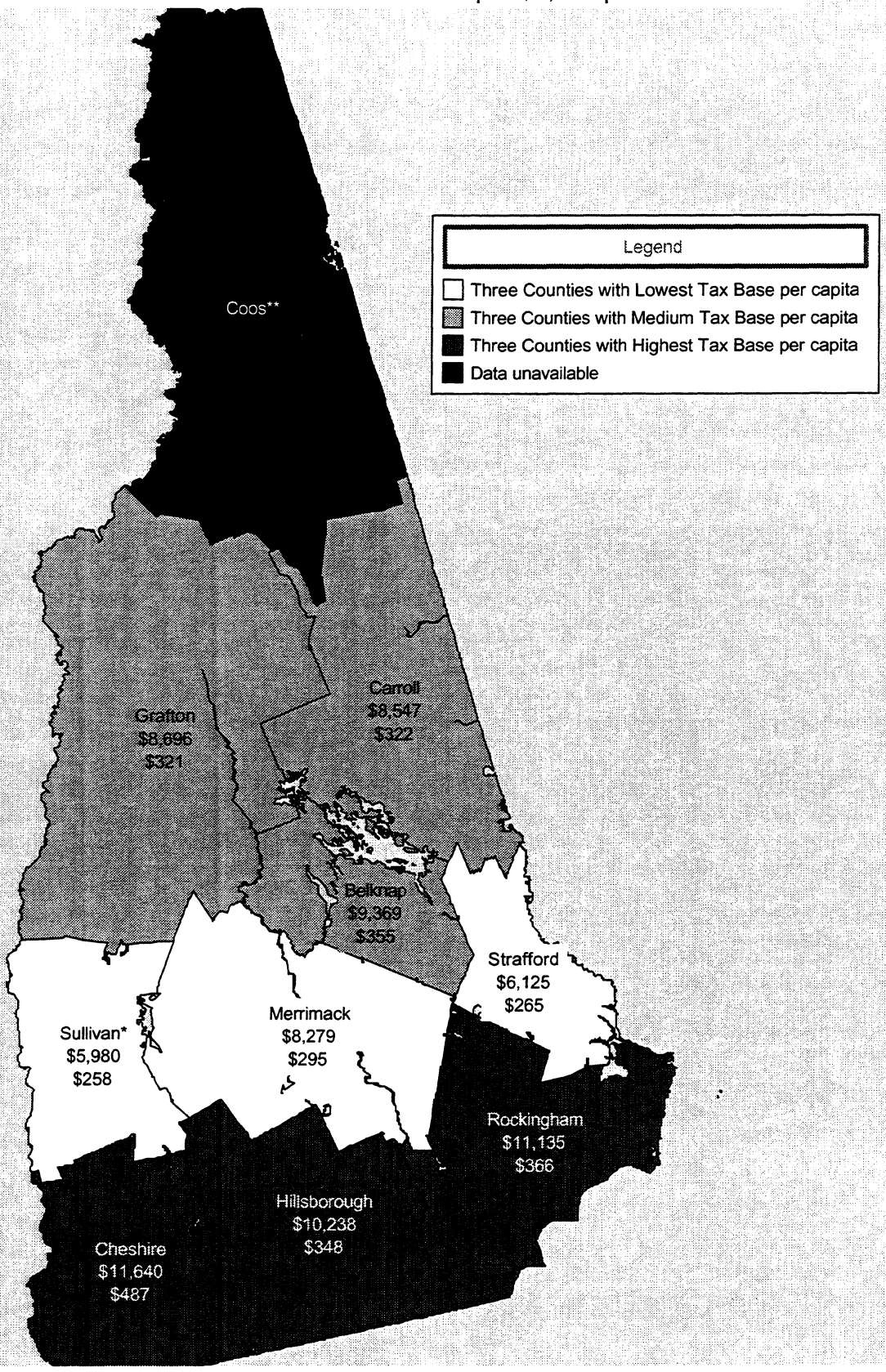
Top number: Net Valuation per capita
Bottom number: Net Valuation per $1,000 personal income



Source: State of N.H. Department of Revenue Administration and Bureau of Economic Analysis

Map 3: Narrow-Based Sales Tax Base by County, 1997

Top number: Narrow-Based Sales Tax Base per capita
Bottom number: Narrow-Based Sales Tax Base per $1,000 personal income

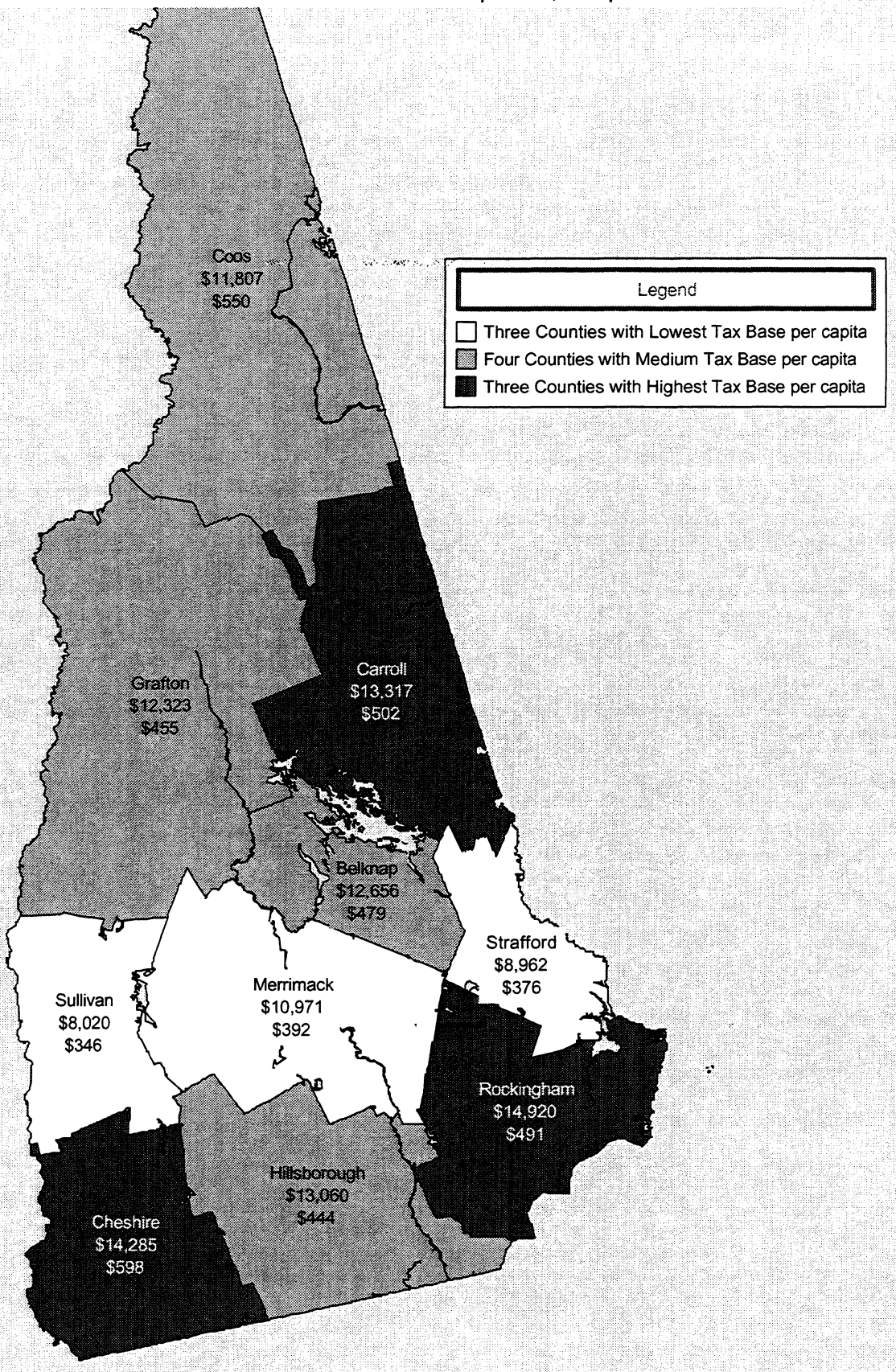


* Sullivan County does not include sales from specialty food stores because it was unavailable.
** Coos County's Narrow-Based Sales Tax Base could not be calculated because the U.S. Census withheld data on food and beverage sales.

Source: U.S. Census Bureau and Bureau of Economic Analysis

Map 4: Intermediate-Based Sales Tax Base by County, 1997

Top number: Intermediate-Based Sales Tax Base per capita
Bottom number: Intermedaite-Based Sales Tax Base per $1,000 personal income



Source: U.S. Census Bureau and Bureau of Economic Analysis