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The Unintended Consequences of Public Policy Choices: The Connecticut River Valley Economy as a Case Study

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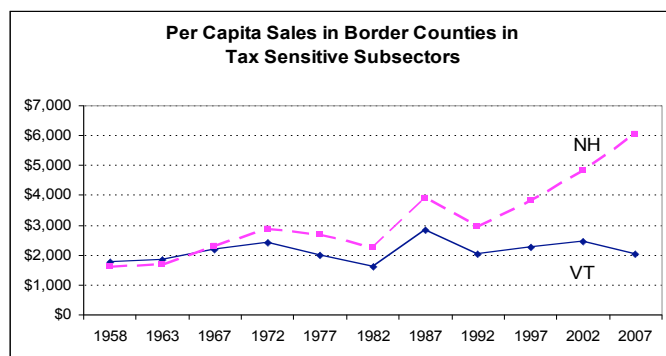
Executive Summary

This study analyzes the long term economic impacts of public policy choices made by Vermont over the past four decades by focusing on retailing in the Vermont and New Hampshire counties bordering the Connecticut River. It concludes that Vermont's sales tax has dramatically changed the pattern of retailing and the location of retail activity in the counties that border the Connecticut River, leading to a significant loss of the retail market in the Vermont border counties.

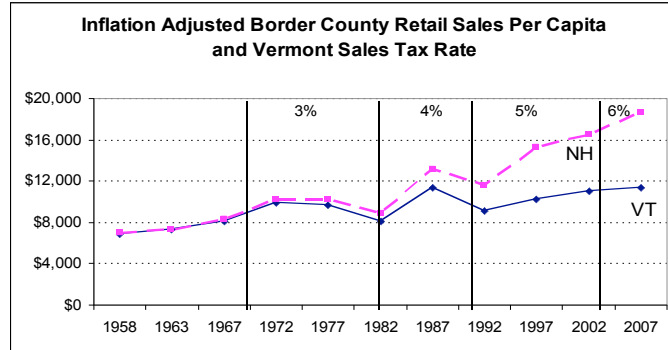
Along with the sales tax, Vermont's bottle deposit law and Act 250 have contributed to a hollowing out of Vermont retailing along its border with New Hampshire. All of these policies may have been introduced for worthwhile purposes. But they had a major unanticipated consequence—essentially destroying what was once a thriving retail sector in Vermont's Connecticut River Valley.

The major findings of the study are:

- If the level of retail sales per person had remained identical in the two border areas, which it was in the years before Vermont implemented its sales tax, Vermont's border communities would have had \$540 million more in retail sales in 2007 and 3,000 more retail jobs. This would have contributed to healthier, more vibrant, communities and downtowns.
- During the 1950s and 1960s per capita sales in stores selling goods subject to Vermont's sales tax were identical to the sales on the New Hampshire side of the river. By 2007, per capita sales on the New Hampshire side of the river were three times what they were in Vermont. And inflation-adjusted per capita sales in Vermont were actually less in 2007 than they were thirty years earlier, while they had doubled in New Hampshire.



- Including all retail stores—both those selling goods subject to the sales tax and those selling goods not subject to the tax—the impact of the sales tax is still dramatic. In the 1950s and 1960s, aggregate per capita retail activity was identical on both sides of the river. By 2007, per capita retail sales in New Hampshire’s border counties were \$18,000 compared to only \$11,000 on the Vermont side of the river. Between 1967, just before Vermont implemented its sales tax, and 2007, Vermont’s per capita sales rose by 24%. In New Hampshire’s border counties, per capita sales more than doubled.



- The economic damage imposed by the sales tax continues to worsen. In 2002, total per capita retail sales on the New Hampshire side of the Connecticut River were \$18,809—\$7,200 more than on the Vermont side. The latest U.S. Census report shows that in 2007, New Hampshire’s sales rose by nearly \$2,000 per person, while Vermont’s increase was only \$1,000. So over the past five years, the per capita sales gap has widened from \$7,200 to \$8,200.
- The major north-south highway in the region, I-91, is located on the Vermont side of the river. Interstate highways tend to attract retail activity, but even the presence of an interstate highway has not been sufficient to overcome the negative effects of Vermont’s public policies on retail activity.
- The policies that Vermont enacted forty years ago, although designed with specific goals in mind, have had the unintended consequence of inflicting significant harm to the retail sector and to Vermont communities located along the Connecticut River.

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I. Introduction

The Connecticut River forms the 170 mile long boundary between Vermont and New Hampshire. As a relatively minor geographical barrier, the river should not, in and of itself, be a reason for significant economic differences between the two states. The river is crossed by numerous bridges, making for easy travel and commerce. Yet, as this study will show, the Connecticut River is a geographic feature that now separates two very different economic environments. The political dividing line between Vermont and New Hampshire shows the unintended consequence of policy choices made by Vermonters over the past forty years.

This study focuses on the retailing sector of the Connecticut River Valley economy, those counties that border the Connecticut River. In Vermont, they are Essex, Caledonia, Orange, Windsor, and Windham Counties and in New Hampshire, they are Coos, Grafton, Cheshire, and Sullivan Counties.¹ The focus is on the retail sector for several reasons. One is that there is a major difference in the fiscal environments in the two states' retail sectors. Vermont levies a retail sales tax while New Hampshire has no sales tax. The second is that Vermont has a five cent bottle deposit law and New Hampshire does not. This affects one specific part of the retail sector, those stores that sell beer and soft drinks. Finally, and to a lesser extent, Vermont's development control law, Act 250, influences the cost of construction of new retail space and the ability to construct that space. While Act 250 does not specifically target the retail sector, retailing may be affected by Act 250's regulatory requirements and cost.

The study's main finding is that Vermont's policies have had a significantly negative effect on retailing in the Connecticut River Valley. Forty years ago, retailing activity was evenly balanced along both sides of the river and reflected the underlying location of the area's population. People living on both sides of the river had access to a diverse pattern of retailers because retailers, in order to earn profits, had to supply the goods that people wanted to buy in locations where they wanted to buy them.

Today the pattern of retailing is highly unbalanced, with a disproportionately large share of retail activity concentrated on the New Hampshire side of the river and a much smaller share on the Vermont side. The single most important explanation for this divergence is that Vermont has enacted policies that give people an incentive to shop on the New Hampshire side of the river and that lead retailers to locate on the New Hampshire side. The most significant policy is that Vermont levies a sales tax on retail activity while New Hampshire does not, although the impact of Vermont's bottle bill and Act 250 cannot be

¹See the Appendix for county maps of both states. In this study, the geographic terms Vermont and New Hampshire will generally be referring to the border counties of the two states.

ruled out as influencing the differential level of retailing activity in the two border regions.

Just as important, the difference in retail activity is greater than one would expect given differences in relative incomes and populations in the two border areas. Indeed, one would expect retailing to have grown faster on the Vermont side of the Connecticut River since the major north-south interstate highway in the Valley, I-91, is located on the Vermont side of the river. In most areas of the United States, commercial activity tends to be located near interstate highways and the presence of an interstate highway has been shown to increase retail earnings in the counties through which it passes and reduce it in nearby counties.² This is the reverse what has happened in the Connecticut River Valley.

² Amitabh Chandra and Eric Thompson, "Does Public Infrastructure Affect Economic Activity? Evidence From the Rural Interstate Highway System," *Regional Science and Urban Economics*, Vol 30, #4, July 2000, pp. 457-490.

II. The Location of Retail Activity: Taxes and Regulations

A sales tax raises the price of goods to consumers and reduces the revenues going to sellers. When one political jurisdiction, such as Vermont, has a sales tax and an adjoining jurisdiction, New Hampshire, does not, two outcomes can potentially result. One is that the total price paid by consumers will be higher in the area with the tax compared to the area without the sales tax. The other is the prediction of economic theory that, holding all other things constant, consumers will purchase identical goods where they are cheaper.³ Other things are not always constant, of course. Other factors such as location, quality, the ease with which customers can gain access to the cheaper goods, and service quality all play a role. But a higher price, caused by higher sales taxes, will shift some amount of consumer activity to the lower-taxed jurisdiction. The easier it is for consumers to shop in the lower-taxed area, the larger the impact will be.⁴ If consumers find it difficult to shop elsewhere (for example where transportation costs are high, or where border regulations prevent people from taking goods across borders) the impact will be smaller.

The second possibility is that to the extent that they are able to, firms located in the higher-taxed locality will reduce their prices so that the total price to the consumer will be the same in the two localities. Firms will do this if they want to maintain their market share in the face of competition from stores in the non-taxed area. But this means that their profits will be lower and it may mean that the business is no longer financially attractive for the owner. In the long run, the firm will go out of business.

In either of the above two cases, firms in the non-taxed jurisdiction will have a competitive advantage over firms in the higher taxed jurisdiction. In the battle for consumer dollars, the firms in the non-taxed jurisdiction will have the upper hand.⁵

³ The rise of internet shopping since the late 1990s has added another dimension to this. SEE

⁴ All empirical studies have supported this theoretical point. Relevant studies and analysis include Mehmet S. Tosun and Mark L. Skidmore, "Cross-Border Shopping and the Sales Tax: An Examination of Food Purchases in West Virginia," *The B.E. Journal of Economic Analysis and Policy*, Vol 7, No. 1, 2007, Michael Nelson, "Using Excise Taxes to Finance State Government: Do Neighboring State Taxation Policy and Cross-Border Markets Matter?", *Journal of Regional Science*, Vol. 42 No. 4, 2002, Steven Ferris, "The Determinants of Cross Border Shopping: Implications for Tax Revenues and Institutional Change," *National Tax Journal*, Vol 53, No 4 (2000), pp. 801-824, William F. Fox, "Tax Structure and the Location of Economic Activity Along State Borders", *National Tax Journal*, Vol 39, No 4 (1986), pp. 387-401; Michael Walsh and Jonathan Jones, "More Evidence on the 'Border Tax' Effect: The Case of West Virginia, 1979-84," *National Tax Journal*, Vol 41 No 2 (1988), pp. 261-265; Ronald Fisher, *State and Local Public Finance*, Scott, Foresman and Company (1996), pp.301-323, 379-411.

⁵ For the standard textbook explanation of how a sales tax will raise prices to consumers and lower the revenue to the producer, see R. Glenn Hubbard and Anthony Patrick O'Brien, *Microeconomics* (2006), or any microeconomics textbook.

As consumers shift their purchasing patterns, basic theory predicts that firms in the higher-taxed political jurisdiction (in this case, the Vermont side of the river) will lose sales and firms in the lower-taxed jurisdiction (those on the New Hampshire side of the river) will gain sales. Over a longer period of time, firms will migrate away from the higher-taxed jurisdiction, where prices (including the sales tax) to consumers are higher and profits (also including the impact of the sales tax) to the retailer are lower, and move into the lower-taxed jurisdiction where prices are lower and profits are higher.⁶

This paper investigates the extent to which this has occurred along the Connecticut River of Vermont and New Hampshire, with a focus on the retail sector which is directly affected by the Vermont sales and use tax. Figure 1 shows the history of the sales tax rate in Vermont. Vermont's sales tax was enacted at a three percent rate by the 1969 legislature and took effect on July 1, 1969. It remained at that rate until a state revenue shortfall caused by the recessions of the early 1980s prompted a one point hike in the

History of the Vermont Sales and Use Tax	
<u>Rate</u>	<u>Effective Date</u>
3%	July 1, 1969
4%	July 1, 1982
5%	June 1, 1991
6%	October 1, 2003

Source: *Fiscal Facts*, Vermont Joint Fiscal Office

rate, to four percent effective July 1, 1982. The rate was increased to five percent during the 1989-91 recession, an increase that was supposed to be temporary but was made permanent in 1995. Most recently, the rate was raised to six percent on October 1, 2003, with the revenue dedicated to lowering property tax rates.⁷

Figure 1

Over that entire period, New Hampshire continued its policy of having no broad based retail sales tax. Thus, until 1969, there was no differential in the sales tax rate in the border region. The initial wedge of three percentage points between the two states' tax rates in 1969 rose to a six percentage point gap in 2003. Since there are only five states in the nation with no sales tax, the gap between the sales tax rates in New Hampshire and its neighboring states, including Vermont, is among the highest in the nation.⁸

⁶What this means in reality is that more growth will occur in the lower-taxed area and less in the higher-taxed area.

⁷ Other changes included a 1997 law that allowed towns and cities to levy a local option sales tax of one percentage point in addition to the state sales tax in towns and cities that voted for one. That makes the total sales tax in those towns seven percent. As of 2010 no town or city in the counties along the Connecticut River imposes a local option sales tax. Also, the sales tax on clothing costing under \$110 was eliminated on December 1, 1999 and on shoes on July 1 2001.

⁸ The other states without a sales tax are Alaska, Delaware, Montana, and Oregon.

The second factor that may have affected the location of retailing is Vermont's bottle deposit law, which affects retailers selling soda or beer in cans and bottles. Vermont's bottle bill, which took effect in 1971, requires a five cent deposit on any soda or beer can or bottle. The law was an early measure designed to reduce solid waste and especially roadside littering of cans and bottles. It is now also viewed as a recycling measure, although most Vermont communities have recycling programs so there are now two parallel recycling measures in place in Vermont for glass bottles and cans.

Although consumers get their five cent deposit back when they return the bottles or cans to a retailer, the bottle bill does have economic costs and consequences. The bottle bill imposes additional costs of time and money on consumers, retailers and wholesalers. Consumers have to rinse and store the empty containers and then return them. This takes time, and since time is a scarce resource, it is a cost to consumers. Beverage retailers have to devote additional space and labor to sorting and storing the empty containers. That space, and that labor time, could be used for something else and hence is a cost to retailers. Beverage distributors have to carry the empty containers back to their warehouse, which means it takes extra time for each delivery truck to make a day's delivery. This means extra costs to the beverage distributors. Finally, beverage distributors reimburse retailers between three-and-a-half and four cents per container in addition to the five cent deposit. These higher costs must be absorbed by someone, either business owners in the form of lower profits, employees in the form of lower wages, or consumers in the form of higher prices. These serve to make soda and beer more expensive to purchase in Vermont than in New Hampshire.

A third factor that may influence retailing activity in the Vermont border counties is Vermont's development control law, Act 250, which was passed in 1969.⁹ Act 250 has been criticized for adding to the cost of construction projects because of time-consuming delays in obtaining permits. Permits may also lead to increased costs of building and environmental modifications that may be required under the Act. Act 250 also leads to a more uncertain regulatory outcome for developers of retail buildings. Act 250 could therefore give an incentive to retailers to locate in New Hampshire's border counties rather than in Vermont's because of the costs or uncertainty of building in Vermont. As this study shows, New Hampshire has indeed become the preferred location for retailing in the Connecticut River Valley, despite the presence of the region's major north/south interstate highway, I-91, on the Vermont side of the river.

The common thread linking all three of these public policies, all of which were enacted between 1969 and 1971, is that they increase the costs of doing business in Vermont and hence to the cost of purchasing goods affected by these policies, compared to New Hampshire. Businesses selling to residents of the Valley can avoid the higher costs in

⁹ For a general overview of Act 250, see Cindy Corlett Argentine, *Vermont Act 250 Handbook*, Putney Press, 1998.

Vermont by locating in neighboring New Hampshire. Similarly, Vermont consumers can avoid the higher prices, costs, and taxes by making their purchases in New Hampshire, where costs of goods will be lower.¹⁰ This study investigates the extent to which this has occurred over the past four decades.

¹⁰ Under Vermont state law, consumers are required to pay the sales and use tax on all goods purchased out of state and used in Vermont if those goods would have been subject to Vermont's sales tax if they were purchased in Vermont. In practice, few Vermont residents pay the use tax on goods purchased out of state. The Vermont Tax Department reports that in 2008 25,000 taxpayers reported out-of-state purchases and paid \$820,000 in use taxes. (Source: unpublished data provided by the Vermont Tax Department.)

III. Background Issues

A. Population

The New Hampshire counties have always had a larger population than their Vermont counterparts but the growth rates in the two regions have been fairly similar, especially between 1960 and 2000. In 1950, the New Hampshire border counties had a population

	<u>VT</u>	<u>Growth</u>	<u>NH</u>	<u>Growth</u>
1950	117.0		149.1	
1960	117.1	0.1%	155.7	4.4%
1970	123.9	5.8%	173.0	11.1%
1980	143.1	15.5%	199.3	15.2%
1990	156.6	9.4%	218.9	9.8%
2000	166.0	6.1%	229.5	4.8%
2009	165.6	-0.2%	237.5	4.9%

Population in 1,000s
Source: U.S. Census Bureau

of 149,100, twenty seven percent more than the 117,000 in the Vermont border counties. In 1960, the New Hampshire border counties had 155,700 residents while Vermont’s border county population was virtually unchanged. In the 1970s, 1980s, and 1990s the growth rates in the two regions were similar. Between 1960 and 2000, Vermont’s border population grew by 41% and New Hampshire’s by 47%.

That pattern of similar growth has recently changed. The Census Bureau estimates that between 2000 and 2009, Vermont’s border county population exhibited no growth while New Hampshire’s grew as fast as it had in the 1990s.

B. Income

Population growth does not necessarily correlate with economic growth. One important indicator of economic well-being is the real, or inflation-adjusted, per capita income earned by residents of the region. Per capita income is simply the total income earned by residents divided by the total population.¹¹ It is a summary statistic that is useful for comparing different areas or for examining trends in income growth over time.

¹¹Census data allow us to compare county populations in 1950 and 1960 but county income data were not calculated by the U.S. Commerce Department until 1969 so we cannot compare the border county per capita income levels pre-1969.

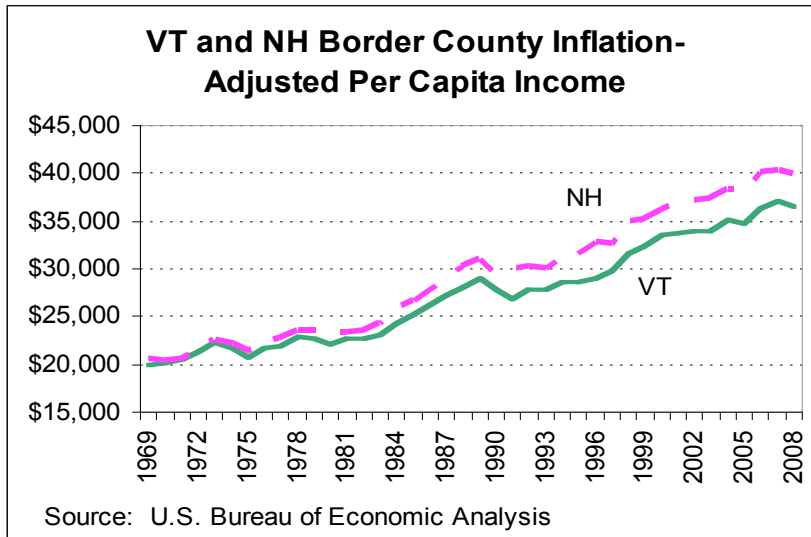


Figure 2

Figure 2 shows that real per capita income on the Vermont side of the river has lagged the growth rate on the New Hampshire side. In the early 1970s, the two regions had similar incomes, but between the early 1970s and 1990, New Hampshire’s income grew faster than Vermont’s. Since 1990 the gap between the two regions has remained stable, with per capita income in Vermont’s border counties about eight percent below New Hampshire’s.

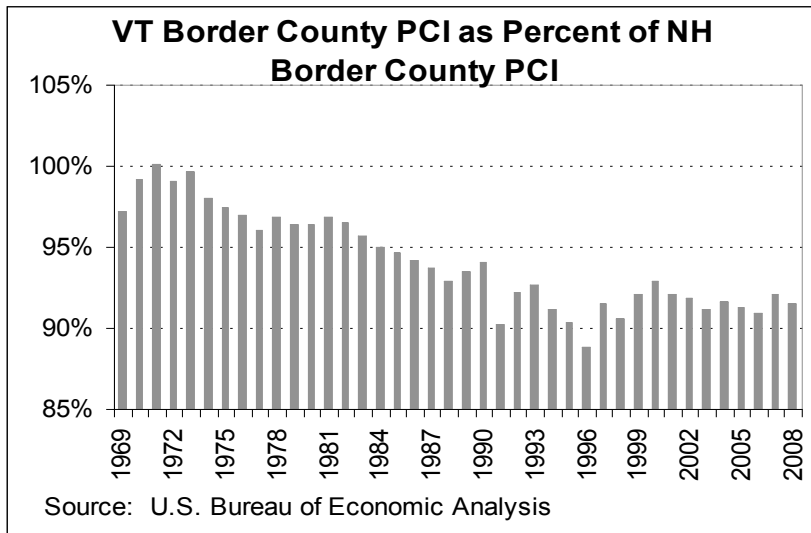


Figure 3

IV. Retailing

The sections above have shown that both population growth and aggregate economic activity, as measured by per capita income, have grown faster along the New Hampshire side of the river than along the Vermont side. This section focuses on one component of that differential in economic activity, that of retailing.¹² A higher level of retailing activity can be both a cause and a consequence of greater economic growth. More retailing activity can be caused by a higher level of income, which promotes spending. In addition, retailing can itself lead to more jobs and growth if retailing helps drive economic growth.

The level of retailing in an area is determined by several factors. One is the ability of consumers to purchase goods and services sold by retailers, determined in part by consumer income levels. A second is the cost of those goods and services. Consumers, faced with limited incomes, have to make choices when they shop and, all other things being equal, they will choose to purchase the lower-priced of two identical goods. Of course, other things are not always equal. Product quality, service, location of the retailer, the time needed to get to the store, and a host of other factors will help determine people's retail shopping decisions. A third factor is therefore simply the availability of goods in a given area. For example, if there are no bookstores in one town, anyone who wants to buy books will have to buy them in another town or through a catalogue or online.

Higher retail prices caused by higher sales tax rates will give consumers an incentive to purchase goods in a political jurisdiction with the lower prices, assuming consumers can make that change at a relatively low cost in terms of time and convenience.¹³ As consumer behavior changes in response to price signals, business location decisions will follow. This simple theory predicts that businesses (especially retail establishments) would, over time, migrate into lower cost political jurisdictions if consumers increasingly purchase goods in the lower cost area. Business owners, facing the loss of customers, could either go out of business or move their businesses to the lower-cost (that is, sales-tax-free) area. To use the example given in the paragraph above, a consumer will buy a book where it is cheaper. If that is in a neighboring community with lower taxes, then eventually the bookstore in the community levying the sales tax will close as its customers purchase books in the cheaper, no-sales-tax location.

¹² We define retailing here as all subsectors within North American Industry Classification System (NAICS) sectors 44-45 excluding the miscellaneous store retailer (453) and nonstore retailer (454) subsectors. We also include NAICS sector 722, food services and drinking places (restaurants and bars) as part of retailing.

¹³ The development of the internet since the mid 1990s has given consumers an additional choice. Most internet retailers do not charge sales taxes at the point of sale, although consumers often have to pay shipping costs.

If some businesses do not close and remain in the higher-taxed community, they will lose sales to competitors who locate in the lower cost community. Or, as noted, they may eventually go out of business as their sales decline. Businesses that remain in the high tax jurisdiction will have higher prices to consumers (caused by the higher sales tax) or they would have to offer some sort of additional service—such as convenience or proximity to their customers—that compensate consumers for the higher prices, or they may be willing to accept a lower profit margin than their competitors by charging lower prices to compensate for the higher tax.

The extent to which this has occurred in the border region of Vermont and New Hampshire can be examined by analyzing data on retailing in the two areas. If the hypothesis that sales taxes and other public policy choices have caused firms to move to the lowest cost area for doing business is true, we should see relatively more retail activity in the region with lower prices and costs (New Hampshire border counties) and less activity in the region with higher prices and costs (Vermont border counties). Numerous economic studies focusing on different geographic areas support this theoretical view.¹⁴

The data used in this report are from the Census of Retail Trade (CRT), one of the many economic censuses that are undertaken by the U.S. Census Bureau. The CRT provides detailed information on retail trade in each county in the United States, including number of establishments by type of business, number of employees, and annual sales data. The major limitation of the CRT is that it is only taken every five years. The most recent CRT was undertaken in 2007 and the results were released in the spring of 2010. This study uses CRT data from the censuses taken between 1958 and 2007.

A. Total Retail Sales

If Vermont's sales tax has had an impact on the level of retail sales in the border counties of Vermont and New Hampshire, the data should show a shift sometime after 1969, the year that Vermont instituted its sales tax. The first Census of Retail Trade taken after the sales tax went into effect was in 1972, so that would be the earliest we would expect to see an impact. This section analyzes whether the implementation of the sales tax had any impact since 1972.¹⁵

Figure 4 shows total inflation-adjusted retail sales for the border counties of the two states and the growth rate between each of the CRT years. Over the entire 1958 through

¹⁴ See the studies cited in footnote 4.

¹⁵ All dollar values in this study are expressed in constant 2009 dollars.

2007 period, inflation-adjusted retail sales in Vermont's border counties grew at an average annual rate of 1.8% per year. In New Hampshire's border counties, total retail sales grew by 2.6% percent per year, more than 50% faster than in Vermont. Over the entire period, Vermont's increase was 136%, compared to a 251% increase on the New Hampshire side of the river.

From the late 1950s to the mid 1960s retail sales growth was almost identical on both sides of the river. This is to be expected, given that there was no sales tax differential during those years and, at least in 1969, per capita incomes in the two regions were nearly identical. Then from 1967 to 1972, retail sales growth on the Vermont side of the river was significantly higher than on the New Hampshire side despite the fact that all three major Vermont policies—the sales tax, bottle deposit law, and Act 250—were all enacted during that period. But that was to be the only time period when retail growth on the Vermont side of the river eclipsed that of the New Hampshire counties. After the 1972 Census, retail growth was always higher in the New Hampshire border counties than in the Vermont border counties.

Border County Total Retail Sales				
	VT Total	5-Year Growth	NH Total	5-Year Growth
1958	\$802.4		\$1,122.7	
1963	\$879.3	9.6%	\$1,231.4	9.7%
1967	\$985.4	12.1%	\$1,447.5	17.5%
1972	\$1,281.1	30.0%	\$1,792.7	23.9%
1977	\$1,334.6	4.2%	\$1,968.9	9.8%
1982	\$1,157.8	-13.2%	\$1,820.7	-7.5%
1987	\$1,674.9	44.7%	\$2,831.5	55.5%
1992	\$1,363.1	-18.6%	\$2,442.8	-13.7%
1997	\$1,447.4	8.4%	\$2,756.7	12.8%
2002	\$1,756.6	18.9%	\$3,695.5	34.1%
2007	\$1,889.9	7.6%	\$4,003.5	8.3%

\$ millions in real 2009 dollars
Source: U.S. Census Bureau, Census of Retail Trade

Figure 4

The periods of rapid retail growth, such as 1982-87 and 1997-2002, occurred during periods of healthy economic growth. The mid 1980s was a boom period for all of New England, and it is not surprising that retail sales expanded dramatically on both sides of the river. But the growth on the New Hampshire side was twenty percent faster than on the Vermont side. The 1997-2002 years include the period when the internet began to be important and the height of the technology boom, and also the recession and slow growth

of 2001 and 2002. Over the entire 1997-2002 period retail sales growth on the New Hampshire side of the river was more than half again as fast as on the Vermont side.

The two periods of declining retail sales growth correspond to recessionary periods in the U.S. and northern New England economies. The rapid rise in oil prices in the late 1970s disproportionately affected New England because of the region's heavy reliance on fuel oil for its manufacturing and for electricity generation. That downturn caused retail sales to drop on both sides of the river in the late 1970s and early 1980s. The boom of the mid 1980s, fed in large part by construction, ended in 1989-90 and led to a very significant regional downturn. Not surprisingly, retail sales fell dramatically between 1987 and 1992. But the declines in both time periods were worse on the Vermont side of the river than on the New Hampshire side.

During good economic times, retailers on the New Hampshire side of the river experienced faster growth than did their Vermont counterparts. Residents of the Connecticut River Valley tended to shop more at New Hampshire stores. During bad economic times, shoppers deserted Vermont stores faster than they did on the New Hampshire side of the river as they strove to make ends meet under increased economic pressure. So Vermont stores experienced lower sales and went out of business compared to what was going on on the other side of the river.

What can we say about retail sales growth in different time periods? Between 1958 and 1967, neither state had a sales tax. Retail sales on both sides of the river grew at similar rates: 23% in Vermont and 29% in New Hampshire. From 1972, just after Vermont implemented its sales tax, to 2007, retail sales grew by 48% on the Vermont side of the river and by more than twice that, 123%, on the New Hampshire side.

Finally, although inflation-adjusted retail sales have grown on both sides of the Connecticut River, retail sales in 2007 on the Vermont side of the river are only slightly higher than they were two decades earlier in 1987. Over 20 year period ending in 2007, retail sales in the Vermont border counties have grown by only 13% while sales in the New Hampshire border counties have increased by 41%.

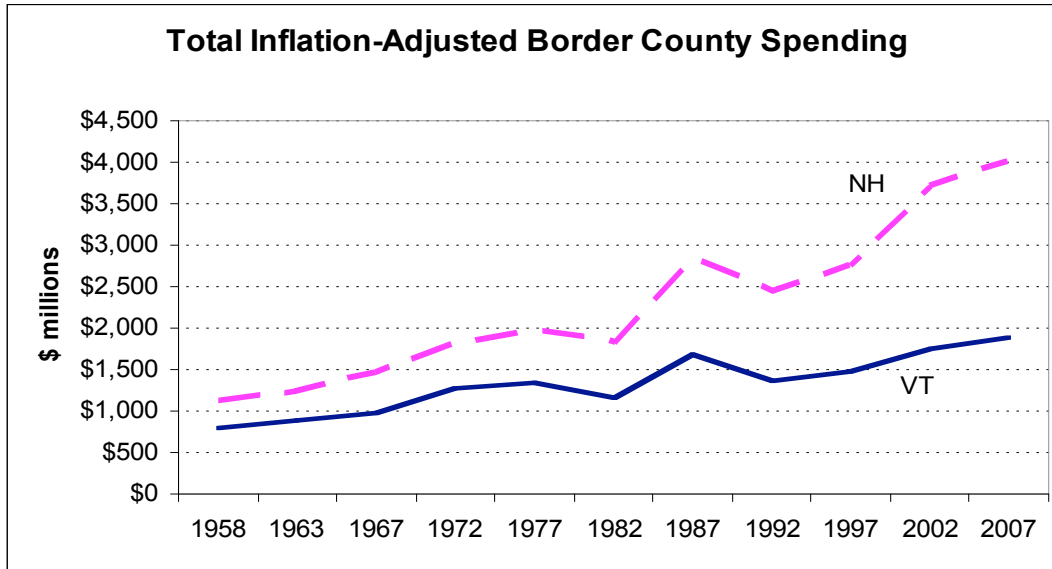


Figure 5

B. Sales Per Capita

We would expect the overall level of retail activity in New Hampshire's border counties to be higher than in Vermont simply because the New Hampshire counties' population is higher. Different population levels may explain different levels of aggregate retail sales but they do not explain differential growth rates. In order to investigate this in more detail, and to control for the effects of population, we examine retail sales per capita, adjusted for inflation.

Figure 6 shows the trend in real per capita retail sales in the border counties of the two states since 1958. Over the entire 1958 to 2007 period, real sales per person in the Vermont border counties grew from about \$6,900 in 1958 to \$11,300 in 2007. On the New Hampshire side of the river, per capita sales were virtually identical to Vermont's in 1958 but had grown to almost \$19,000 by 2007.

During the years that neither state had a sales tax, per capita sales were identical on both sides of the border. Vermont implemented its retail sales tax in 1969, but the 1972 Census of Retail trade shows no evidence of any impact of the tax on retail sales along the border. Per capita sales on both sides of the river had been nearly identical in the 1950s and 1960s and remained so in the early 1970s. Not only did per capita sales

remain identical in the late 1970s and early 1980s, but they declined on both sides of the river during the recessionary years of the late 1970s and early 1980s.

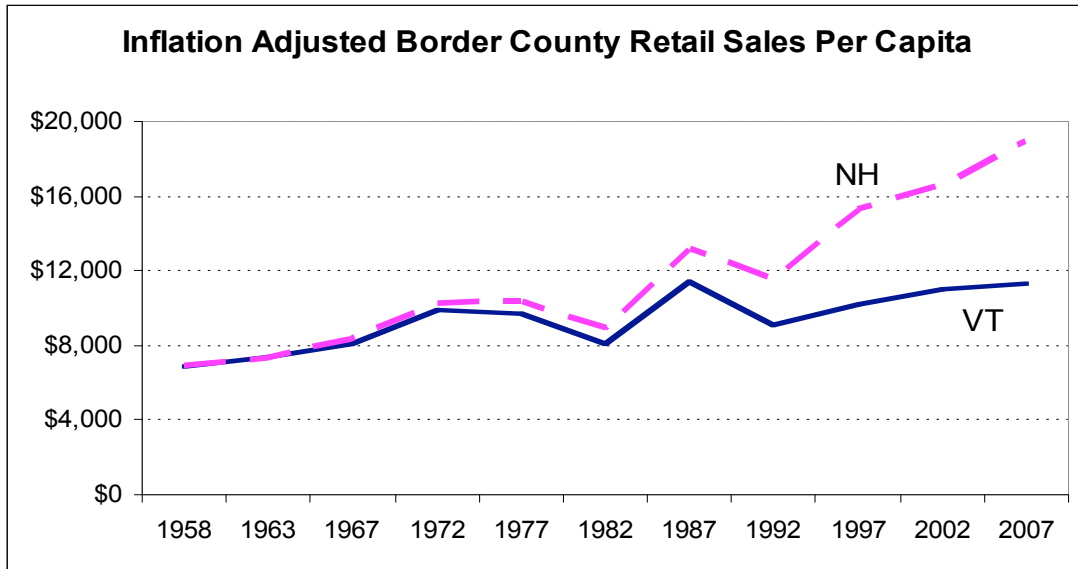


Figure 6

The mid 1980s were a very healthy period for the New England economy as it restructured its economic base in response to the energy shocks of the previous decade. The 1980s also saw a regional housing and construction boom that lasted from 1985 through 1989. The good economic times led to a recovery in retail spending on both sides of the river. But by 1987 a gap between the two regions that had been small now started to widen, as Figure 7 clearly shows. Figure 7 shows the same data as does Figure 6, but it shows spending on the Vermont counties as a percentage of the New Hampshire counties.

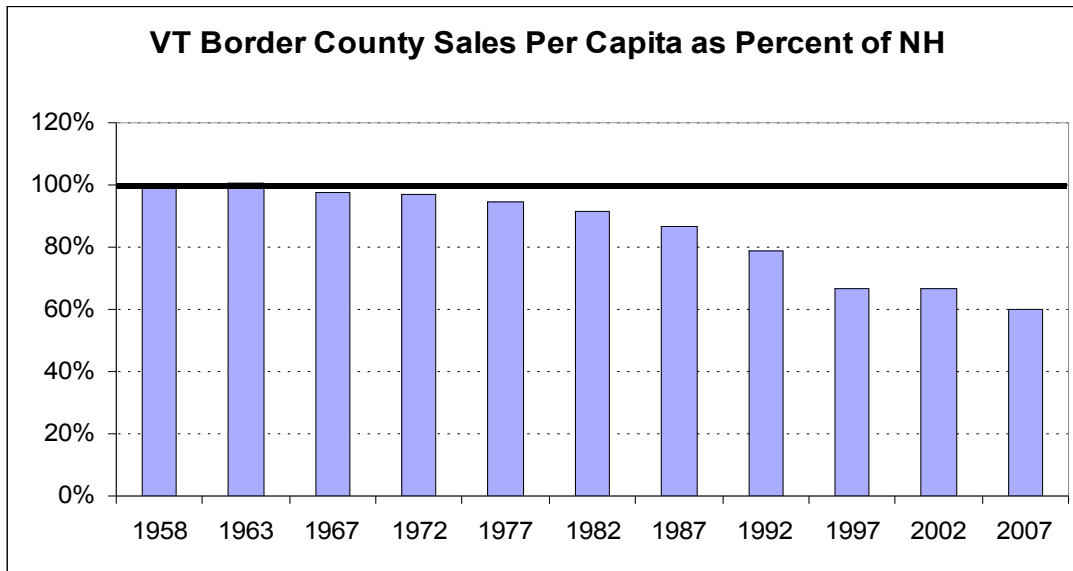


Figure 7

In 1977, Vermont border county sales per person were still very close to New Hampshire's border counties, at 95% of the New Hampshire sales per person. Ten years later, New Hampshire's border county sales had grown faster than Vermont's, and per capita sales in Vermont were only 87% of New Hampshire's. Sales on both sides of the river fell during the poor economic times of the late 1980s and early 1990s — the worst New England recession since the Great Depression. But per capita sales in the Vermont counties fell more sharply than in the New Hampshire counties and by 1992, Vermont's sales were only 78% of New Hampshire's.

The economy recovered from that downturn, and the recovery turned into a booming period for New England and the nation in the 1990s as the changing telecommunications technology and the diffusion of the internet propelled economic activity. The economy then experienced a recession in 2001 and a period of sluggish growth and declining employment in the following two years. Retail sales grew on both sides of the river during the 1990s and continued to grow in both Vermont and New Hampshire border counties even during the mild downturn of the early 2000s. But on the Vermont side, growth was slow and even by 2007 inflation-adjusted per capita sales had not yet returned to their peak level of twenty years earlier.

The situation was very different on the New Hampshire side of the river. Sales grew rapidly in New Hampshire's counties in the first decade of the new century compared to sluggish growth in Vermont. As Figure 7 shows, per capita sales on the Vermont side fell to only sixty percent of the level of the New Hampshire counties by 2007. Thus, over

the forty year period that the Vermont sales tax has existed, per capita retail sales in Vermont's border counties have fallen from a level of parity with New Hampshire's border counties to a level where for every dollar spent per person in New Hampshire, only sixty cents is spent on the Vermont side of the Connecticut River.

C. Sales by Retail Subsector

The pattern of per capita sales discussed above is for the entire retailing sector. Within that sector different subsectors exhibit different trends. In this section we examine the trends in the retailing subsectors defined by the Census Bureau in order to determine the dynamics of growth within the retail subsectors of the two states' border regions.

We find that the impact of the sales tax was felt initially in those subsectors directly affected by the sales tax. In those subsectors that sell goods that are not subject to Vermont's sales tax, or where New Hampshire does tax the goods or services sold, per capita sales were similar in the two regions for fifteen years. Since the mid 1980s, however, a large and growing gap between the two border areas has appeared even in those retail subsectors where the Vermont sales tax did not apply.

For each of the retail subsectors discussed below, two figures are shown. The first shows the inflation-adjusted per capita sales in both border county areas from 1958 to 2007. The second shows the level of per capita sales in Vermont's border counties as a percentage of New Hampshire's border counties. Where per capita sales in the two regions are equal, the Vermont percentage is equal to 100. If Vermont's border counties had per capita sales 20 percent below New Hampshire's, then the Vermont percentage would be equal to 80. If Vermont's counties' per capita sales were 25 percent greater than sales in New Hampshire's border counties, the percentage would be equal to 125.

1. Building Materials

Building materials retailers include lumber yards, hardware stores, and lawn and garden supply stores. As Figure 8 shows, real per capita sales in both border regions grew steadily from 1958 through 1972, and then leveled off and declined from 1977 to 1982. Sales exploded between 1982 and 1987 because of the tremendous real estate and housing boom of that period. As more houses were built, demand for goods from building supply stores also increased. The real estate bust of the late 1980s and early 1990s was felt very strongly in the construction and building sectors of the economy and

sales exhibited a sharper decline in both regions than was true for retailing as a whole.

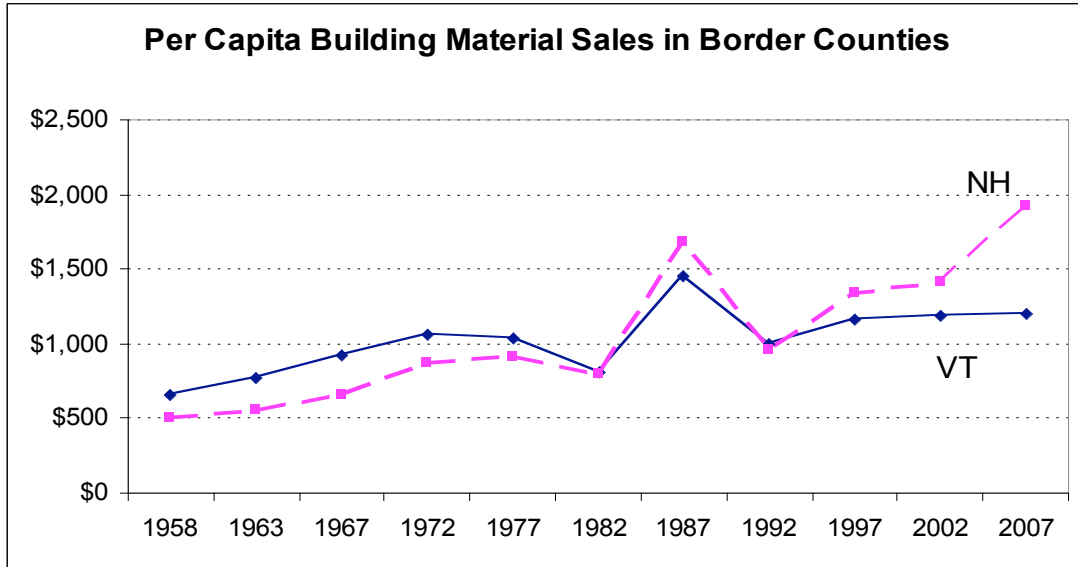


Figure 8

By 1992, per capita sales in both regions had fallen back to the level of the 1970s. As the economy recovered in the early 1990s and continued to expand for the remainder of the decade, per capita sales increased in both areas. But sales grew only modestly in Vermont in the 1990s, and then were essentially flat during the 2000s. By contrast, sales grew rapidly from 1992 through 2007 on the New Hampshire side of the river.

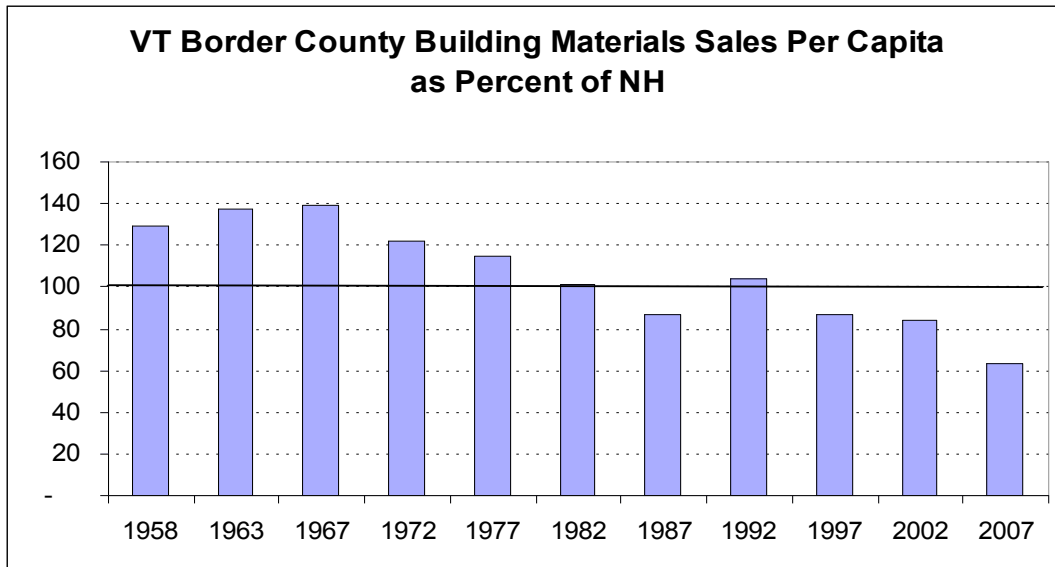


Figure 9

Figure 9 shows that the relationship between New Hampshire and Vermont building materials sales per capita is different than for total retailing. Whereas per capita sales were equal for the retailing aggregate in the late 1950s, per capita building material sales in Vermont were significantly higher than in New Hampshire's border counties from 1958 through 1977, although the gap began to narrow in the 1970s.

By 1982 per capita sales were identical in the two regions. Then, during the housing boom of the 1980s, New Hampshire's building sector sales expanded faster than in Vermont's border counties. In 1987 Vermont's border county per capita sales were fifteen percent lower than New Hampshire's. New Hampshire's rapid boom, however, gave way to an equally dramatic bust, as border county sales of building materials fell faster than sales in Vermont border counties between 1987 and 1992. But in the 1990s and 2000s, New Hampshire's growth exceeded Vermont's. Between 2002 and 2007, there was an especially large drop in Vermont's relative position, and by 2007 Vermont border county per capita sales were nearly forty percent below New Hampshire's.

One reason for this decline is to because of changes in the structure of retailing in this industry. Over the past two decades Home Depot and Lowes have become very successful competitors, opening numerous stores across the nation and within this region. There are now four Home Depots in the border area and two Lowes. All of these stores are located on the New Hampshire side of the Connecticut River Valley.

2. General Merchandise

General merchandise stores include department and variety stores and mass market retailers, which are some of the largest retail establishments measured by total sales. In recent years, the growth of Walmart, Target, Kohl's and similar stores has accentuated the growth in this sector, as consumers have taken advantage of their low prices and wide variety of well-known brand merchandise. Figures 10 and 11 show that per capita sales in Vermont's border counties were higher than in New Hampshire's in the late 1950s, but sales in New Hampshire were growing faster than in Vermont even before Vermont implemented its sales tax. Indeed, per capita sales in Vermont have been virtually unchanged for the past fifty years, while sales on the New Hampshire side of the river were nearly five times higher in 2007 than in the late 1950s.

The sales gap between New Hampshire and Vermont's border counties, already large in 1967, widened considerably in the 1970s and 1980s. Per capita sales fell in both regions during the difficult times between 1972 and 1982, but the decline in Vermont was steeper than in New Hampshire. The result was that per capita sales in Vermont's border

counties were only forty percent of the New Hampshire level by 1977. Vermont sales stagnated for the following three decades but grew substantially in New Hampshire’s border region. Beginning in 1997, sales in New Hampshire grew rapidly and by 2007 per capita general merchandise store sales in Vermont’s border counties were only one-tenth the level of New Hampshire. That is, the general merchandise store had essentially disappeared on the Vermont side of the river. The general merchandise subsector is one of the largest parts of retailing, with total sales on both sides of the river of nearly \$500 million so this is a significant loss for the Vermont retail sector.

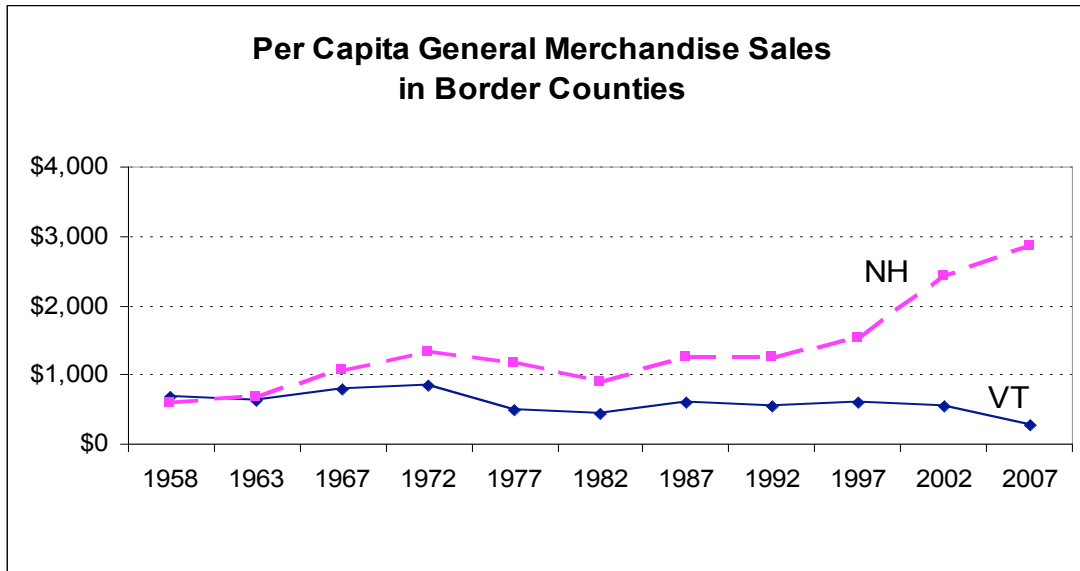


Figure 10

The gap between the two regions was already large and growing before Vermont instituted its sales tax, but it widened considerably after those policies were implemented and has continued to widen through the most current Census measurement. Although we cannot attribute the already-large differential between the two regions before 1970 to the sales tax, the differential did widen after the sales tax was implemented and the large gap continues to the present day.

The large firms that dominate this retail subsector are all located on the New Hampshire side of the Connecticut River. Many of the firms in this subsector, as well as stores in other parts of the retail sector, have located in communities that are retail destinations, which respond to customer desires by bringing a wide variety of retailers together in close proximity to one another. These retail destinations include those located in towns such as Littleton, West Lebanon, and Keene. None of these retail destination centers are located on the Vermont side of the river.

Of the five Walmarts in the Connecticut Valley, all are in New Hampshire, as are the only Target and Kohl’s in the region.¹⁶ Most of these stores are located in these retail destination towns.

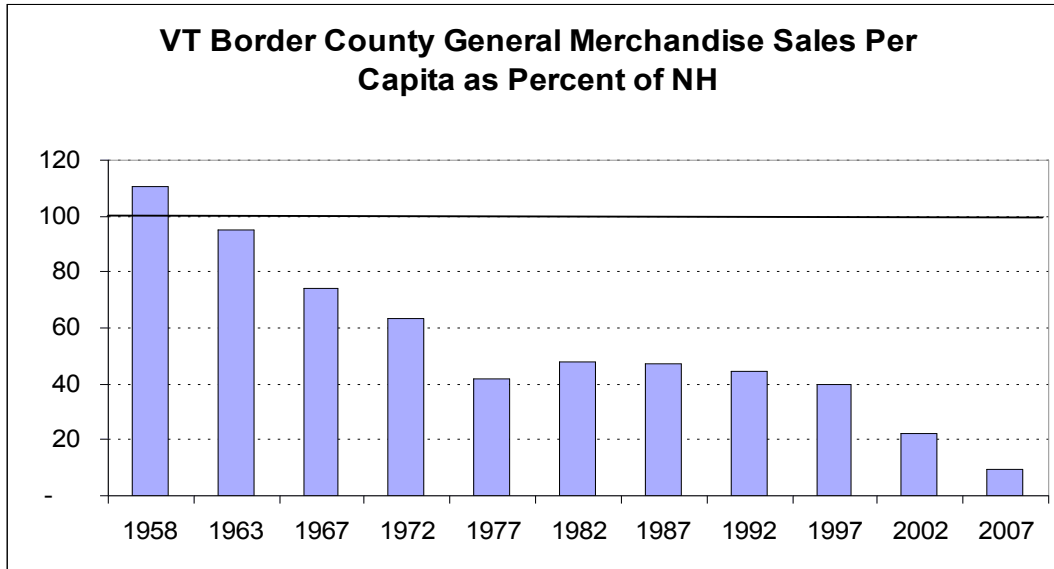


Figure 11

3. Apparel

Apparel stores include clothing and shoe stores, and other similar types of establishments. Although sales on the New Hampshire side of the river have always been somewhat greater than on the Vermont side, per capita sales on both sides of the river exhibited similar trends between the late 1950s and the late 1980s. But by the early 1990s a very large gap had opened in this retail subsector. Per capita sales declined slightly during the economic downturn between 1987 and 1992 in New Hampshire but they fell by one-third in Vermont. Although Vermont sales did grow during the 1990s, Vermont per capita sales have been flat for the past decade in contrast to healthy growth in New Hampshire and by 2007 per capita sales in Vermont were only half the level of New Hampshire.

The sales tax applies differently to this sector than to others. Until 1999, Vermont’s sales tax was levied on shoes and clothing. But in 1999 the Vermont legislature eliminated the

¹⁶ There are four Walmart stores in Vermont, but none in any county bordering the Connecticut River. Walmart has a total of twenty-seven stores in New Hampshire. Target has a total of nine stores in New Hampshire but does not have any Vermont stores. Kohl’s has seven New Hampshire stores and one in Vermont.

sales tax on most clothing and in 2001 the sales tax on shoes was also eliminated. Any impacts of this on clothing sales should have been apparent in the 2002 and 2007 Censuses but there does not appear to have been any impact of this exemption. Indeed per capita sales at apparel stores on the Vermont side of the river actually fell between 2002 and 2007 while they grew significantly on the New Hampshire side. The clothing sales tax exemption may have arrested a more severe decline, but there is little evidence that it has significantly boosted clothing sales in Vermont either absolutely or relative to stores in New Hampshire.

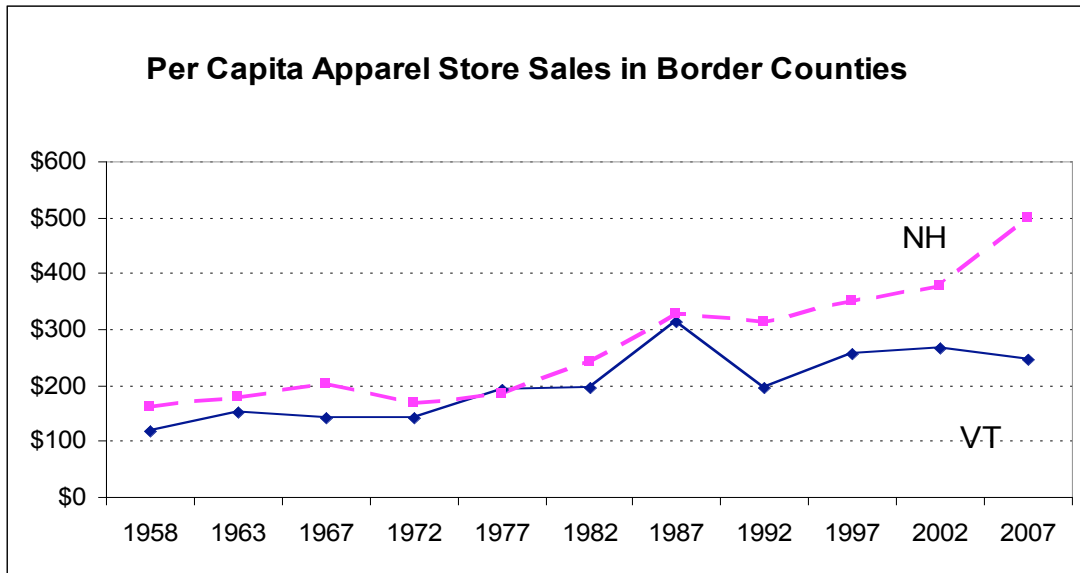


Figure 12

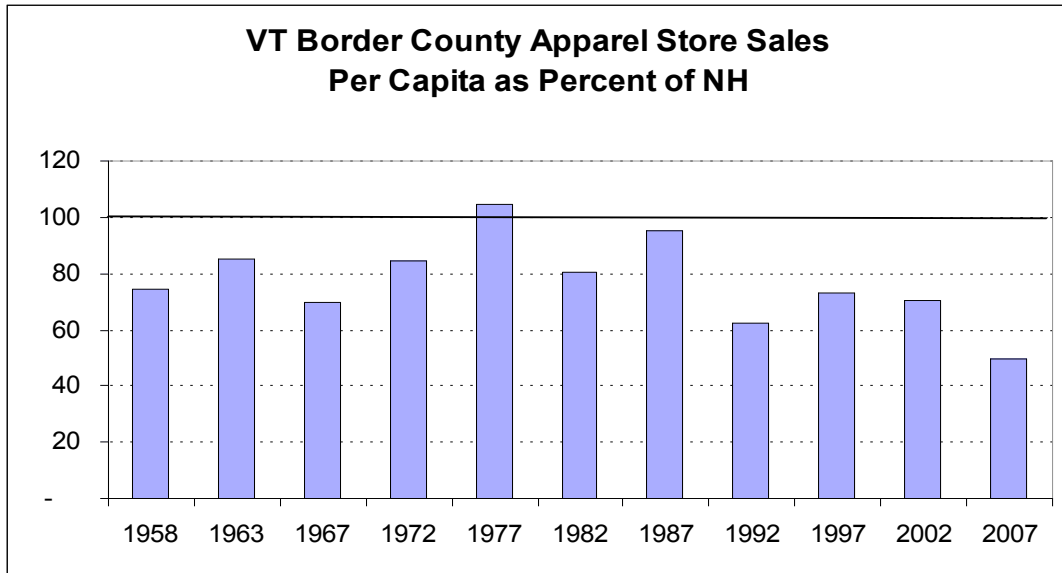


Figure 13

4. Home Furnishings

The home furnishing sector includes stores selling furniture, floor coverings, draperies, music, and electronics. Per capita sales grew from 1963 to 1972 in both regions, with a significant gap developing during that period, and then sales fell sharply in the 1970s with the sales gap remaining high. By 1982, per capita sales on the Vermont side of the river were only half the level of New Hampshire. The gap narrowed as sales grew during the 1980s boom, but again widened as sales plummeted with the downturn of the early 1990s. With the recovery in the 1990s and 2000s, sales grew on the New Hampshire side of the river. On the Vermont side, the pattern of sales was much more erratic. The housing-led boom of the 2000s benefited this sector, but not in Vermont, where per capita sales actually declined between 2002 and 2007. By 2007, sales in Vermont were only at their 1992 level while New Hampshire's sales were at a record high. The gap between the two regions was at its highest in history, with Vermont's per capita sales only 40% of the level of the New Hampshire border counties. Many of the goods sold in this sector are expensive items, such as furniture and electronics, so the tax savings on a single item are high, giving consumers a big reason to avoid paying the Vermont sales tax.

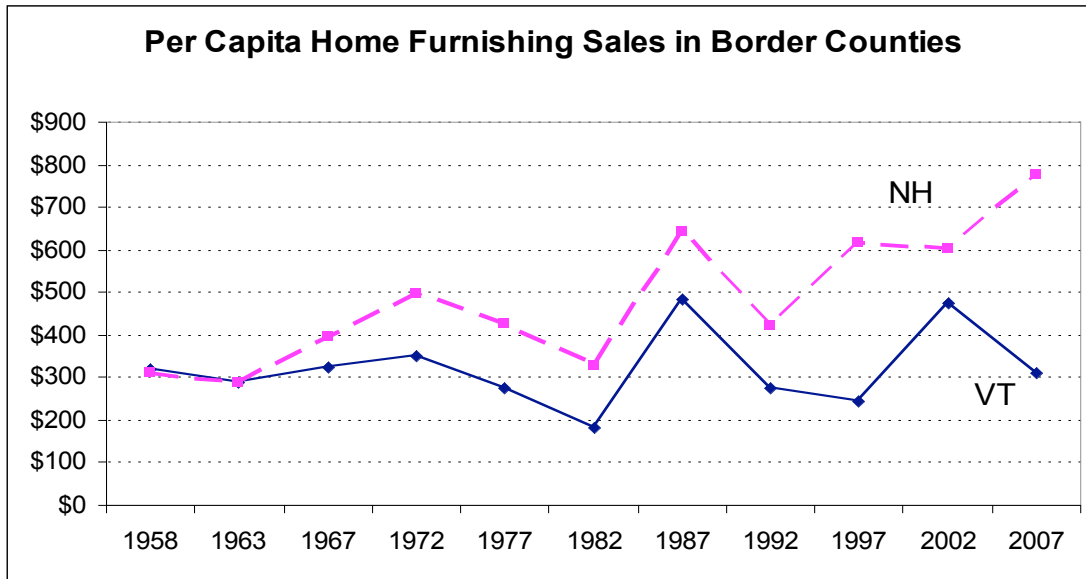


Figure 14

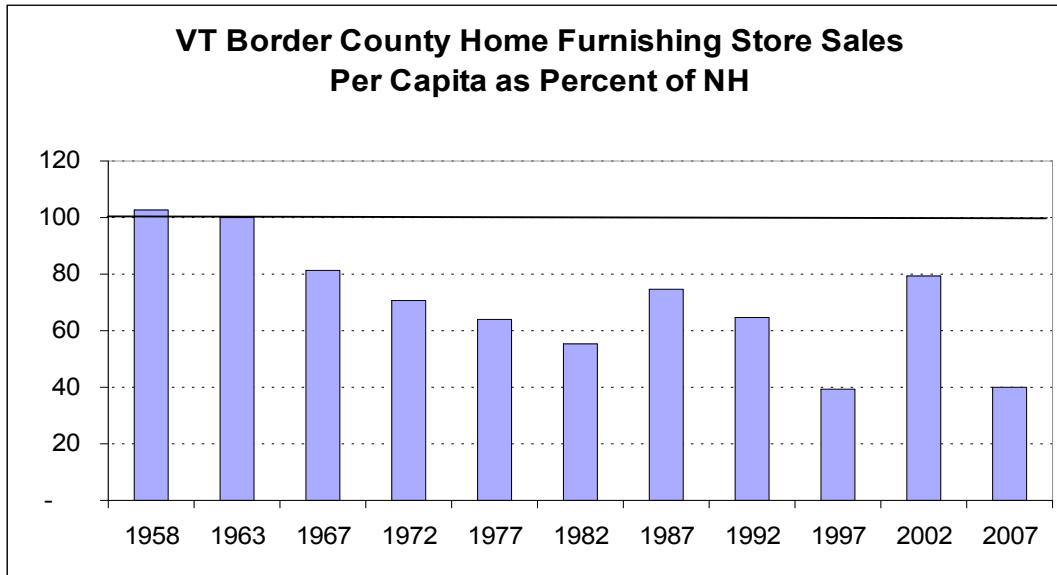


Figure 15

5. Drug Stores

The main type of store in this retail subsector is a drug store. It is a small subsector, accounting for about five percent of per capita retail sales in both Vermont and New Hampshire border counties. Per capita sales on both sides of the river were similar between 1958 and 1982, with very little growth over that period. Then, beginning in the 1980s and continuing into the 1990s, sales grew significantly on both sides of the river. During the 2000s sales in New Hampshire continued to grow while Vermont's per capita sales have declined since 2002.

Per capita sales continued to rise through the recession of 1989-91, counter to the trend in overall retailing, which showed a decline between 1987 and 1992. One reason for this continued increase in spending is that health care spending continued to grow unabated throughout that recession. Another is that for most people with health insurance plans, pharmaceutical costs are reimbursed by those plans. This makes spending on pharmaceuticals less sensitive to economic conditions than is spending on other goods.

In the last three Census years, Vermont's border county sales have consistently been below New Hampshire's, and it fell dramatically in 2007 to only sixty percent of the New Hampshire per capita level. This may be due to the increasing prevalence of large drug store chains, such as CVS and Rite Aid, which have supplanted many small local drug

stores. As is the case in other subsectors, most of these large chain drug stores are located on the New Hampshire side of the Connecticut River.

The rapid recent growth in this subsector is in part due to the increased availability, importance, and cost of pharmaceuticals. It is only since the early 1980s that modern pharmaceuticals have become available to treat a wide variety of ailments, and their price of those new drugs is often extremely high. In addition, drug stores have become larger, especially regional and national chain drug stores, and sell a wide variety of goods similar to what is found in general merchandise stores.

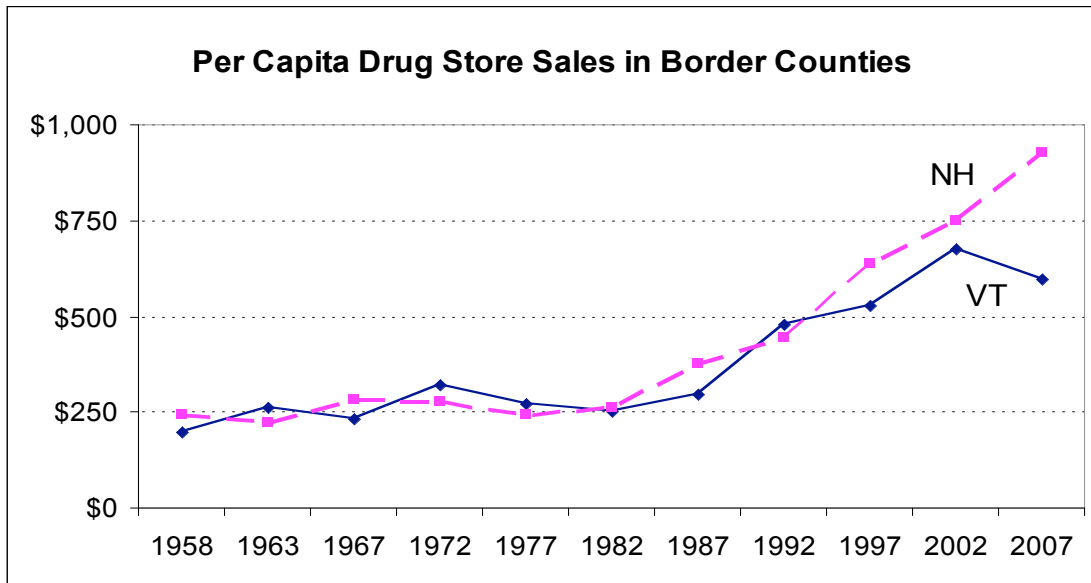


Figure 16

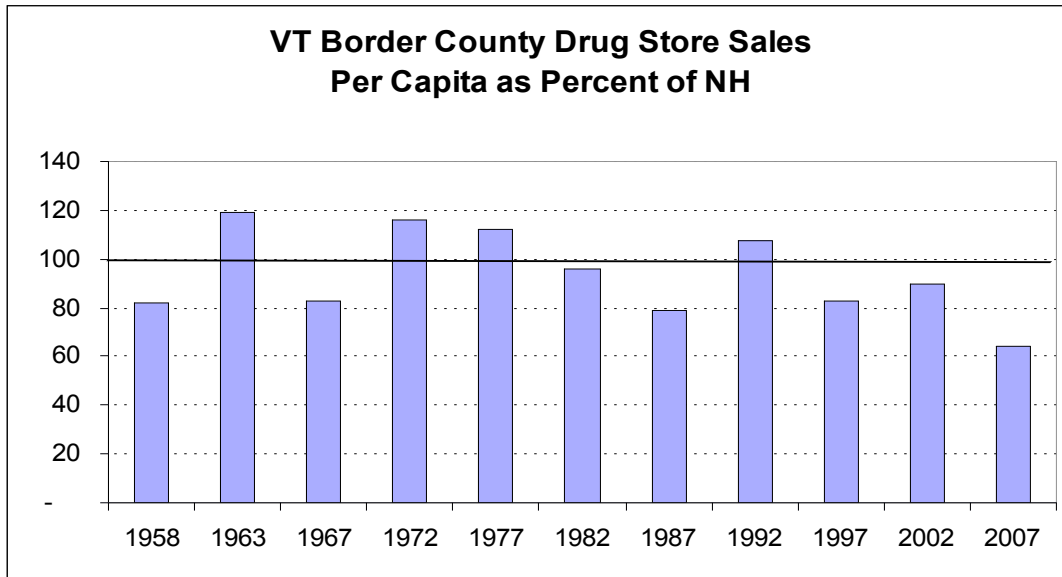


Figure 17

6. Supermarkets

Sales at supermarkets and grocery stores (this subsector excludes convenience stores associated with gas stations) exhibit a different trend than most other sectors and also a different trend than retailing in general. Per capita sales on both sides of the border exhibit an upward trend from 1963 through 1972. Between 1972 and 1977, sales rose slightly in New Hampshire counties and declined slightly in Vermont. Sales on both sides of the river fell during the recessionary period between 1977 and 1982, showing that sales in this retail sector are sensitive to economic conditions. Per capita sales picked up on both sides of the border between 1982 and 1987 and continued to grow in New Hampshire through 1997 and then declined through 2007. In Vermont, per capita sales have declined steadily over the past twenty years.

The recent decline in Vermont’s sales is no doubt due to Vermonters shopping in New Hampshire. But that should have led to an increase in measured sales in New Hampshire’s supermarkets, yet sales fell there. The most likely explanation is the rise of one specific type of store—Walmart supercenters, which are Walmart stores with a large supermarket attached to it. The Census classifies this type of store as a general merchandise store, so that would explain the dramatic increase in sales in that subsector in New Hampshire (Figure 10) as well as the decline in supermarket sales in both Vermont and New Hampshire.

Supermarket sales in Vermont and New Hampshire border regions were remarkably similar from 1958 until 1987, with per capita sales in Vermont’s border counties consistently about fifteen to twenty percent lower than in New Hampshire’s border counties. That relationship changed markedly in 1992, and the divergence continued through 1997 before improving slightly in 2002 and then declining again in 2007. Currently, per capita sales on the Vermont side of the river are only sixty percent of the level of sales in New Hampshire’s border counties and are less than they have been at any time since 1958.

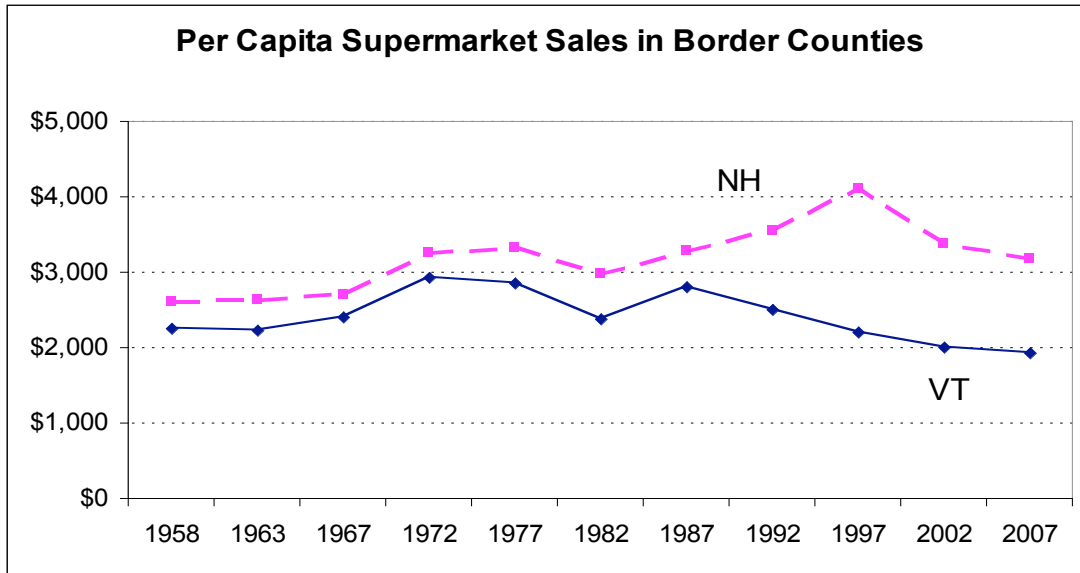


Figure 18

It is not surprising that there was no trend in the gap between the regions through 1987, given that food is not subject to Vermont’s sales tax. But the gap that has developed over the past twenty years is very large. One explanation may be that as other retail subsectors migrated from Vermont across the border into New Hampshire as a result of the sales tax differential, businesses which were not affected by the sales tax followed other retailers. That is, Vermonters increasingly shopped in New Hampshire in order to avoid the Vermont sales tax. Supermarket owners wanted to locate where retail activity was most intense and where people were shopping. As a result, even though there may have been little tax-induced reason for anyone to shop at a supermarket in New Hampshire,

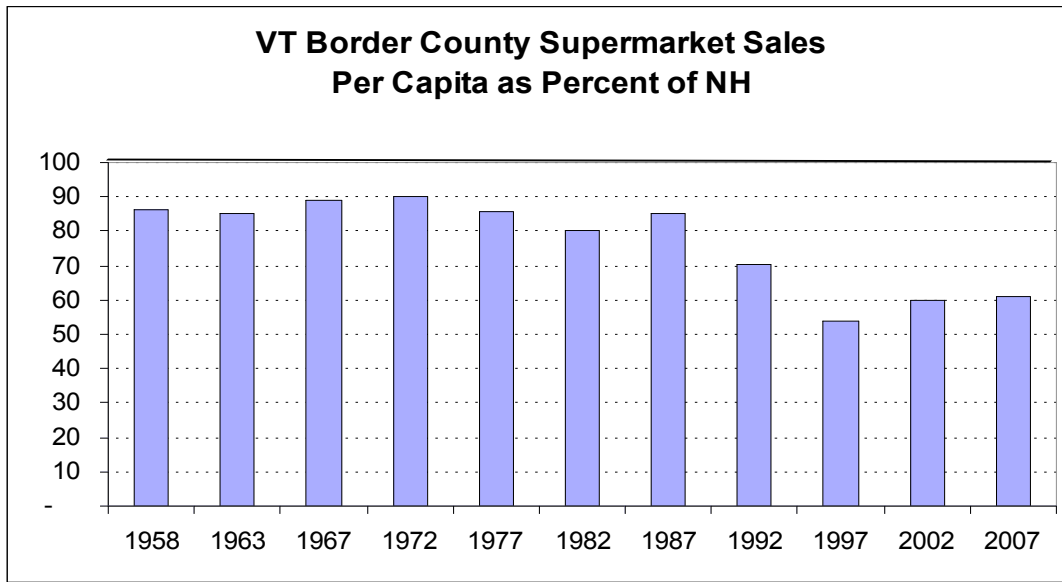


Figure 19

supermarket owners moved their stores away from Vermont and into New Hampshire's border counties in order to be where the majority of retail spending was occurring.¹⁷

Another factor which could have contributed to the increased sales on the New Hampshire side of the river is Vermont's bottle deposit law. The bottle law raises costs to both consumers and retailers in Vermont and provides an additional incentive for Vermonters to shop across the river and for supermarkets to locate on the New Hampshire side. The bottle bill leads to higher costs for retailers because they need to have extra storage space to store returned bottles. There are also higher shipping and transportation costs for beverage wholesalers and wholesalers are required to pay retailers three-and-a-half to four cents per container that they pick up. Therefore, beverage prices will be higher in Vermont than across the river. Costs are higher for consumers as well. Consumers have the inconvenience of washing, storing, and returning bottles to a store, all of which represents non-monetary costs of the bottle deposit law to consumers.

If this is the case, stores that offer convenience to consumers will continue to locate near their customers. Larger grocery stores that stress value over convenience and offer a wider array of products—that is, supermarkets—will tend to gravitate toward locations

¹⁷ This theory may understate the importance of the sales tax, since supermarkets are increasingly carrying non-food items that are subject to the tax. Still, most of the dollar value of sales in supermarkets is food. There are many examples of firms locating near where consumers are doing their buying. This explains why, in large cities, different car dealerships are frequently located very close to one another.

that offer lower costs to their customers. The stores that locate on the Vermont side of the river will stress convenience over price, and should, therefore, be smaller, on average, than on the New Hampshire side. We can test the validity of this hypothesis by examining the average size of stores in the food and beverage sector within the retailing aggregate.

Food sales per establishment can be used as a proxy for the average size of a food store in each state's border region and these data are available from the Census of Retail Trade. These data show that before 1972, average retail sales per store in New Hampshire border counties was only slightly higher than average store sales in the Vermont border counties. Vermont's sales tax took effect in 1969 and the bottle bill in 1971, so neither would be expected to have had a large impact by 1972.

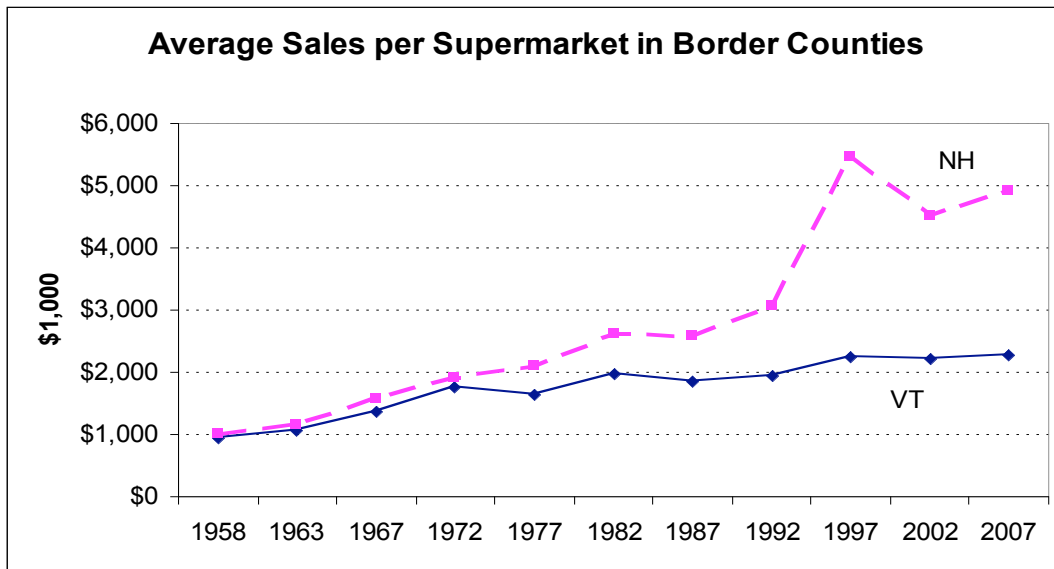


Figure 20

By 1977, nearly a decade after the sales tax and bottle bills were enacted, average sales per store in Vermont were higher than they had been in the early 1970s. But on the New Hampshire side of the border the average sales per store had grown much faster. In 1977, sales per store in the New Hampshire border counties was twenty-eight percent higher than in Vermont—up from near parity five years earlier. The trend of relatively larger stores in New Hampshire continued throughout the 1980s and 1990s. By 1992, the average food store in New Hampshire border counties had sales nearly sixty percent higher than average store sales in the Vermont border counties. Although sales per store in New Hampshire fell between 1997 and 2002, the average sales per store on the New

Hampshire side of the river has been double, or more than double, that of Vermont stores since 1997.

What this means is that although retail food sales per capita in the two border regions had been within twenty percent of each other for a long time, the average store in New Hampshire's border counties is now far larger (measured by sales volume) than its average Vermont counterpart. And this divergence is a fairly recent phenomenon, with the divergence starting in the 1980s, escalating in the 1990s, and continuing through the 2000s.

Why this has occurred is consistent with a basic theoretical model of both consumer and firm behavior. Consider the following scenario: Suppose Vermont residents tend to shop at smaller stores near their homes for smaller purchases of food products that they need in a hurry but go across the Connecticut River to shop at large supermarkets for major grocery shopping trips. We would find that per capita sales in New Hampshire's border counties would be higher than in Vermont and the average food store would be larger in New Hampshire. This is precisely what the data show.

Moreover, if Act 250 makes it more expensive for larger size firms to locate in Vermont, or increases the costs of new construction or expansion, this would make it less expensive to build in New Hampshire and result in an increase in the average size of a store there, which is also what the data show. Given data limitations, we cannot sort out the impact of higher sales taxes on taxable goods sold in grocery stores from the impact of the bottle bill or regulatory costs, such as Act 250, or from the impact of supermarket owners wanting to be in areas that consumers are frequenting for other shopping needs, but the impact of these are all consistent with the trends that we find in the border county region. These policy-induced changes in the retail environment provide an incentive for consumers to shop where prices are lower and an incentive for firms to expand and locate where lower costs enable them to offer lower prices to consumers. These additional costs must have been significant, overcoming the desire of store owners to locate at easily accessible interstate highway interchanges, which is the pattern of retailing in most other areas.

7. Automobile Dealers

Automotive dealers include new and used car dealers, auto supply stores, and boat, motorcycle, and recreational vehicle dealers. Per capita sales in both border regions are higher than any other retail subsector and represent about 25 percent of per capita sales in both border county regions.

Sales in both regions grew slowly between 1958 and 1972, were essentially stagnant between 1972 and 1977, and then fell back to 1960s levels from 1977 to 1982. Car sales

are very sensitive to economic conditions, and this decline was no doubt due to the recessions the nation experienced in 1973-75 and 1980-82. After the latter recession per capita sales shot up dramatically during the boom years of the 1980s, nearly doubling in inflation-adjusted dollars in both regions. Then, over the five year period ending in 1992, sales in both regions plummeted. This is not surprising, given that the recession of the early 1990s was much deeper and longer in New England than in the U.S. In Vermont's border counties, sales dropped by thirty-seven percent while they declined by twenty-five percent on the New Hampshire side of the river. With the return to good economic times by the mid 1990s, sales again accelerated on both sides of the border but the New Hampshire increase exceeded Vermont's sales growth between 1992 and 2007. By 1997, per capita auto sales in the Vermont border counties were only 60 percent of the New Hampshire level and that gap remained steady through 2007.

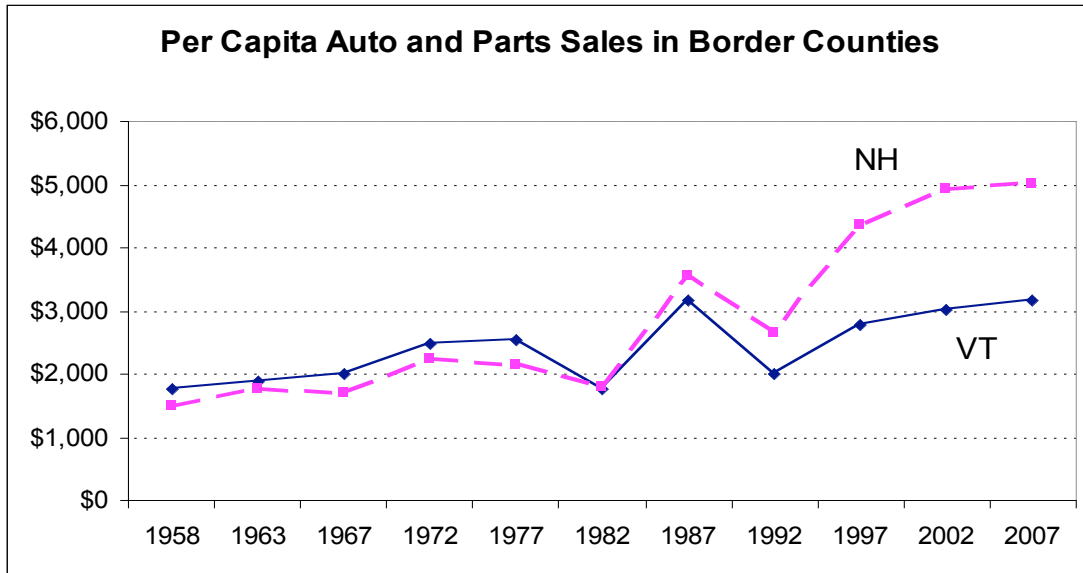


Figure 21

Tax laws require the Vermont sales tax on automobile purchases (actually the motor vehicle purchase and use tax) to be paid by Vermont residents no matter where they buy the car, so there is no tax-based incentive for an auto dealer to locate in New Hampshire in order to gain a competitive advantage over a Vermont competitor.¹⁸ And any New Hampshire resident buying a car in Vermont pays only the applicable New Hampshire

¹⁸As noted in footnote 10, the Vermont sales tax is actually a sales and use tax, although most Vermonters do not report or pay the use part of that tax. This is not the case for automobiles. Vermonters must pay the Vermont tax in order to register their cars in Vermont. New Hampshire does not levy a sales tax on auto purchases, but does levy an annual property tax on the value of vehicles.

taxes on car purchases. So neither state's residents bear any additional tax cost due to the purchase of a car in the other state.

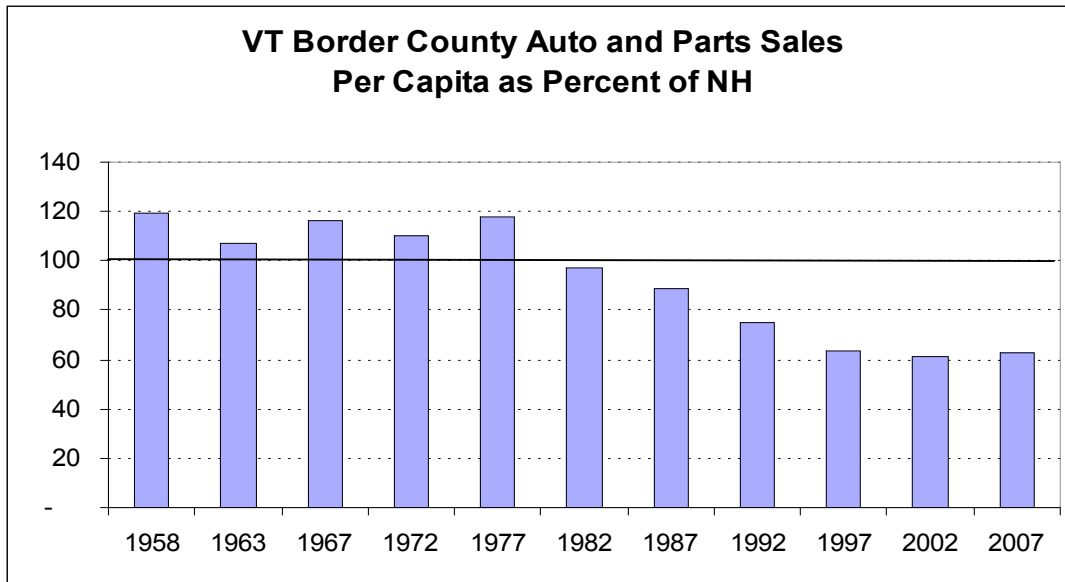


Figure 22

The relative decline in Vermont sales compared to New Hampshire may be due to the same phenomenon that was discussed in the supermarket subsector. Many non automotive retailers have migrated into New Hampshire because of lower costs to consumers, especially due to sales taxes. Over time, sectors that are not directly affected by the sales tax, in this case automobile dealers, have also migrated into New Hampshire so they can be nearer to the major centers of retail activity. That is, auto dealers have moved across the river from Vermont into New Hampshire because people increasingly shop for many goods in New Hampshire and car dealers want to be located in areas where people shop. Those are now predominantly in New Hampshire border counties.

8. Gas Stations

Gasoline station sales per capita exhibited very similar trends on both sides of the river from 1958 to 1977, with steadily rising sales, although growth was greater on the New Hampshire side of the river. After 1977, the two areas' experiences diverged and then converged. In the Vermont border counties, sales continued to grow from 1977 to 1982 while in New Hampshire, sales fell during that same period. Between 1982 and 1987 the pattern reversed as Vermont's per capita sales declined while New Hampshire's rose. In both regions, per capita sales in 1987 were about equal to their 1977 level.

Sales fell in both regions between 1987 and 1992. In both states, per capita sales in 1992 were less than sales in 1977. This is in part due to the significant decline in retail gasoline prices in the U.S. during the early and mid 1980s and to the recession of 1989-91, which decreased the demand for gasoline. After that decline sales increased rapidly in both regions between 1992 and 2007.

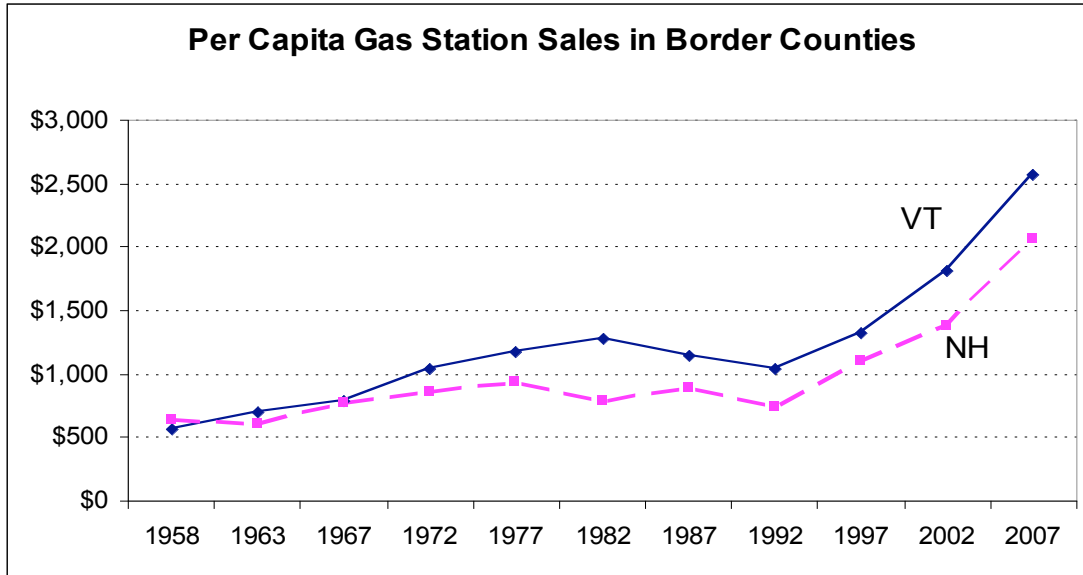


Figure 23

When we compare the level of sales in the two regions, we find that per capita sales in New Hampshire border counties were 15 percent above Vermont's in 1958, but in every year except 1967 (when per capita sales were identical), per capita sales in Vermont border counties were more than sales in New Hampshire. This is the only retail sector where per capita sales have been consistently higher on the Vermont side of the river than on the New Hampshire side over the entire period under study.

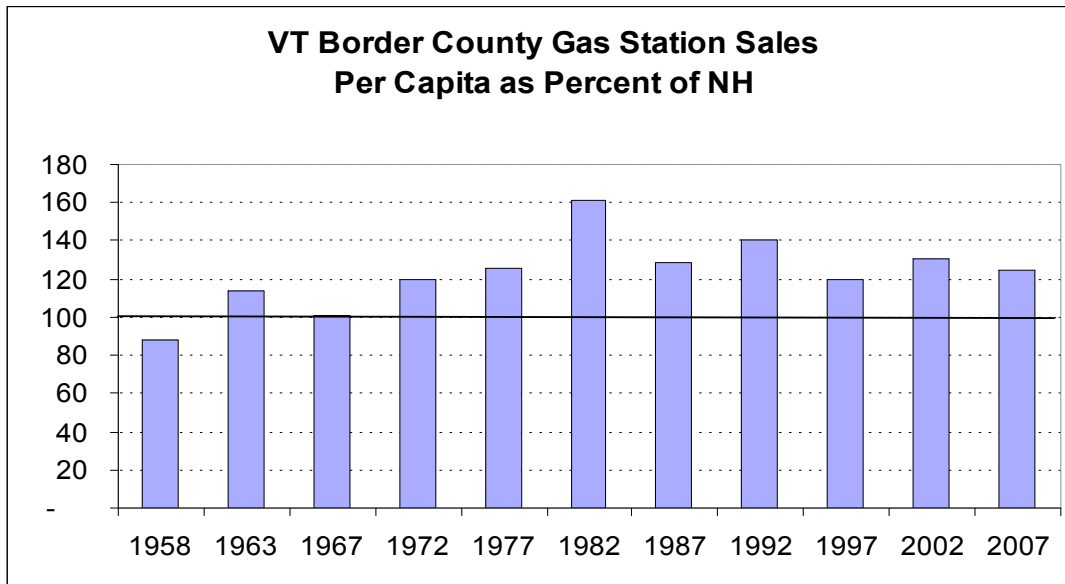


Figure 24

Because the sales and use tax is not levied on gasoline, we would not expect the sales tax to have an impact on gasoline sales and indeed we do not find one. If there is an effect on gasoline purchases due to tax differentials, it would be based on the differential in gasoline taxes in the two states. Gasoline taxes in the two states are virtually identical and have been within two to five cents per gallon of each other for the past four decades.¹⁹ One reason why Vermont's sales have been above New Hampshire's is that I-91, the major north-south highway in the region, is located on the Vermont side of the river and this may stimulate demand for gasoline by tourists and other motorists who drive the interstate.

9. Restaurants

This retail subsector includes restaurants and bars. Per capita sales grew steadily from 1958 to 1977 in both regions, and then declined between 1977 and 1982. Sales then rose dramatically during the boom years between 1982 and 1987. During the recession of the late 1980s, sales fell in Vermont but rose in New Hampshire's border region. In both regions, sales grew during the 1990s but then declined between 1997 and 2002. But the

¹⁹ As of 2010, Vermont's total state gasoline tax was 24.5 cents per gallon and New Hampshire's was 19.63 cents. Before 2010, state taxes on gasoline were within 2 cents of each other. See <http://www.api.org/statistics/fueltaxes/> for current tax rates.

decline was greater on the Vermont side of the river. More recently, between 2002 and 2007, sales grew rapidly in New Hampshire but were only marginally higher in Vermont.

Per capita sales in Vermont and New Hampshire border counties were very similar over the thirty year period from 1958 through 1987, and were identical in 1987. But since 1987 the spending gap between the two regions has widened so that by 2007 restaurant spending on the Vermont side is only three-quarters that of New Hampshire.

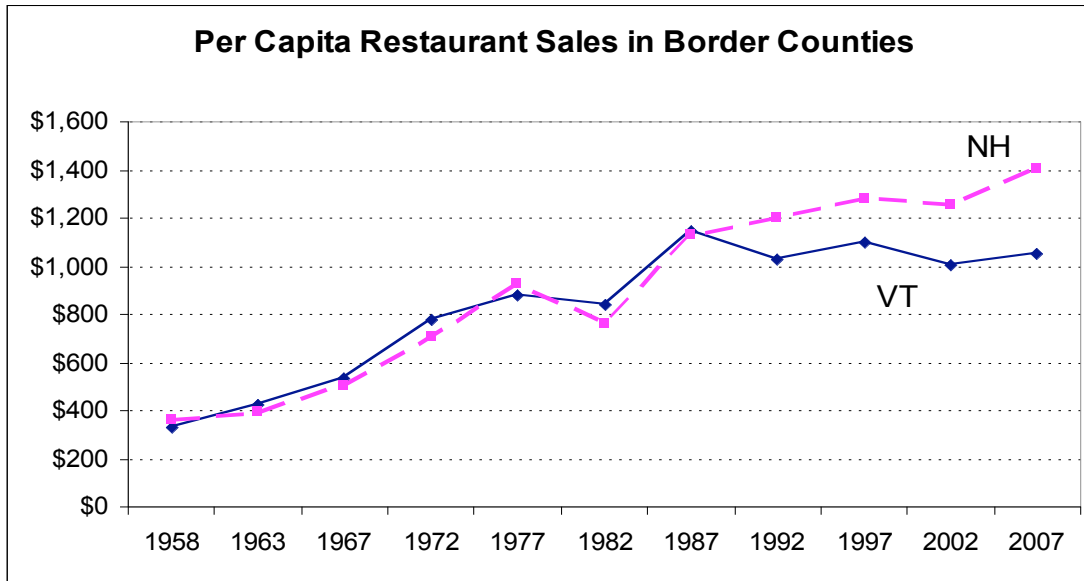


Figure 25

There are two major influences on the per capita sales differential at restaurants and bars in the border region. The first is the tourism industry. Tourists spend a significant amount of money in these establishments and therefore per capita spending is not merely spending by local residents. We do not have good data on tourist spending at restaurants in the two regions, so it is difficult to assess the importance of the tourism industry on spending in this subsector.

The second, and potentially more important issue, is one of specific taxes. The sales tax does not apply to eating and drinking establishments. Meals and drinks are taxed under the meals and rooms tax in Vermont, not the sales tax. Both Vermont and New Hampshire levy a meals and rooms tax and the two states' tax rates have been very similar in both states since their inception in 1968 in Vermont and 1969 in New Hampshire. So specific taxes on restaurant meals do not directly influence the location of this type of economic activity in the region.

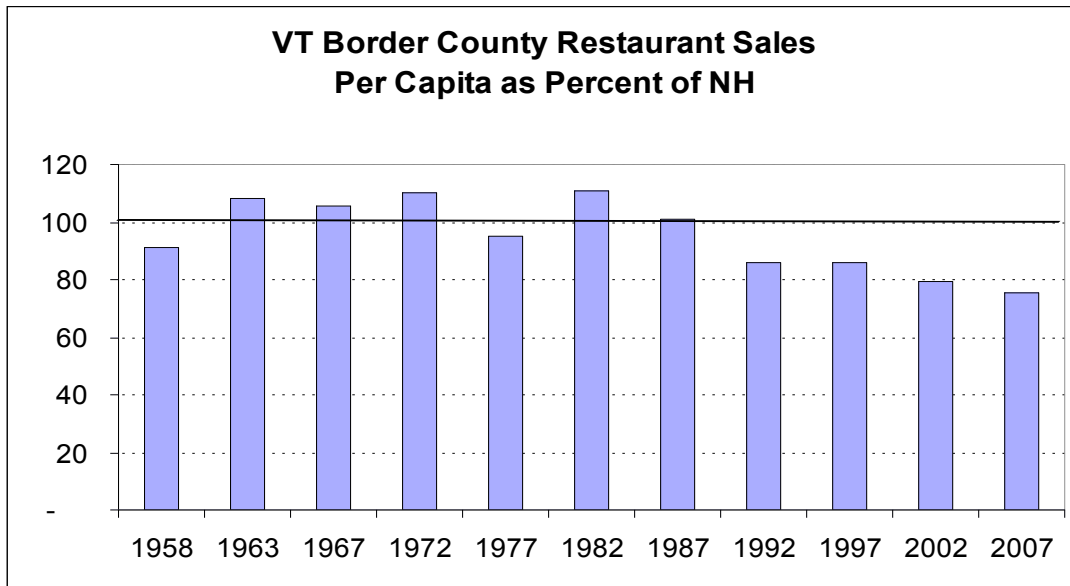


Figure 26

If two political jurisdictions have nearly identical taxes and similar per capita incomes, there is no reason to believe that there should be any significant response in terms of the location of economic activity. And Figures 25 and 26 bear this out at least for the 1963 to 1987 period. There was little difference in per capita sales in eating and drinking establishments and no evidence of any differences in the time trend of sales as was found in most other retail subsectors. In most other subsectors, the differential in per capita sales widened in the years after Vermont's sales tax was implemented. But in this subsector, a significant gap developed between the two border regions, but only beginning in 1992. The reason is the same as in other subsectors where there is no tax differential. Owners of restaurants want to be located where people are shopping and spending money. Increasingly, and especially since the late 1980s, this has been on the New Hampshire side of the river.

D. Summary on Retailing: Sales Taxes and Sectoral Growth

1. Tax Sensitive Subsectors

The discussion above focused on individual subsectors within the retailing aggregate and looked at how per capita retail sales in the Vermont and New Hampshire border counties has changed over time. That analysis revealed several important differences between the two state border areas that are obscured by simply looking at aggregate retailing activity as we did in Figures 5 and 6. Specifically, the analysis found that in most of the retail sectors where Vermont sales are subject to the state sales and use tax, there has been a shift in the pattern of retailing. This shift is demonstrated by rising per capita sales in New Hampshire border counties relative to their Vermont counterparts in the four decades since Vermont instituted its sales tax.

We would not expect such a shift to immediately result from the sales tax in subsectors whose products are not subject to the Vermont sales tax or in sectors where tax rates in the two states are similar. This is particularly important in four retail sectors: automotive sales, gasoline station sales, supermarkets, and restaurants. These sectors, where taxes should not directly affect consumer purchasing decisions, accounted for 77 percent of per capita retail sales in 2007 in Vermont border counties and 62 percent in New Hampshire border counties.

When we subtract these sectors from the retailing aggregate, we get a measure of sales in the two regions that are sensitive to tax differentials. We call these the tax sensitive subsectors within the retail aggregate. If we add up these tax sensitive subsectors, we find convincing evidence that strongly support the view that the Vermont sales tax has, over time, led to a shift in retailing activity away from Vermont border counties and into New Hampshire border counties. Figure 27 shows total the trend in per capita retail sales in the tax sensitive subsectors of the border counties. It shows that a small gap that existed at the time the sales tax was implemented has steadily increased over time and widened dramatically over the past fifteen years.

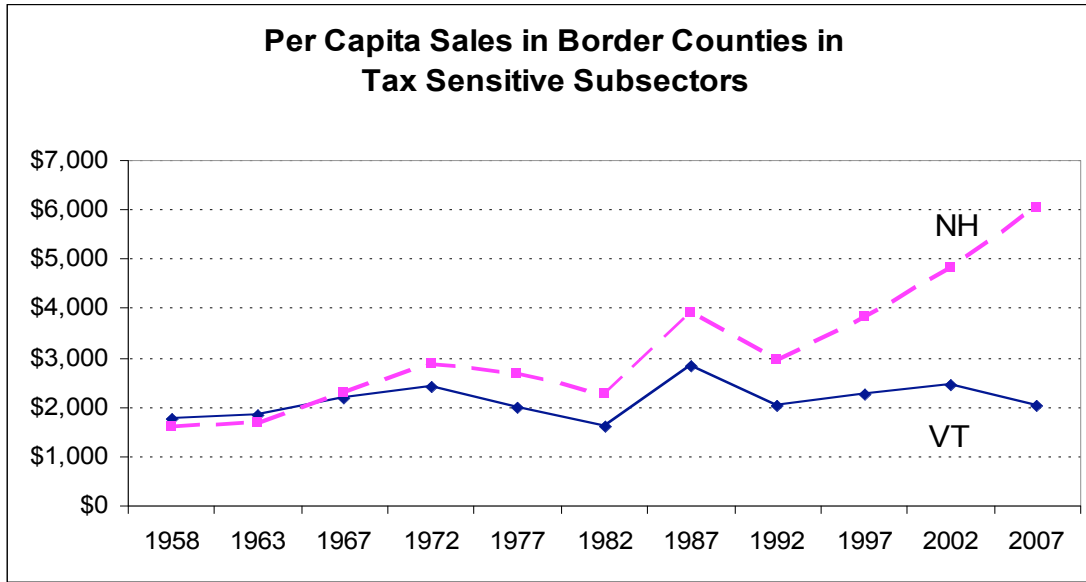


Figure 27

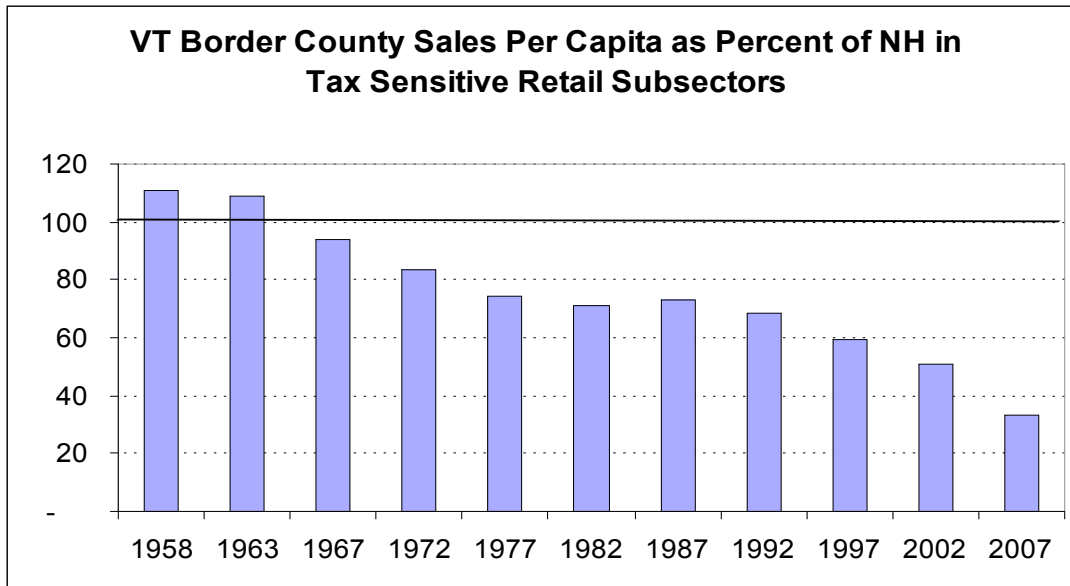


Figure 28

Figure 28 shows that in the late 1950s and through the 1960s, per capita sales of those goods that we would be expect to be influenced by a sales tax were just about identical in

the two regions. Neither state had a sales tax and the economies of both sides of the river were similar. Per capita retail sales in these sectors were consequently nearly identical.

Vermont’s imposition of the sales tax in 1971 did cause retail activity to shift relatively quickly from Vermont to New Hampshire in those retail subsectors where the sales tax was levied. By 1977, Vermont’s per capita border county sales in these tax-sensitive sectors were twenty-five percent below the level of the New Hampshire border counties. By 1982 the gap had widened to nearly thirty percent. Over the next decade, there was not much change in the relative retail shares, but in subsequent years Vermont’s retail share declined dramatically. By 1997 Vermont per capita sales in these tax-sensitive subsectors had fallen to sixty percent of the New Hampshire border county level. Five years later it was down to fifty percent, and by 2007, Vermont’s per capita sales in these border counties were just one-third of the level on the New Hampshire side of the river.

2. Sectors Where Tax Rates Are Similar

An equally revealing, but more subtle, pattern emerges when we examine the subsectors that are not directly affected by public policy choices. These subsectors are restaurants and bars, automobile dealers, supermarkets, and gas stations. Figures 29 and 30 show that per capita sales in New Hampshire and Vermont border counties rose and fell almost in lockstep with one another and were nearly identical between 1958 and 1982.

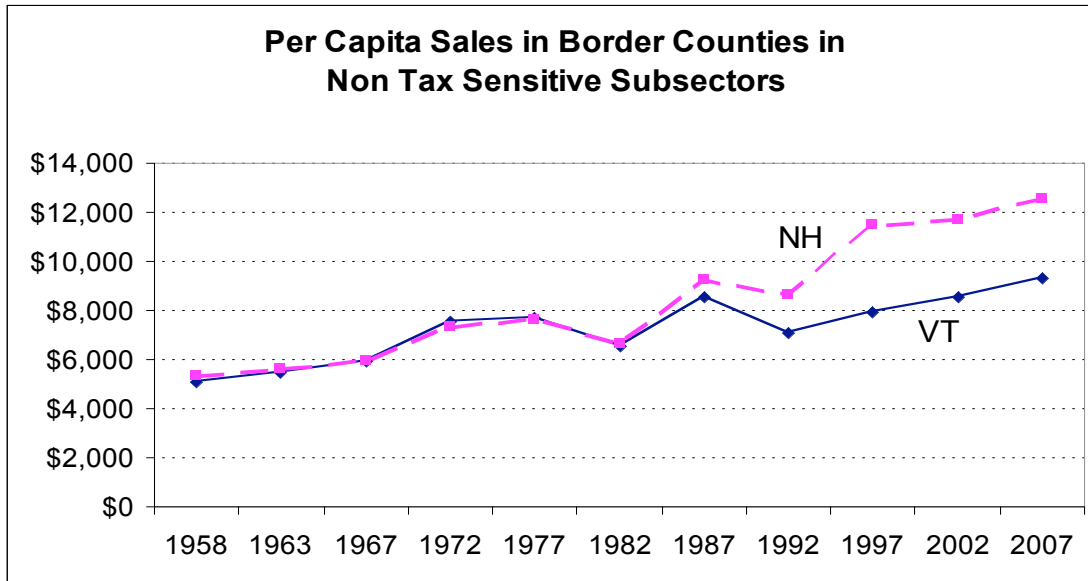


Figure 29

By 1987, both regions had experienced five years of economic recovery from the recessions of the early 1980s, but retail sales growth on the New Hampshire side of the river exceeded Vermont and the gap continued to widen after 1987. Ten years later Vermont sales in these non-tax sensitive parts of the retail economy were thirty percent less than the level in New Hampshire. The gap between Vermont and New Hampshire narrowed somewhat in 2002 and was unchanged in 2007 so that per capita spending gap in retail subsectors where there is little or no tax differential between the two states remains at about twenty-five percent. For every \$100 in sales in these subsectors in New Hampshire, \$75 is spent on the Vermont side of the river.

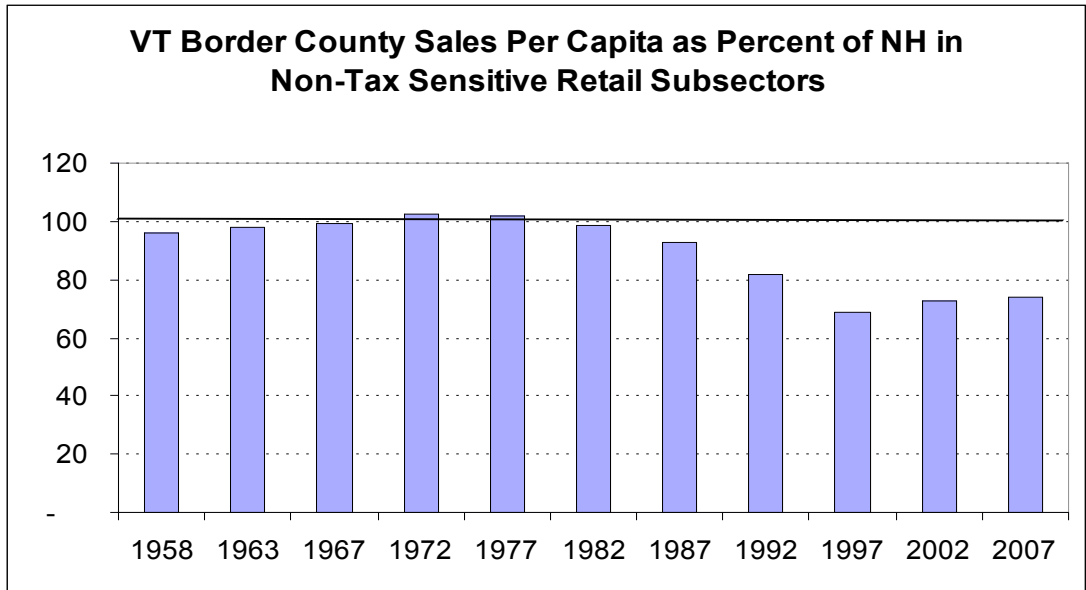


Figure 30

3. Overall Summary

These data strongly support the view that Vermont's sales tax has, over time, led to a significant shift in retailing activity away from Vermont. Initially, the impact was felt in those parts of the retail economy where taxes mattered, what we call the tax sensitive subsectors. Vermont and New Hampshire consumers responded to the higher prices in Vermont (caused by the higher sales tax) and bought goods in New Hampshire. By the 1990s, more than two decades after Vermont implemented its sales tax, retail activity of all types had moved across the border. Even those parts of the retail economy where taxes rates were similar felt the impact of the sales tax.

Vermont's border counties have a significantly lower level of retail activity per capita than do New Hampshire's border counties. The gap between the two areas, especially evident in tax sensitive retail subsectors, is accelerating. The differential is even more than one would expect from the nine percent differential in per capita income between the two regions. A nine percent differential in per capita incomes would lead one to expect a somewhat higher level of retail sales per capita in New Hampshire border counties, but the actual differential — Vermont per capita sales are sixty percent of the New Hampshire level — is far greater than that.

The data also support the conclusion that business owners and Vermont residents have changed their behavior over the past four decades. Those changes have taken time, but they have had a pronounced effect on the retail sector. The differential in per capita sales between the two regions began to widen during the first decade after the sales tax was implemented. The sales gap widened at a more rapid pace during the tax's second decade and was exacerbated by the increase in Vermont's sales tax rate from three percent to four percent in 1982.

The gap in per capita sales in the two border regions continued to grow throughout the boom period of the mid to late 1980s. During the 1989-1991 economic downturn, New Hampshire's economy as a whole lost a larger share of jobs than did Vermont's, but the retail situation in the border region did not exhibit this same trend. In the border region, the gap between Vermont and New Hampshire continued to grow, again exacerbated by the increase in Vermont's sales tax from four percent to five percent in 1993. That gap continued to widen during the expansion of the 1990s and into the early 2000s. The impact of the 2003 increase in the tax rate from five percent to six percent was reflected in the 2007 Census data, which showed sales in tax sensitive sectors plummeted in Vermont in both absolute dollar terms and relative to New Hampshire, which saw retail sales growing between 2002 and 2007 while Vermont's sales fell. As the sales tax gap between the two states widened there was more of an incentive for Vermont border county residents to shop in New Hampshire, but also more of an incentive for Vermonters living farther away from the border to also shop in New Hampshire.

Over the past decade, other changes have occurred that have affected the retail sector in the Connecticut River Valley. In 1999 Vermont eliminated the sales tax on clothing and on shoes in 2001. That does not appear to have had any positive impact on sales in the apparel subsector in Vermont. There has also been increased opposition to the siting of "big box" retailers in Vermont, and these types of retailers have become major players in many different retail subsectors, not just general merchandise subsector. This opposition has been less vocal, and certainly less effective in New Hampshire, so that most of the large new retailing chains, as well as large shopping plazas, are located on the New Hampshire side of the river, despite the presence of the interstate highway on the

Vermont side. These large shopping plazas can be found from Littleton, NH in the north, to West Lebanon and Keene in the southern part of the Connecticut River Valley.

V. Summary

The data and analysis presented above conclusively show that in the counties bordering the Connecticut River, Vermont retailers have fared much worse than retailers across the river in New Hampshire. The data strongly support the view that one of the major reasons for this is unintended consequences of public policy choices that have been made in Vermont over the past forty years. Specifically, Vermont's sales tax has driven a wedge that is getting increasingly large between the prices available to consumers living on the two sides of the Connecticut River Valley. In addition, Vermont's Act 250 and the bottle bill have contributed to an erosion of retailing on the Vermont side of the river.

Public policies often have long lag times until they have an effect on the economy, and this study confirms that view. For the first few years after they were implemented, none of these policies seemed to have had an appreciable impact on retail activity. However, after the first decade of their existence, retail trade activity began to shift away from Vermont and into New Hampshire. During the second decade of their existence, the shift accelerated. By 2007, after these laws had been in effect for nearly four decades, their incentive effects had sufficient time to alter the retail landscape of the two border areas even in retail subsectors that are not directly affected by Vermont's sales tax.

The magnitude of this shift can be quantified in a slightly different way than that discussed above. We do this by asking what retail sales would have been if Vermont's retail sales in the border counties had not been reduced by these policies.

Total retail sales per capita on the Vermont side of the river are only sixty percent as high as on the New Hampshire side. What would the retail sector look like on the Vermont side of the Connecticut River if per capita sales were identical to the level on the New Hampshire side, as they were in the 1950s and 1960s? A simple calculation finds that total retail sales in the Vermont border counties would have been \$536 million higher than the \$1.89 billion level reported in 2007. That additional retail activity would translate into nearly 3,000 more retail jobs in Windham, Windsor, Orange, Caledonia, and Essex Counties. Since much retail activity is concentrated around the larger towns, and the additional retail sales would most likely have occurred along the I-91 corridor in Vermont, there would have been a much more vibrant retail economy in towns such as Brattleboro, Bellows Falls, Springfield, White River Junction, and St. Johnsbury than there is today.

VI. Conclusion

The evidence provided in this report strongly supports basic economic theory and empirical economic studies using data from other countries, states, and localities. Those studies have found that a differential in sales taxes in two political jurisdictions causes retail activity to shift into the lower-tax jurisdiction and away from the higher taxed jurisdiction. In the case of Vermont and New Hampshire, in the forty years since Vermont adopted its sales tax, retail activity has shifted away from Vermont and into New Hampshire.

A number of findings support this view. First, overall retail activity per person was nearly identical in the two border county areas in the decade before Vermont levied its sales tax. Over time, that equality has changed. During the first ten years of the sales tax, there was a small shift in retail activity from Vermont border counties into New Hampshire border counties. During the second decade of its existence, that trend accelerated. That acceleration has been reinforced by the passage of time and by the steady increases in the Vermont sales tax, from three percent in 1969 to four percent in 1982 to five percent in 1991 to six percent in 2003.

Second, when we look within the retailing aggregate, we find that those retail subsectors that are sensitive to tax differentials—that is, sectors that sell items that are subject to the Vermont sales tax—showed an early shift in activity away from Vermont and into New Hampshire. Today, in those subsectors, per capita retail sales in New Hampshire’s border counties is three times the level of Vermont’s border counties.

In those retail subsectors where there are no tax differentials, such as in restaurants where the two states have nearly identical tax rates, or where taxes do not matter (such as automobile sales), retail sales in both border regions were nearly identical for many years. But during the past two decades, there has been an increasing trend for retail activity even in these sectors to also move from Vermont to New Hampshire border counties. Today, per capita sales in Vermont’s border counties are only three quarters the level of New Hampshire’s border counties.

These findings are all supported by economic theory, which posits that consumers will purchase more of a product as the price falls. And given two identical products, if there is a good substitute available at a lower price, consumers will purchase the lower-priced product. In this case, goods sold in New Hampshire cost less than goods sold in Vermont that are subject to Vermont's sales tax. The data show that the additional time spent driving into New Hampshire from Vermont's border areas has not stopped a significant number of Vermont shoppers from purchasing goods in New Hampshire. The study

estimates that the loss to the Vermont border counties due to the sales tax differential was \$540 million in retail sales and 3,000 retail jobs in 2007.

Retailers' location decisions are in turn based on these consumer preferences. It is worth noting again that the major north/south transportation artery along the Connecticut River, I-91, is located on the Vermont side of the river. One would expect retailers to want to locate near interstate highway interchanges in the Connecticut River Valley, just as they do elsewhere in the nation. But even the powerful lure of an interstate highway has not been sufficient to entice retailers to locate in Vermont. Whether that is due to the sales tax difference or the cost, uncertainty, or difficulty of constructing new retailing centers because of Act 250 or other development regulations cannot be determined. But it is clear that what some may perceive as only a small price differential — originally three percent, and now six percent — is sufficient to overcome other powerful incentives. The result has been the hollowing out of the retail part of the Vermont border county economy and a loss of the vibrancy and diversity that a healthy retail sector gives to Vermont communities along the Connecticut River.

Appendix: County Maps of Vermont and New Hampshire

