

# **Taxable Sales from Eating and Drinking Places Before and After Smoke-free Regulations in New York State**

Report prepared by

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## **Executive Summary**

This report presents taxable sales data over time for eating and drinking establishments by county in New York State to determine the evidence to support the claim that smoke-free regulations cause decreases in restaurant sales. The data examined come from published data from the New York State Department of Taxation and Finance from 1990 to 1999. Data for five counties with stringent smoke-free regulations (Suffolk, New York City, Westchester, Erie, and Monroe) were examined and compared to retail sales in those locations and to the rest of New York State that does not have stringent smoke-free regulations.

Major findings of the report include:

- When the data for all the counties were combined, per-capita sales from eating and drinking establishments increased by 14.2% compared with a 7.5% increase in sales for the rest of New York State over the same period.
- While factors such as time, season, unemployment, and population typically were significantly associated with changes in levels of taxable sales, the presence of smoke-free regulation was not in all five counties studied.
- The change in the percent of retail sales from eating and drinking places improved more in counties with smoke-free regulations compared to the rest of New York State.
- When compared to the rest of New York State, a significant increase in eating and drinking sales was observed in one county (New York City), a borderline positive association in another (Westchester), a significant decrease in another (Monroe), and no effect in two counties.

These data do not provide evidence of adverse economic consequences in New York State counties that have smoke-free regulations.

## **Introduction**

Secondhand smoke is widely established as a cause of cancer. Studies have shown that hospitality workers have significantly higher levels of exposure to secondhand smoke and that they are at 100% greater risk for lung cancer. The purpose of smoke-free regulations is to reduce exposure to secondhand smoke among the general public and among workers in highly exposed occupations.

When such regulations are being considered, there is often considerable debate over a potential side effect of the smoke-free regulations – that the local restaurant economy will be adversely affected.

To address this issue in New York State, taxable sales data from eating and drinking places were examined for several counties that have enacted smoke-free regulations were examined.

## **Methods**

### Data Source

Retrospective longitudinal data on taxable sales from ‘eating and drinking establishments’ and ‘retail trade’ were obtained semi-annually from March 1990 to August 1999 for each county in New York State from the New York State Department of Taxation and Finance. Businesses are classified into a particular business according to the code reported on their income tax returns using the Federal Standard Industrial Classification coding system. The codes for ‘eating and drinking places’ are 58.10 - 58.13, and the codes for ‘retail trade’ are 52.00 - 59.99.

Counties that have passed smoke-free regulations that require 100% smoke-free dining areas, eliminate smoking in restaurants unless the area has a separate ventilation system, and have at least 12 months of available data following the implementation of the regulation were considered for this analysis. The counties include New York City, Suffolk, Erie, Monroe, and Westchester. See Table 1 for a summary of these laws and when they became effective. Data for all NYS counties without stringent smoke-free regulations were combined to represent the ‘Rest of New York State’.

Four outcome measures were obtained: 1) total taxable sales from eating and drinking establishments for a given county; 2) per-capita eating and drinking sales in a given county; 3) the fraction of retail sales from eating and drinking places in a given county; and 4) the ratio of sales from eating and drinking places in a county with a smoke-free regulation to sales in the rest of New York State without stringent regulations. All dollar figures were adjusted for inflation.

The main predictor variable was the presence of the smoke-free ordinance in a given time period in a given county. Other measures included in multivariate analysis include the season (winter or summer), year, unemployment rate (obtained from the Department of Labor), and population (obtained from the Census Bureau).

Analyses include plots of each outcome variable over time. To control for other factors related to sales, a multivariate linear regression model was constructed to model each outcome as a function of the presence of the smoke-free law, time, season, unemployment rate, and population. Underlying economic trends that affect the overall business climate in an area, including restaurants, were controlled for by the structure of both the outcome (i.e., by comparing eating and drinking sales to retail sales in a given county) and predictor variables selected.

## **Results**

### Trends in Aggregate Taxable Sales Data from Eating and Drinking Places

Averaged across the five counties with stringent smoke-free regulations, per-capita sales from eating and drinking establishments increased by 14.2% from one year before each regulation took effect to present. Per-capita sales for the rest of New York State increased by 7.5% over the same period (see Figure 1).

Data on overall taxable sales from eating and drinking establishments for each of the five counties and the rest of New York State can be found in Table 2 and Figures 2-6. Sales increased by more than the state average in three counties and were virtually the same in two counties.

In multivariate analysis, the presence of a smoke-free regulation was not associated with changes in taxable sales from eating and drinking establishments in all five counties studied, while variables for time, season, unemployment, and population typically were significantly associated with sales.

### Trends in the Fraction of Retail Sales from Eating and Drinking Establishments

Table 3 presents the raw data on the change in this fraction measure from one year before each smoke-free regulation to present for the five counties studied and the rest of New York State. The rate of change in this fraction measure improved more in each of the five counties from one year before the smoke-free regulation to present compared to the rest of New York State. Graphical presentations of these data for each county and the rest of New York State can be found in Figures 7-12.

Similarly, multivariate analysis did not reveal evidence of a relationship between the presence of a smoke-free regulation and changes in the fraction of retail sales from restaurants in any of the five counties studied.

#### Trends in Sales from Eating and Drinking Places in Counties with Smoke-free Regulations to Counties Without Stringent Regulations

Table 4 presents the raw data on the change in the ratio of eating and drinking sales in counties with smoke-free regulations to the rest of New York State. Substantial increases were observed in three counties (Suffolk, New York City, and Westchester), one county decreased by less than 1% (Erie) and another county decreased by 4.8% (Monroe). Graphical presentations of these data for each county and the rest of New York State can be found in Figures 13-17.

Multivariate analysis suggested evidence of a significant increase in this ratio measure in one county (New York City), a borderline positive association in another (Westchester), a significant decrease in another (Monroe), and no effect in two counties (Suffolk and Erie).

#### **Discussion**

These data fail to provide evidence of adverse economic consequences to the restaurant industry in New York State counties that have implemented smoke-free regulations. The vast majority of analyses show that restaurant sales were largely unrelated to the presence of a smoke-free regulation, regardless of the outcome measure or county studied, although other factors such as time, season, unemployment, and population were often associated with restaurant sales.

While these data don't support the claim that smoke-free regulations are bad for business, they are consistent with several previously published reports in peer-reviewed scientific journals on the economic impact of smoke-free regulations in New York State and other locations. Taxable sales and restaurant employment increased 22% in New York City in the years after their smoke-free law was enacted compared to only a 1% increase in the rest of New York State. An analysis of restaurant employment in Erie County revealed that restaurant job growth in Erie County outpaced the growth rate in all neighboring counties that did not have smoke-free legislation. Published studies in California, Massachusetts, Colorado, Texas, and Arizona that examine taxable sales data all reach the same conclusion as well, that restaurant sales are not influenced by the presence of smoke-free regulations.

The scientific literature also indicates that smoke-free regulations are widely supported by the population. In fact, a survey of 1,000 New York City area residents 18 months after the New York City law became effective indicated that more smokers favored the smoke-free than opposed it. Furthermore, patrons report less exposure to secondhand smoke, which is the primary purpose of such regulations.

While use of taxable sales data to examine the economic effect of smoke-free regulations is subject to some limitations, this measure is one of the best indicators available to detect evidence of an adverse economic effect of smoke-free regulations as it is collected in a uniform and consistent manner for all businesses in New York State.

While most of the economic indicators did not provide evidence of an association between taxable sales and the presence of smoke-free regulations, there were two instances of statically significant effects, each resulting when sales in a smoke-free county were compared to the rest of New York State. New York City eating and drinking sales increased faster after their

smoke-free regulation compared to the rest of New York state, while Monroe county sales increased at a rate slower than the rest of the state. Considering that the other indicators of restaurant sales failed to reveal significant associations for these counties, it is likely that these associations may be the result of other factors that influence the economy. New York City experienced tremendous economic growth during the 1990's; however, upstate counties that heavily rely on manufacturing to support their economies did not experience such economic growth. For example, Eastman Kodak, the largest employer in the Rochester area (Monroe County), laid off thousands of employees during the 1990's, which may have caused decreased in spending in Monroe County, especially when compared to the rest of New York State. These unmeasured factors, which are unrelated to smoke-free regulation, may also influence restaurant sales.

In summary, the taxable sales data analyzed do not provide evidence of adverse economic consequences in New York State counties that have smoke-free regulations.

Figure 1. Per-Capita Sales in Eating and Drinking Establishments Increased at a Faster Rate Following Smoke-free Regulations Compared to the Rest of New York State

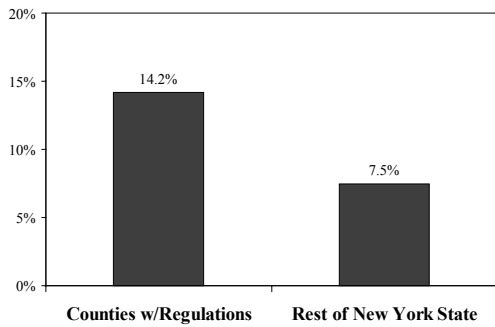
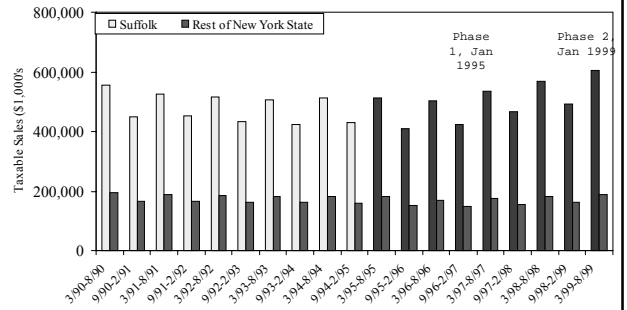
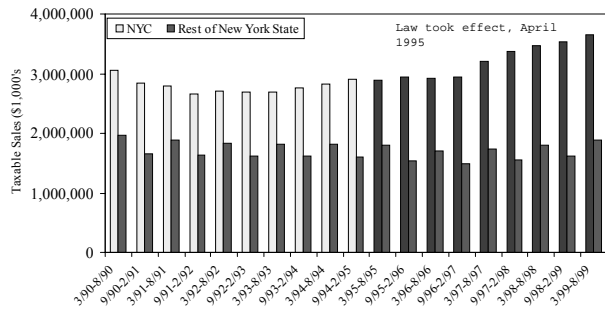


Figure 2. Eating and Drinking Taxable Sales, Suffolk County, 1990 to 1999



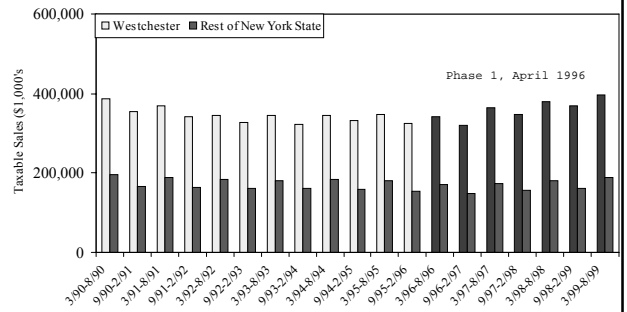
P-value of the law variable from linear regression model = 0.91 (adjusted for time, season, population, and unemployment). Dollar figures are adjusted for inflation. The dollar amounts for the rest of New York State are reduced by a factor of 10 to maintain scale with Suffolk County.

Figure 3. Eating and Drinking Taxable Sale, New York City, 1990 to 1999



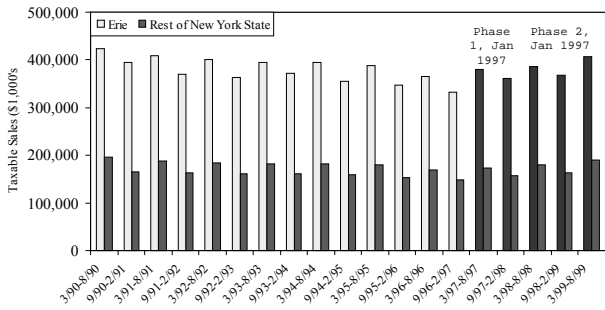
P-value of the law variable from linear regression model = 0.86 (adjusted for time, season, population, and unemployment). Dollar figures are adjusted for inflation.

Figure 4. Eating and Drinking Taxable Sales, Westchester County, 1990 to 1999



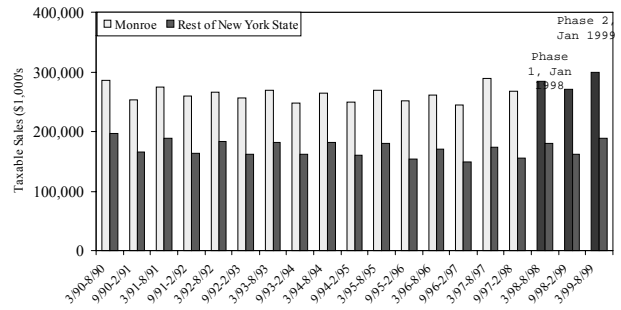
P-value of the law variable from linear regression model = 0.75 (adjusted for time, season, population, and unemployment). Dollar figures are adjusted for inflation. The dollar amounts for the rest of New York State are reduced by a factor of 10 to maintain scale with Westchester County.

Figure 5. Eating and Drinking Taxable Sales, Erie County, 1990 to 1999



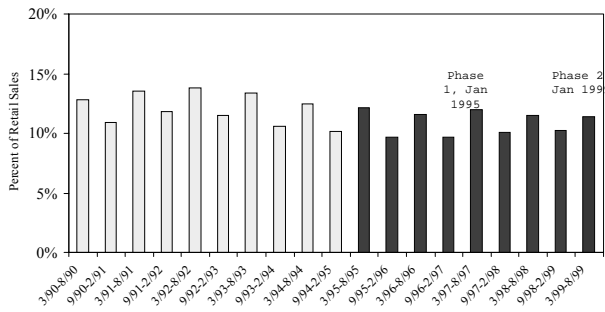
P-value of the law variable from linear regression model = 0.32 (adjusted for time, season, population, and unemployment). Dollar figures are adjusted for inflation. The dollar amounts for the rest of New York State are reduced by a factor of 10 to maintain scale with Erie County.

Figure 6. Eating and Drinking Taxable Sales, Monroe County, 1990 to 1999



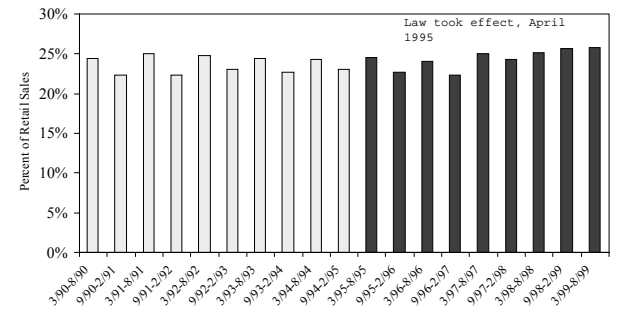
P-value of the law variable from linear regression model = 0.70 (adjusted for time, season, population, and unemployment). Dollar figures are adjusted for inflation. The dollar amounts for the rest of New York State are reduced by a factor of 10 to maintain scale with Monroe County.

Figure 7. Percent of Retail Sales from Eating and Drinking Establishments, Suffolk County, 1990 to 1999



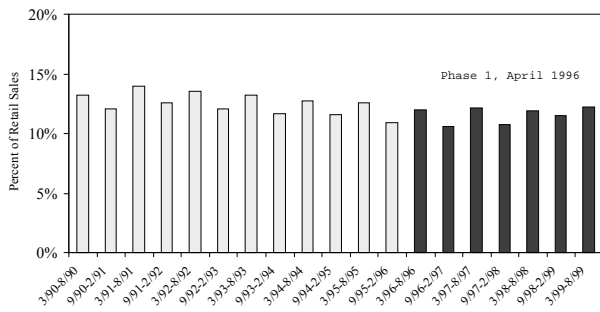
P-value of the law variable from linear regression model = 0.80 (adjusted for time, season, population, and unemployment).

Figure 8. Percent of Retail Sales from Eating and Drinking Establishments, New York City, 1990 to 1999



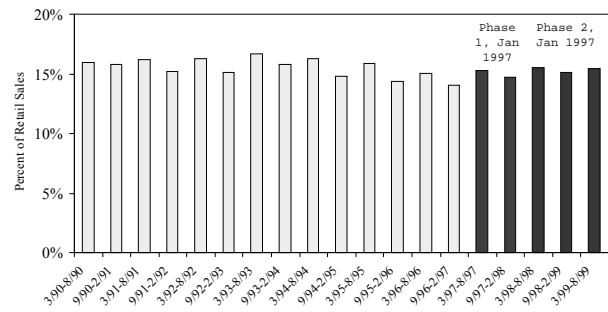
P-value of the law variable from linear regression model = 0.48 (adjusted for time, season, population, and unemployment).

Figure 9. Percent of Retail Sales from Eating and Drinking Establishments, Westchester County, 1990 to 1999



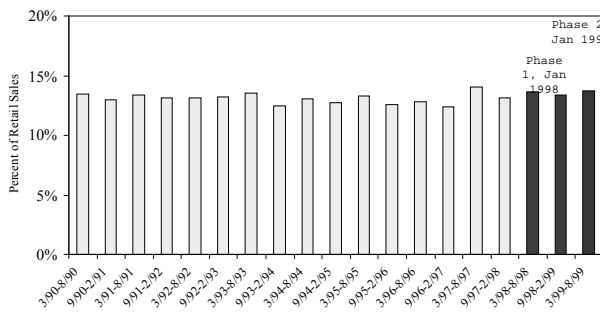
P-value of the law variable from linear regression model = 0.83 (adjusted for time, season, population, and unemployment).

Figure 10. Percent of Retail Sales from Eating and Drinking Establishments, Erie County, 1990 to 1999



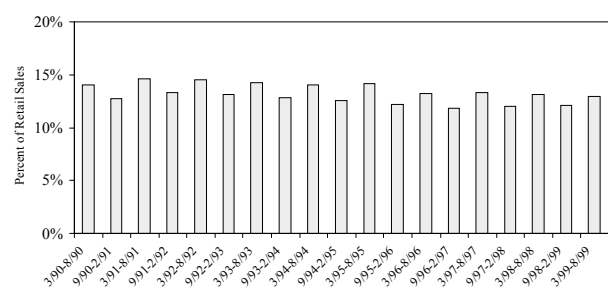
P-value of the law variable from linear regression model = 0.19 (adjusted for time, season, population, and unemployment).

Figure 11. Percent of Retail Sales from Eating and Drinking Establishments, Monroe County, 1990 to 1999



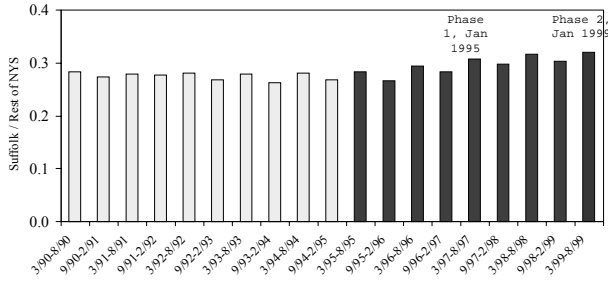
P-value of the law variable from linear regression model = 0.77 (adjusted for time, season, population, and unemployment).

Figure 12. Percent of Retail Sales from Eating and Drinking Establishments, Rest of New York State, 1990 to 1999



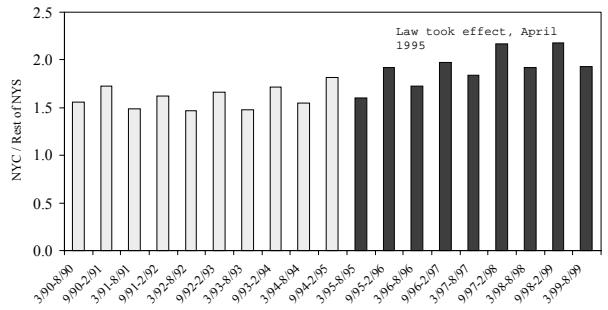
P-value of the law variable from linear regression model = 0.83 (adjusted for time, season, population, and unemployment). The Rest of New York State is all counties except New York City, Erie, Monroe, Sullivan, and Westchester.

Figure 13. Taxable Sales from Eating and Drinking Establishments, Suffolk County vs. Rest of New York State, 1990 to 1999



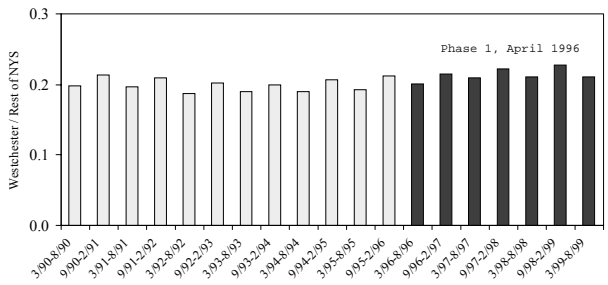
P-value of the law variable from linear regression model = 0.95 (adjusted for time, season, population, and unemployment). The Rest of New York State is all counties except New York City, Erie, Monroe, Suffolk, and Westchester.

Figure 14. Taxable Sales from Eating and Drinking Establishments, New York City vs. Rest of New York State, 1990 to 1999



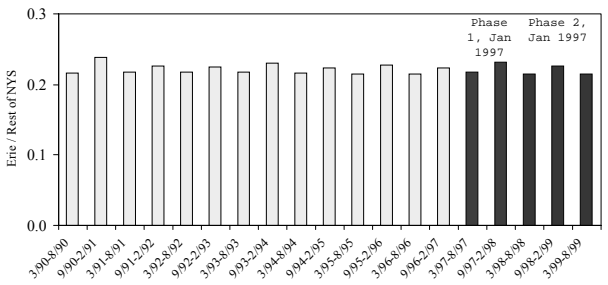
P-value of the law variable from linear regression model = 0.02, positive association (adjusted for time, season, population, and unemployment). The Rest of New York State is all counties except New York City, Erie, Monroe, Suffolk, and Westchester.

Figure 15. Taxable Sales from Eating and Drinking Establishments, Westchester County vs. Rest of New York State, 1990 to 1999



P-value of the law variable from linear regression model = 0.08 positive association (adjusted for time, season, population, and unemployment). The Rest of New York State is all counties except New York City, Erie, Monroe, Suffolk, and Westchester.

Figure 16. Taxable Sales from Eating and Drinking Establishments, Erie County vs. Rest of New York State, 1990 to 1999



P-value of the law variable from linear regression model = 0.15 (adjusted for time, season, population, and unemployment). The Rest of New York State is all counties except New York City, Erie, Monroe, Suffolk, and Westchester.

Figure 17. Taxable Sales from Eating and Drinking Establishments, Monroe County vs. Rest of New York State, 1990 to 1999

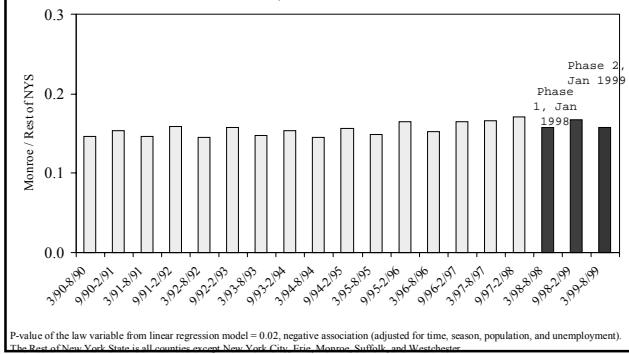


Table 1. Summary of the Effective Dates of Regulations in Counties with Stringent Smoke-free Regulations Studied in this Report.

	<b>Suffolk</b>	<b>New York City</b>	<b>Westchester</b>	<b>Erie</b>	<b>Monroe</b>
Date Effective	Jan. 1995, with a Mar. 1999 phase-in	Apr. 1995	Apr. 1996 with a Jan. 2000 phase-in	Jan. 1997 with a Jan. 1998 phase-in	Jan. 1998 with a Jan. 1999 phase-in

NOTE: These regulations typically eliminate smoking in the indoor dining areas of restaurants and require separately ventilated areas where smoking is allowed

Table 2. Comparisons of Taxable Sales for Eating and Drinking Establishments 1 Year Before Smoke-free Regulations to the Present. Data in table represents real taxable sales (in thousands of dollars), the percent change compared to the data point 1 year before the law in a particular county, and the percent change in sales in the rest of NYS for the same time period.

Date	<b>Suffolk</b>			<b>New York City</b>			<b>Westchester</b>		
	Phase 1, 1/95; Phase 2, 3/99	% Change from Baseline - Suffolk	% Change from Baseline - Rest of NYS	April 1995	% Change from Baseline - New York City	% Change from Baseline - Rest of NYS	Phase 1, 1/96; Phase 2, 1/00	% Change from Baseline - Westch.	% Change from Baseline - Rest of NYS
3/94 - 8/94	511,496			2,826,249			347,848		
3/95 - 8/95									
3/96 - 8/96	501,028	-2.0%	-6.7%	2,930,318	3.7%	-6.7%	363,337	4.5%	-3.6%
3/97 - 8/97									
3/98 - 8/98									
3/99 - 8/99	604,127	18.1%	3.6%	3,650,034	29.1%	3.6%	397,789	14.4%	4.7%

Date	<b>Erie</b>			<b>Monroe</b>			<b>Rest of NYS</b>	
	Phase 1, 1/97; Phase 2, 1/98	% Change from Baseline - Erie	% Change from Baseline - Rest of NYS	Phase 1, 1/98; Phase 2, 1/99	% Change from Baseline - Monroe	% Change from Baseline - Rest of NYS	Taxable Sales	% Change from Baseline
3/94 - 8/94							1,825,325	
3/95 - 8/95							1,806,075	-1.1%
3/96 - 8/96	366,240						1,702,167	-6.7%
3/97 - 8/97				597,113			1,740,587	-4.6%
3/98 - 8/98	386,631	5.6%	5.9%				1,803,134	-1.2%
3/99 - 8/99	406,923	11.1%	11.1%	648,137	8.5%	8.6%	1,890,957	3.6%

Table 3. Comparisons of the Fraction of Retail Sales from Eating and Drinking Establishments 1 Year Before Smoke-free Regulations to the Present. Data in table represents this fraction, the percent change compared to the data point 1 year before the law in a particular county, and the percent change in sales in the rest of NYS for the same time period.

Date	Suffolk			New York City			Westchester		
	Phase 1, 1/95; Phase 2, 3/99	% Change from Baseline - Suffolk	% Change from Baseline - Rest of NYS	April 1995	% Change from Baseline - New York City	% Change from Baseline - Rest of NYS	Phase 1, 1/96; Phase 2, 1/00	% Change from Baseline - Westch.	% Change from Baseline - Rest of NYS
3/94 - 8/94	12.4%			24.3%					
3/95 - 8/95							12.6%		
3/96 - 8/96	11.5%	-7.3%	-6.4%	24.1%	-0.8%	-6.4%			
3/97 - 8/97							12.1%	-4.0%	-5.7%
3/98 - 8/98									
3/99 - 8/99	11.4%	-8.1%	-8.5%	25.8%	6.2%	-8.5%	12.2%	-3.2%	-8.5%

Date	Erie			Monroe		
	Phase 1, 1/97; Phase 2, 1/98	% Change from Baseline - Erie	% Change from Baseline - Rest of NYS	Phase 1, 1/98; Phase 2, 1/99	% Change from Baseline - Monroe	% Change from Baseline - Rest of NYS
3/94 - 8/94						
3/95 - 8/95						
3/96 - 8/96	15.0%					
3/97 - 8/97				14.1%		
3/98 - 8/98	15.6%	4.0%	-0.8%			
3/99 - 8/99	15.4%	2.7%	-2.3%	13.7%	-2.8%	-3.0%

Table 4. Comparisons of the Ratio of Sales from Eating and Drinking Establishments in Counties with Smoke-free Regulations to the Rest of New York State 1 Year Before Smoke-free Regulations to the Present. Data in table represents this ratio and the percent change compared to the data point 1 year before the law in a particular county.

Date	<u>Suffolk</u>		<u>New York City</u>		<u>Westchester</u>		<u>Erie</u>		<u>Monroe</u>	
	Phase 1, 1/95; Phase 2, 3/99	% Change from Baseline - Suffolk	% Change from Baseline - New York City April 1995	Phase 1, 1/96; Phase 2, 1/00	% Change from Baseline - Westch.	Phase 1, 1/97; Phase 2, 1/98	% Change from Baseline - Erie	Phase 1, 1/98; Phase 2, 1/99	% Change from Baseline - Monroe	
3/94 - 8/94	0.28		1.55		0.19					
3/95 - 8/95							0.22			
3/96 - 8/96	0.29	5.0%	1.72	11.0%				0.17		
3/97 - 8/97					0.21	8.3%				
3/98 - 8/98							0.21	-0.9%		
3/99 - 8/99	0.32	13.9%	1.93	24.5%	0.21	8.8%	0.22	-0.5%	0.16 -4.8%	