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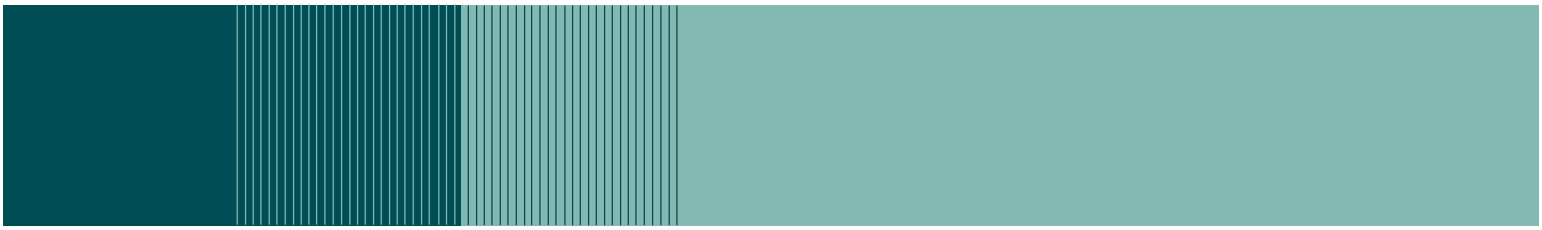
Village of Tinley Park

Study of Impact of Smoking Bans
Final



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About NERA

NERA Economic Consulting is an international firm of economists who understand how markets work. We provide economic analysis and advice to corporations, governments, law firms, regulatory agencies, trade associations, and international agencies. Our global team of more than 600 professionals operates in 22 offices across North and South America, Europe, Asia, and Australia.

NERA provides practical economic advice related to complex business and legal issues arising from competition, regulation, public policy, strategy, finance, and litigation. Our experience of more than 45 years creating strategies, studies, reports, expert testimony, and policy recommendations reflects our specialization in industrial and financial economics. Because of our commitment to deliver unbiased findings, we are widely recognized for our independence.

About the Authors

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Dr. Sabry has directed projects in matters relating to complex damages disputes, securities, mass torts, and international trade. This work has included both advisory consulting engagements and litigation support in cases that have culminated in trial or bankruptcy hearings.

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Mr. Patton is the co-author of a NERA working paper, *Determination of the Appropriate Event Window Length in Individual Stock Event Studies*. He holds an MSc in economics and economic history from the London School of Economics, and a BA in economics and a BA in history from the University of Michigan. He has earned the Chartered Financial Analyst (CFA) designation.

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I. Introduction and Summary of Findings

We have been asked by the Village of Tinley Park to conduct an economic analysis of the impact of smoking bans at the municipal level. We understand that the Village of Tinley Park enacted a Clean Air ordinance on January 2, 2007, which prohibits smoking in all public buildings and areas within the municipal corporate limits, including a comprehensive ban on smoking in bars and restaurants. After two weeks, the business community, in particular the owners of bars and restaurants, complained about the negative impact of the ban on business. As a result, the Village of Tinley Park suspended the ban in order to retain a third party to conduct an economic study.

The purpose of this study is to assess various aspects of smoking bans in communities that are comparable to the Village of Tinley Park, including legislation, mitigating efforts (exemptions and other measures designed to alleviate the economic impact on certain businesses), and effects on the local economy. The study constructs an original database and combines survey results, academic research and statistical analysis to: 1) quantify the short-term and long-term impact on sales in bars and restaurants of smoking bans enacted in communities comparable to the Village of Tinley Park; 2) summarize survey responses of comparable towns and key findings in the literature; and 3) assess exemptions that have allowed smoking under certain conditions in other communities that enacted bans.

Below is a summary of our research to date:

1. NERA conducted an extensive review of the academic and business literature to assess its findings. While many of the studies conclude that smoking bans do not have a measurable impact on sales in eating and drinking establishments, other studies conclude the opposite. In the absence of a state-wide ban, which would level the playing field for local businesses and eliminate substitutes for smokers, it is difficult to point to one study as the most appropriate to apply to the Village of Tinley Park. The same is true of the survey responses related to the short- and long-term impact of smoking bans in the comparable communities.
2. NERA documented examples of exemptions to smoking bans, which vary to fit the local needs of different communities.
3. Using objective and replicable criteria for income, population size and other demographic variables, NERA identified a sample of communities that are comparable to the Village of Tinley Park in Illinois and in other states. Some of the communities have enacted smoking bans and others have not. Working with the Village of Tinley Park, NERA

collected data on comparable communities that it identified. The database includes: the dates that smoking bans were enacted; details about the bans (for example, whether they included exemptions); sales tax revenues from bars and restaurants; and some demographic information. We collected sales tax revenues for each community, covering, where possible, a period from at least a year before to a year after the ban, by contacting the Departments of Revenue in different states.

4. Using this panel database of comparable communities over time, we employed statistical models to quantify the impact of smoking bans on bar and restaurant sales. (The models control for specific factors in towns and states.) We tested whether the ban had any impact during the first three months of its enactment, as well as whether there was an effect over longer time periods. Because two of the three Illinois communities in our sample (Evanston and Oak Park) recently enacted smoking bans in July 2006, we estimated separate models for Skokie, the one Illinois community in our sample with a sufficiently long time period after its smoking ban enactment to observe long-term effects.

The results of our statistical analysis are as follows:

1. There is a strong seasonal effect in the revenues of bars and restaurants for all communities across states. The models show a statistically significant positive effect for the second calendar quarter (April-June), and a negative effect (sometimes, but not always significant) for the first calendar quarter (January-March). The seasonality is also illustrated in the charts showing quarterly bar and restaurant sales tax receipts by community, both for communities where a smoking ban was enacted and for communities where no ban was enacted. See Exhibit III-5
2. Smoking bans do not have a long-term negative impact on changes in bar and restaurant revenue. We differentiated between the long-term and short-term effect of smoking bans by constructing indicators for the quarter during which a ban was enacted and for the quarters subsequent to the ban. One indicator would take the value one onwards in the first quarter that the ban was enacted; a second indicator would take the value one onwards in the second quarter after the ban was enacted; and so on.[1]
3. The analysis presented in Exhibit IV-3 shows a negative effect on bar and restaurant revenues in the first three months after a ban is enacted, but that impact is not statistically significant. There is also no significant effect over a longer period of time. This result holds whether we analyze all communities together or separately by state.
4. Our findings do not differ whether the enacted ban was comprehensive or partial.
5. A separate analysis of the Village of Skokie, Illinois shows that there was no statistically significant impact on bar and restaurant sales associated with the partial bans on smoking in restaurants adopted.[2]

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[1] We have constructed various types of indicators and the statistical results do not change.

[2] NERA undertook a separate analysis of Skokie because, as discussed below, it is the only community in Illinois that is both comparable to Tinley Park in population and income and that enacted a smoking ban long enough ago that significant post-ban sales tax data are available.

On July 7, 2003, Skokie enacted a ban on smoking in restaurants, but made an exemption for smoking in a restaurant's bar area. On July 7, 2004, the ban was amended to permit smoking in a restaurant's bar area only if

II. Literature Review

There is significant literature that analyzes the economic impact of restrictions on smoking in public places, bars, restaurants, and other businesses in the hospitality industry, and findings range from a decrease in revenues or loss of jobs to an increase in revenues to no impact at all. We briefly discuss the disagreement among economists on the need for and usefulness of a ban and then summarize the relevant empirical studies. Given that each community has its own specific characteristics and demographics, it is difficult to apply precisely the findings of any previous study to the specific circumstances of the Village of Tinley Park.

A. The Basis for Disagreements Among Economists on the Need for Bans

Economists disagree about the need for regulations such as smoking bans, a disagreement that has its basis in the economic discipline and is not specific to the issue of smoking in public places.

A famous theory in the economics of regulation known as the Coase Theorem states that a negative externality, such as smoking, can be internalized by the market without any regulation if certain conditions are satisfied. If these conditions hold, then there would be no need for any regulatory action such as a smoking ban because the market on its own will end up with the optimal allocation of resources as each consumer and producer makes choices to maximize his/her own utility. These conditions are zero transaction costs and well-defined property rights.[3] Zero transaction costs means there is full information and no costs of bargaining or enforcing contracts—conditions that are highly unlikely to hold in the real world.

To apply these ideas to the issue of smoking bans, some economists would argue that the space within a restaurant is private space that the owner can allocate between smokers and nonsmokers so as to maximize profits. Inasmuch as there is available information about the health risks of second-hand smoke, each patron can decide for herself whether to eat at a restaurant that allows smoking. Similar logic would apply to workers who can choose not to work at a restaurant that

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the bar area was physically separated from the restaurant area and also separately ventilated. At no time has smoking been banned in bar-only establishments in Skokie.

[3] Coase Theorem (1960).

allows smoking. If there is full information among the patrons, workers and owners of bars and restaurants and if there are no transaction costs, then there is no need for a ban. Each bar owner or restaurant owner will decide for himself how much space to allocate to smokers; patrons will select restaurants that best suit their needs; and workers will be able to move to a non-smoking facility if they so choose.[4]

The limitations of the applicability of this theory to the issue of smoking regulations have been discussed in detail in the academic literature. Consumers may not fully understand the risks of second-hand smoke, and workers may not have the option to move to other jobs. Still, this theory remains part of the basis for the dispute among economists on the need for any regulation or government intervention.

The Coase Theorem does not have much to do with what is equitable or fair, but rather focuses on efficiency in allocating resources. In contrast, equity and distributional effects are key issues for policymakers.

B. Studies of the Aggregate Economic Impact of Smoking Bans

Many of the empirical studies that have analyzed the economic impact of smoking bans have found little or no impact on the hospitality industry—bars, restaurants, gambling facilities and other establishments.[5] Some studies have found a negative impact on revenues from bars and restaurants, while others have found that a ban increased jobs or revenues.[6] Generally, these studies have assessed the impact of a ban either on revenues (usually measured using tax receipts) or on jobs in the hospitality industry. Some of the studies have attempted to control for factors other than a ban that might affect industry revenues or jobs.

See Exhibits II-1 for a summary of some of these studies. The summary includes: name of the author, purpose of study, funding source if available, date, variables used in the analysis, and key

[4] A 1996 study by Boyes and Marlow used survey data to assess the impact of a smoking ban on consumers in San Luis Obispo, CA and concluded that the ban benefited one group of consumers at the expense of another, but did not address whether the overall impact of a ban was positive or negative.

[5] Huang et al. (1995), Glantz and Smith (1994, 1997), Bartosch and Pope (1999, 2002), Huang (2004) and Scollo (2004).

[6] Fabrizio (1996) and REA (2004).

findings.[7] Exhibits II-2 and II-3 reproduce lists of additional studies of smoking bans from published literature reviews.

The differences in findings can be partly explained by the use of limited data and/or the extent to which community demographics are controlled for. In addition, some studies focused on communities where businesses had not yet felt the full effect of a ban because it had only recently been implemented. Some of the studies were criticized for not taking into account the distributional effects of a ban.

As previous studies do not focus on communities that are demographically comparable to the Village of Tinley Park, it is not clear how the results of these studies would be directly applied to the case of the Village of Tinley Park.

C. Impact of Bans on Smoking Rates

Economists have also examined the impact of smoking bans on smoking rates, with some focusing on teenage smoking.[8] Chaloupka and Wechsler (1995) found that restrictions on smoking in restaurants reduced smoking rates among teenagers. Researchers have also examined territorial bans using indices of regulation. These studies have shown that the effectiveness of these types of bans in reducing smoking rates varies by location and that assessing the impact requires micro-level data. Exhibit II-4 summarizes the findings of some of these studies.

D. Mitigating Efforts

NERA researched the measures implemented by various communities to mitigate the economic effect of a smoking ban, for example by exempting certain establishments. Exhibit II-3 summarizes our findings to date.

[7] This list is not meant to be comprehensive, but reflects studies that are published in academic journals, as well as non-academic studies about bans in New York and Massachusetts.

[8] Goel and Nelson, 2006.

E. Survey responses

We examined the responses of comparable towns to questions about the long- and short-term effect of smoking bans on their communities. As shown below, the towns differed quite a bit in their answers. Of the 22 communities which responded to a question on the short-term effect of the ban, seven reported no drop in revenues of bars and restaurants, two reported an increase , and thirteen reported a decline in revenues. When asked whether there is a drop in revenues of bars and restaurants six months after the ban, 24 communities responded, 11 answered no, one said there was an increase, and 12 answered yes. The responses are mixed at best. Some said the drop or increase in revenues of bars and restaurants has been anecdotal, while others said there were an increase in some businesses and a drop in others.

Tinley Park Smoking Ban Analysis
Summary of Survey Responses

Did bars and/or restaurants report a drop in revenues in the first few months after the ban went into effect?

No	7
Increase Reported	2
Yes	7
Yes, with Comments	6

Comments:

"Some reported drops but some others reported increases."

"Yes, several restaurants reported a drop in revenues and a few even went out of business. The reason for closing was often the ban, but prior problems were present in all of the cases such as low sales or aging owners who wanted to sell. "

"Some claimed that they did, no substantiating data was received. They were concerned because neighboring towns did not have bans."

"They did report drops but Brookline hired a firm to do an economic analysis to assess the sales tax data which found that there was no drop."

"Yes. However, it was all anecdotal. There was never any data shown to prove this."

"Yes, anecdotal. Showed up at public hearings. Some were reporting as much as 50%. "

After six months of the smoking ban, did bars and/or restaurants report a drop in revenues? Was there a drop in employment?

No	11
Increase in Revenues Reported	1
Yes	5
Yes, with Comments	7

Comments:

"Yes there was a drop in some businesses, but an increase in others."

"A few specialized, small businesses anecdotally reported drops, no evidence was shown."

"Yes. They continued to report. They would say they would lose business, local news cameras were showing lines waiting outside to get into the businesses. "

"Only the places that were primarily drinking establishments continued to report revenues. Of the three that closed down all have re-opened under new management or as a new restaurant. "

"Yes, verbally, nothing documented. Other towns adjacent to Braintree began to implement smoking bans."

"Some after six months but after a year none."

"Yes. There was no evidence to support this. "

III. Methodology

We identified a sample of communities in Illinois and elsewhere that are comparable to the Village of Tinley Park in population, income, climate and proximity to an urban area. Our sample includes both communities that enacted full or partial smoking bans (not concurrent with a state-wide or county-wide ban) and a "control group" of similar communities that did not enact a ban. We used a combination of survey, telephone and internet research to obtain the correct timing and nature of smoking bans in our sample. We collected data from state governments on sales tax revenue from restaurants and bars in these communities. The process of constructing the database is described in more detail below.

A. Selection of Comparables

We first identified a sample of communities in Illinois that have enacted smoking bans. We identified 36 communities that enacted bans, of which 13 were comparable to the Village of Tinley Park in terms of population, income level and proximity to other cities and communities.[9] However, most communities in Illinois that have enacted smoking bans did so quite recently – in a majority of cases on January 1, 2007 or later. For most of these communities, therefore, little or no data are available on restaurant and bar sales taxes subsequent to a smoking ban: specifically, for 10 of the 13 comparable Illinois communities, no useable post-ban revenue data are available.[10] For two of the Illinois communities – Oak Park and Evanston – data are available for only a single quarter. The remaining Illinois community, Skokie, implemented a partial ban on smoking in restaurants on July 2003 and then amended the ban on July 2004 (the amendment strengthened the ban, but it remained partial). Sales tax data for Skokie are thus available for at least a year following the implementation of both the initial partial ban and the amendment.

A list of Illinois communities that enacted smoking bans, with dates of enactment and additional detail about the characteristics of the bans, is included as Exhibit III-1.

[9] We set forth our criteria in greater detail below.

[10] For nine communities, no post-ban revenue data are available. The tenth, Park Ridge, enacted a ban on September 3, 2006. While bar and restaurant sales tax revenue are available for Park Ridge for the third quarter of 2006, that quarter only includes 28 days during which the ban was in effect, insufficient data to measure any effect of the ban on sales.

To enlarge our sample, we identified comparable communities outside of Illinois that have enacted smoking bans. We first identified states in which we were likely to find comparable communities that had enacted bans. To do this, we consulted a list of all US municipalities that have enacted full bans on smoking in either restaurants, bars or both, compiled by the American Non-Smokers' Rights Foundation (ANRF).[11] We narrowed our list of states to those where at least one community comparable in population and income to the Village of Tinley Park[12] was identified by ANRF as having implemented a full ban on smoking in restaurants and/or bars at least one year ago, and at least one year before any state-wide or county-wide ban.[13] (We required the year interval to allow sufficient time subsequent to the ban to measure its effect.)[14]

We excluded any state with a climate significantly different from the Village of Tinley Park's. Specifically, we excluded warm-weather states like Florida or California, where a smoking ban might have a more modest effect on restaurant and bar sales than in the Village of Tinley Park. In cold weather, bar and restaurant patrons may object to having to go outdoors to smoke, and therefore may stay home or travel to an establishment in a neighbouring community without a ban. In warmer weather, however, this effect may be muted. We also excluded Alaska, where a significantly colder climate might mean that patrons are *more* reluctant to smoke outside than in the Village of Tinley Park.

The states, other than Illinois, that (a) had at least one comparable community with a relevant ban and (b) met our climate criteria were: Colorado, Massachusetts, Minnesota, Ohio and Wisconsin. We determined, however, that Ohio, Minnesota and Wisconsin do not report restaurant and bar sales tax at the community level and therefore cannot be used in our analysis

[11] The ANRF list includes any community that enacted a full ban on smoking in restaurants or bars since 1990. The list excludes bans that allow exemptions such as for smoking in separately ventilated rooms or for smoking in establishments below a certain size. The ANRF list includes the date of each ban.

[12] For population to be considered comparable, the community was required to have had a population of between 25,000 and 100,000 according to the 2000 Census; for income to be considered comparable, the median household income of the community was required to be within 25% of Tinley Park's median household income of $61,648 (i.e., to be considered comparable in terms of income, a community's 1999 median household income had to fall between $46,236 and $77,060). The population and income criteria are described in more depth below.

[13] The ANRF list did not include communities with partial bans on either bars or restaurants, for example a ban that allowed smoking within a separately ventilated area. Thus we were unable to identify states with comparable communities that enacted only partial bans but with no comparable community that enacted a full ban on either bar or restaurant smoking.

[14] We did include in our analysis two communities from Illinois – Oak Park and Evanston – even though the bans were implemented only on July 1, 2006, because we felt these communities – like Tinley Park, both in the Chicago area – might be of particular relevance.

(more detail on the collection of sales tax data is below). Aside from Illinois, then, only Colorado and Massachusetts had a similar climate, relevant smoking bans in comparable communities according to ANRF and useable sales tax data. Exhibit III-2 shows, for each US state, whether we included communities from that state in our sample and, if not, why a state was excluded.

We then obtained data on income and population for every community in Colorado, Illinois and Massachusetts and identified communities comparable to the Village of Tinley Park based on the following criteria:[15]

- The community's 2000 population must have been between 25,000 and 100,000, according to the Census Bureau, broadly comparable to the Village of Tinley Park's 2000 population of 48,327;
- The community's 1999 median household income according to the Census Bureau must have been within 25 percent of the Village of Tinley Park's 1999 median household income of $61,648 (i.e., to be considered comparable, a community's 1999 median household income had to fall between $46,236 and $77,060);
- In 2000, at least 75 percent of the community's residents must have lived in an area sufficiently densely populated for the US Census Bureau to designate it as "urban" (for the Village of Tinley Park, 99.3% of the village population was considered urban).
- In 2000, the community must have been within 25 miles of a city of at least 100,000 residents according to the US Census Bureau *or* must have been within a primary metropolitan statistical area (PMSA) as defined by the federal government.[16]

[15] We also obtained demographic data for communities in Ohio, Minnesota and Wisconsin prior to determining that community-level sales tax data was not available.

[16] The census defines a PMSA as follows: "A geographic entity defined by the federal Office of Management and Budget for use by federal statistical agencies. If an area meets the requirements to qualify as a metropolitan statistical area and has a population of one million or more, two or more PMSAs may be defined within it if statistical criteria are met and local opinion is in favor. A PMSA consists of one or more counties (county subdivisions in New England) that have substantial commuting interchange."

A metropolitan statistical area (MSA) is defined as follows: "A geographic entity defined by the federal Office of Management and Budget for use by federal statistical agencies, based on the concept of a core area with a large population nucleus, plus adjacent communities having a high degree of economic and social integration with that core. Qualification of an MSA requires the presence of a city with 50,000 or more inhabitants, or the presence of an Urbanized Area (UA) and a total population of at least 100,000 (75,000 in New England). The county or counties containing the largest city and surrounding densely settled territory are central counties of the MSA. Additional outlying counties qualify to be included in the MSA by meeting certain other criteria of metropolitan character, such as a specified minimum population density or percentage of the population that is urban. MSAs in New England are defined in terms of minor civil divisions, following rules concerning commuting and population density."

We then worked with the Village of Tinley Park to design a survey that village staff sent to all the comparable communities identified. The survey asked whether the community had enacted a smoking ban, what the date of the ban was, whether the ban was ever repealed and whether it allowed exemptions (for example, smoking in bars but not restaurants, or smoking in separately ventilated areas within bars and/or restaurants).[17]

NERA and Village of Tinley Park staff supplemented the surveys with follow-up phone calls to the communities and Internet research to clarify the nature and timing of smoking bans enacted. Based on the results of the survey and additional research, we classified communities into two groups: communities that have enacted at least one smoking ban and "control-group" communities that have not enacted any ban.[18]

The lists of comparable communities by state are included as Exhibit III-2 (communities for which it was established that a ban was enacted) and Exhibit III-3 (communities for which either it was established no ban was enacted or for which it could not be established whether a ban was enacted).

B. Collection of Sales Tax Data

We contacted state governments in Colorado, Massachusetts, Minnesota, Ohio and Wisconsin about obtaining sales tax data for restaurants and bars at the community level. As noted above, representatives from the state governments in Ohio, Wisconsin and Minnesota informed us that community-level sales tax data are not currently available. For Illinois and Colorado, quarterly data on combined sales tax revenue from eating and drinking establishments are available at the community level. For Massachusetts, monthly community-level data are available on revenue

[17] The survey also asked whether there were any other significant relevant events around the time of the ban, for example the opening of a chain restaurant. Additionally, the survey asked a number of questions about the community's experiences after enacting a ban (if a ban was enacted), such as whether members of the community or business owners made any complaints. However, it became apparent after receiving responses that communities were not interpreting the questions uniformly. This, combined with the often anecdotal and subjective nature of the responses, made the responses to these questions of limited usefulness.

[18] We discarded communities for which definitive information about a smoking ban could not be determined by survey, phone calls or internet research. We also excluded certain communities that enacted minor smoking bans, for example only on restaurants of a certain size. These bans were not significant enough to have a significant expected effect on revenue, but because some ban was in effect, they also were not appropriate for use in our control group.

from the state's "meals tax." We verified that the types of establishments covered are similar for the three states.[19]

For Massachusetts, an additional data issue relates to the reported community-level meals tax revenue: chain restaurants in Massachusetts report tax revenue in the community where the chain is ***headquartered*** rather than where each restaurant is located. This will affect the meals tax data in two ways: first, sales in any community's chain restaurants (with headquarters elsewhere) will be excluded from the community's reported meals tax revenue; second, for communities where chain restaurants are headquartered, taxes levied on sales at chain restaurants outside the community – and hence not subject to any smoking ban that the community enacts – will be counted as part of the community's meals tax revenue.

The first issue alone should not distort measurement of the effect of a smoking ban: for a community with some chain restaurants (but no chain-restaurant headquarters), it is possible to measure a smoking ban's effect on the non-chain restaurants in the community. The second issue – communities where one or more chain headquarters are located – could potentially be more serious: Sales tax revenue from chain restaurants outside the community, and therefore not subject to the smoking ban, can distort measurement of the ban's effect on local restaurants. We therefore identified all Massachusetts communities with chain restaurant headquarters in our sample using RestaurantChains.net, a provider of data on the chain restaurant industry.[20] Six Massachusetts communities that enacted bans – Agawam, Brookline, Dartmouth, Plymouth, Somerville and Woburn – are home to the headquarters of at least one restaurant chain. Two of

[19] Illinois, Colorado and Massachusetts use categories to classify the restaurant industry that differ only slightly from one another. Illinois uses Standard Industrial Classification (SIC) codes, Colorado uses North American Industry Classification System (NAICS) codes, and Massachusetts has a separate "meals tax" that applies to all drinking and eating establishments. The relevant industry codes for Illinois and Colorado, respectively, are SIC Code 581, "Eating and Drinking Places," and NAICS Code 722, "Food Services and Drinking Places." These two categories are essentially the same, differing only in that SIC Code 581 excludes "Dining Car Operations on a Fee or Contract Basis" (SIC 4789), which NAICS Code 722 includes, while NAICS Code 722 excludes "Theater Companies and Dinner Theaters" (NAICS 711110), which SIC Code 581 includes. The Massachusetts meals tax applies to "any eating or drinking establishment — whether stationary or mobile, temporary or permanent — that is primarily engaged in the business of selling [any food and/or beverage that has been prepared for immediate human consumption] for which a charge is made," which appears consistent with the establishments covered by SIC Code 581 and NAICS Code 722.

[20] See http://www.restaurantchains.net/. The data from RestaurantChains.net are for 2006-2007. Ideally, we would like to have obtained data on where restaurant chains were headquartered as of the time of the smoking ban, but we could not obtain historical data on chain ownership.

our control communities – Franklin and Waltham – are also the headquarters of restaurant chains.

Finally, we graphed and reviewed the sales tax data for all communities. The data for two communities in Massachusetts – Woburn and Bridgewater – showed large anomalous jumps that indicated potential errors. We thus excluded Woburn and Bridgewater from our sample.

Graphs of quarterly sales tax revenue from restaurants and bars in each community in our sample that enacted a ban, along with sales tax revenue from the control-group communities in the same state, are included as Exhibit III-5.

C. Characteristics of Sample

Our final sample includes 19 communities comparable to the Village of Tinley Park that enacted smoking bans – three in Illinois, two in Colorado and 14 in Massachusetts. Four of the Massachusetts communities – Brookline, Somerville, Braintree and Saugus – initially enacted a partial ban and later replaced that with a comprehensive ban. One Illinois community, Skokie, initially implemented a partial ban and subsequently amended the ban to make it stricter. The amended ban, however, remained partial. For two of the Illinois communities (Evanston and Oak Park), only one-quarter of post-ban sales tax data are available; for one Colorado communities (Longmont), only three-quarters of post-ban sales tax data are available; for two Massachusetts communities (Beverly and Somerville in the case of its second, comprehensive ban), only three-quarters of post-ban sales tax data are available. For all other communities, at least four-quarters of post-ban are data available. Of the Massachusetts communities, five are headquarters of restaurant chains. Because of the potential distorting effect of chain-restaurant revenue on these five communities, we estimated our statistical analyses both including and excluding them. Whether we included these five communities did not meaningfully affect our results.

Our sample also includes 17 control-group communities that did not enact a ban – 11 in Illinois, two in Colorado and four in Massachusetts.[21]

[21] Of the Massachusetts control-group communities included, two are headquarters of restaurant chains. However, because communities that did not enact smoking bans are included to control for factors other than smoking bans

As a final step, we checked maps of the communities to ensure that no community that enacted a ban was surrounded by other communities that had also enacted bans (this would make it difficult for residents to drive to neighbouring communities where smoking is allowed in bars and restaurants, as they can do in the Village of Tinley Park). Maps of the comparable communities are included as Exhibit III-6.

IV. Statistical Analysis

We constructed a panel data set of the communities in Illinois, Massachusetts and Colorado that enacted one or more smoking bans as well as towns in the same states that did not enact a ban. The panel database contains the following variables: income in each community, population, indicators to account for quarterly fluctuations (for example due to seasonal effects), dates of each smoking ban (if there were any), and whether each ban was comprehensive or partial. Each observation in our data represents information on a given town at a point in time.

We specified the basic model as follows: The change in sales tax receipts from bars and restaurants in community a at time t is a function of the indicators for seasonal effects and smoking ban indicators. In certain specifications we also added indicator variables for whether there were exemptions to the ban. Our panel used quarterly data.

We defined the change in bar and restaurant sales as the quarterly difference in log tax receipts for each community over time. The smoking ban indicators were defined slightly differently from the way many previous studies defined them. We defined two different sets of smoking ban indicators, one to measure the potential incremental effects of the smoking bans and another to measure cumulative effects of the ban. The incremental ban indicators were set up as follows: We defined banlag0 as an indicator that takes the value 1 in the quarter the ban was enacted and zero otherwise, banlag1 as an indicator that takes the value 1 in the quarter following the enactment of the ban and zero otherwise, and so on. The hypothesis is that there could be a lag between the enactment of the ban and its impact on sales of bars and restaurants. Another hypothesis is that the ban would initially cause a temporary drop in sales taxes of bars and restaurants, but then businesses would adjust to the ban, making the impact temporary.

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that might affect sales tax revenue, it should not be problematic for chain restaurant revenues to be included for the control-group communities.

The cumulative ban indicators were defined as follows: lag0 would take the value 1 in the quarter in which the ban was enacted onwards, lag1 would take the value 1 in the quarter after the ban was enacted onwards, lag2 would take the value 1 two quarters after the ban was enacted onwards.[22]

We tested factors such as whether the ban was comprehensive and the type of smoking ban exclusions in bars and restaurants as explanatory variables, but these factors do not seem to affect the changes in sales taxes of bars and restaurants.

We used panel regression techniques to analyze whether smoking bans had an impact on the changes in sales taxes from bars and restaurants. We ran fixed-effects panel regressions that take into account community- and state-specific effects. The coefficients on the ban indicators reflect the percentage change in sales tax receipts from bars and restaurants as a result of the smoking ban. We analyzed the data for each state separately and for all three states together. Our results are presented in Exhibit IV-1.[23]

Skokie was the only town in our Illinois sample that enacted bans (which, as noted above, were both partial) and had sufficient post-ban sales tax data to measure any short-term and long-term effects. For that reason, we report results from separate regressions estimated to measure any impact of the smoking bans enacted in Skokie. None of these regressions showed any significant negative or positive impact of those bans.

V. Conclusion

A review of available studies on the economic effects of smoking bans reveals a wide range of results, ranging from a negative impact to no impact to a positive impact on the hospitality

[22] For those communities that enacted a partial ban and subsequently amended the ban to strengthen it (as described in section III-C), we tested several alternate regression specifications to measure the incremental and cumulative impacts of the initial ban and the amended ban. The results presented in Exhibit IV-1 include indicator variables only for the second, stronger ban; results in the alternative specifications were not qualitatively different (i.e., we still found no long-term negative impact of a ban on the revenues from bars and restaurants).

[23] To ensure that our results were robust (i.e., not sensitive to choice of regression specification), we tested a number of alternate specifications in addition to those shown in Exhibit IV-1. The alternate specifications included the addition of indicator variables for different types of exemptions and alternate treatment of those communities in our sample that enacted multiple bans (as described in footnote 22 above). Our finding of no long-term negative impact of a ban on the revenues from bars and restaurants is unchanged in these alternate specifications.

industry in communities that have enacted bans. Part of the explanation for this difference may lie in the nature of the communities under study, in the design of the studies, and, possibly, in the mitigating efforts that some communities undertook to counter potential negative effects.

We conducted an empirical study of the impact of smoking bans on towns comparable to the Village of Tinley Park in terms of income, population, and degree of urbanization. Our data included comparable towns that enacted a ban and others that did not, and included quarterly data on the tax revenues from bars and restaurants before and after smoking bans were adopted.

The statistical analysis shows no long term negative impact of a ban on the revenues from bars and restaurants for the communities in our sample. We find a negative effect in the first three months in which a ban is enacted, but that impact is not statistically significant. There is no significant effect over a longer period of time. This result holds whether we analyze all communities together or separately by state. There is also a strong seasonal effect on quarterly bar and restaurant tax revenue data, which is present consistently across the different communities and states examined in our study.

Exhibit II-1

Tinley Park Smoking Ban

Summary of Smoking Ban Studies

Authors	Locations	Date	Financed By:	Issue Studied	Data Collected	Main Findings
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Adams & Cotti	Nationwide	2007	No funding source stated	Economic impact of smoking ban on bars and restaurants	Industry specific, quarterly, county-level employment data	Negative impact on employment in bars, neutral or positive effect on employment in restaurants. Impact on bars greater in areas with more smokers. Impact on restaurants greater in warmer areas and areas with fewer smokers.
	NY	July 2006	NYS Dept of Health	Health and economic impact of smoking ban.	Surveys, direct observation; sales tax receipts	Fewer people exposed to second-hand smoke; high compliance and public support; no adverse impact on businesses
RTI	NY	August 2005	NYS Dept of Health	Economic impact of smoking ban on bars and restaurants	Tax receipts for bars and restaurants; total retail trade '99 - '04	No adverse economic impact on revenue for bars and full-service restaurants

Authors	Locations	Date	Financed By:	Issue Studied	Data Collected	Main Findings
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	NYC	March, 2004	NYC Dept of Finance NYC Dept of Health NYC Dept of Small Business NYC Econ Development	Did the law hurt businesses?	Bar and restaurant tax receipts; bar and restaurant employment; bar and restaurant openings and closings; compliance; public opinion; workplace air quality; worker protection	Businesses are thriving, and workers are breathing cleaner, safer air.
REA	NY	May 2004	NY Nightlife Association Empire St. Rest & Tavern assoc.	The direct and indirect economic impact of the ban on bars, taverns, and clubs	Industry employment; average wages	There has been a dramatic loss in revenue and jobs.
	NYC	July 2003	NYC Dept of Health	Impact of smoking ban on employment	Number of Jobs	The number of jobs has increased
Hyland, Puli, Cummings, Sciandra	NYC Suffolk Erie Monroe Westchester	2003	Cornell Hotel & Restaurant Robert Wood Johnson Foundation NYS Dept. of Health Flight Attendants Medical Research	Economic impact of smoking ban on smoke-free dining areas in restaurants unless area has a separate ventilation system	Taxable sales receipts; hotel employment	Smoke-Free legislation was not associated with adverse economic outcomes
Hyland	NYC Suffolk Erie Monroe Westchester	June 2002	Roswell Park Cancer Institute Robert Wood Johnson Foundation NYS Dept. of Health	Impact of smoking ban on taxable sales in restaurants with smoke-free dining areas unless area has a separate ventilation system	Taxable sale receipts 1990 - 1999	No change in taxable sales receipts

Authors	Locations	Date	Financed By:	Issue Studied	Data Collected	Main Findings
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Hyland & Tuk	NYC	2001	No funding source stated	Impact of smoking ban on restaurant employment	Number of employees	22,000 additional employees between 1994 and 1999
Hyland, Vena, Cummings, Lubin	Erie County NY	2000	J.of Pub. Health Manag. Practices National Cancer Institute	Impact of smoking ban on restaurant employment	Number of employees	No significant change
Glantz & Charlesworth	NYC	1999	Journal of American Medical Assoc. National Cancer Inst. E & H Everett	Impact of smoking ban on hotel revenues and hotel revenues as fraction of total retail sales	Taxable sales receipts	No adverse impact
Hyland & Cummings	NYC	1999	J.of Pub. Health Manag. Practices Robert Wood Johnson Foundation	Comparison of absolute and relative county specific changes in the number of restaurants and restaurant employees	Number of restaurants; employment	Increase in number of restaurants and employment in 9 out of 10 regions. Decline in 10th region likely due to decline in population.
Hyland, Cummings, Naunberg	NYC	1999	J.of Pub. Health Manag. Practices Robert Wood Johnson Foundation	Impact of smoking ban on taxable sales in restaurants with more than 35 indoor seats	Taxable sales receipts; total taxable sales	Real taxable sales increase in NYC
Hyland & Cummings	NYC	1999	J.of Pub. Health Manag. Practices Robert Wood Johnson Foundation	Association between smoke-free law and business decrease	Proprietor estimate of sales changes based upon a telephone survey	Smoke-free policy not associated with reports of decreased revenue
Lilley & DeFranco	NYC	1996	No funding source stated	Restaurant employment	Numbers of jobs from 93-96	2,779 restaurant jobs lost

Authors	Locations	Date	Financed By:	Issue Studied	Data Collected	Main Findings
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Corsun et al	NYC	1996	Cornell Hotel and Restaurant Cornell Cntr for Hospitality Research	Impact of smoking ban on restaurant patronage	Community estimates of frequency of and time spent dining out, purchasing take-out food and patronizing bars, spending patterns	Smokers are dining out less and non-smokers are dining out more
Fabrizio, Mclaughlin and Associates	NYC	1996	No funding source stated	Revenue loss in smoke-free restaurants	Restaurateurs' estimates of impact on sales, employee lay offs	Average revenue loss was 19.9%
Penn & Schoen	NYC	1995	NY Restaurants and Tavern Assoc. Phillip Morris USA	Whether smoking regulations are hurting their business	Proprietor estimates of impact on business	63% said smoking regulations were hurting their business
Price Waterhouse	NYC	1995	NY Restaurants and Tavern Assoc. Phillip Morris USA	Whether smoking regulations are hurting businesses	Proprietor estimates of change in sales	41% said sales receipts were lower
Connolly, Carpenter, Alpert, Skeer	MA	April 2005	Division of Pub. Health Practice Harvard School of Pub. Health	Economic impact of smoking ban.	Meals tax; alcohol excise tax; employment figures; keno sales	Unchanged and/or no statistically significant change
Glantz, Wilson-Loots	MA	2003	National Cancer Institute Grant	Did the net profit of smoke-free bingo halls change?	Net profits/losses from bingo games	Adjusted profits did fall overtime, but fall was same in both smoke and smoke-free halls

Authors	Locations	Date	Financed By:	Issue Studied	Data Collected	Main Findings
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bartosch & Pope	MA	2000	Mass. Dept of Pub. Health Tobacco Control Program Robert Wood Johnson Foundation	How are local restaurants impacted?	Taxable sales receipts of all eating and drinking establishments compared to non-adopting communities	No substantial impact
Bartosch & Pope	MA	1999	Public Health Manag. Practice Health Protection Fund	Was there a statistically significant change in town taxable sales receipts?	Taxable sales receipts from all eating and drinking establishments. Also included some stores that are not primarily engaged in selling meals but contain a section from which meals are sold	No statistically significant change in town taxable sales receipts
Bartosch & Pope	MA	April 1997	Health Econ. Research Mass. Dept. of Pub. Health Tob. Ctrl	How did the law impact taxable sales?	Tax meal receipts	The smoke-free ban actually increased restaurant receipts
Lilley & DeFranco	MA	1996	Context, Inc. Massachusetts Restaurant Assoc.	How did the law impact employment?	Number of restaurant jobs from '93 - '95	71% of the communities that enacted smoking bans lost jobs
Bartosch & Pope	Brookline, MA	Nov. 1995	Health Econ. Research Mass. Dept. of Pub. Health Tob. Ctrl	How did the law impact taxable sales?	Taxable sales receipts for restaurants in Brookline, four comparison cities, and the state aggregate	Brookline's taxable sales receipts followed normal seasonal variations.

Exhibit II-2
List of Tobacco Industry-Sponsored Studies from American Non-Smokers' Rights Foundation

- **Deloitte & Touche LLP, Washington, D.C.:**
  The Impact of Non-smoking Ordinances on Restaurant Financial Performance, 2003.
  The National Restaurant Association (NRA) funded study sought to estimate the economic impact of smokefree restaurants and dining areas based on the self-reported sales and profits of individual restaurants. Deloitte & Touche cherry-picked restaurants around the U.S. for their data set, eliminating fast food restaurants, all restaurants that are covered by statewide 100% smokefree laws, all restaurants with annual sales of less than $50,000, and all restaurants with annual sales greater than $10 million. The firm was left with only 232 restaurants (down from 3145) covered by any smokefree ordinance. Consequently, their results are inconsistent, determining that the majority of specific ordinances had negative effects but that a few had positive effects. Due to their exacerbated categorization process, the authors preface the study with a statement that reads, "[E]stimates should be interpreted with caution." The NRA received a Philip Morris grant of $75,000 in 2002 for the purpose of conducting "restaurant industry research on [the] economic impact of smoking bans." (Bates No. 2085688826)

- **Dunham and Marlow, United States:**
  Smoking laws and their differential effects on restaurants, bars and taverns, 2000.
  The study, conducted by at least one employee of the Philip Morris Management Group, measured the probability that an owner with a particular set of attributes will predict that smoking bans cause decreased revenues. The study predicts 38% of establishments will have decreased revenues, but sales tax revenue data does not support this conclusion. A key attribute measured in the study was the size of an establishment's smoking and nonsmoking sections. However, only 5 of the 32 states with smoking restrictions had size requirements for smoking and nonsmoking sections. Also, several states preempt local smoking ordinances. These errors invalidate the conclusions drawn from the misconstrued data.

- **David Sollars and Jerry Ingram, of Auburn University-Montgomery, Montgomery, AL:**
  Economic Impact of the Restaurant Smoking Ban in the City of Boston, Massachusetts, 1999.
  The study asked restaurant managers to estimate the impact of the Boston smokefree restaurant ordinance two months after it went into effect. The questionnaire inquired about restaurant managers' feelings about the impact of the ordinance on employment, tipping, revenue, etc. The study was sponsored by the International Society of Restaurant Association Executives (ISRAE) and funded by the Accommodation Program through Options, Philip Morris U.S.A.

- **InContext, Washington, D.C.:**
  The Impact of Smoking Restrictions on the Bar and Tavern Industry in California, 1999.
  The study supposedly examined the impact of California's smoking ban in bars, effective on January 1, 1998. The study claims that there were fewer bar jobs and bar businesses in California on January 1, 1999 than on January 1, 1997, but comparing two random points in time is an invalid methodology. Economic fluctuations are not accounted for and several years of data are necessary to establish a baseline to measure economic impact. Economic studies in 2000 and 2001 found that Philip Morris Management Corporation

funded the study.

- **Michael L. Marlow, of California Polytechnic State University:**
  An economic analysis of the Maine smoking ban: evidence from patrons and owners of businesses, 1999.
  The study surveyed restaurant owners and patrons to estimate the impact the smoking ban had on restaurant patronage, time spent at establishments, revenues, wages, and several other factors. The study purportedly found that smokers visited restaurants less frequently and spent less time there, but that non-smokers visited more frequently. Smokers make up only 25% of the population, so the number of increased visits by non-smokers was higher than the number of decreased visits by smokers. Claims of decreased revenues and wages were not substantiated by sales tax receipts. The Philip Morris Management Group funded the report.

- **Chamberlain Research Consultants, Madison, WI:**
  Smoking Issues in Wisconsin, 1998.
  The study was conducted for the Wisconsin Restaurant Association and was funded by a Philip Morris Accommodation Program Grant. Owners of restaurants, bowling alleys, hotels, and motels were asked to predict how a smoking ban could affect potential sales and employee layoffs, although no smoking regulations were proposed.

- **The Craig Group, Inc., Columbus, OH:**
  West Virginia Restaurant and Bar Survey, 1998.
  The study surveyed restaurant and tavern owners and found that 59% of the owners believe smoking customers would spend less money in their establishment if a ban were enacted; it was funded by Philip Morris' Accommodation Program for The Club Association of West Virginia, an affiliate of the National Licensed Beverage Association.

- **KPMG Peat Marwick, Los Angeles, CA:**
  Effects of 1998 California Smoking Ban on Bars, Taverns and Night Clubs, 1998.
  The study tested respondents' views of whether business increased or decreased after January 1, 1998, the date California's smokefree bar provisions went into effect; alleges business declined an average of 26.2%. Actual sales tax data demonstrates sales were not affected by the law.

- **Michael L. Marlow, of California Polytechnic State University:**
  The Economic Effects of Smoking Laws on Bars and Taverns, 1998.
  The study developed an economic model of how smoking restrictions influence bars and taverns and tested the model using surveys of restaurant, bar, and tavern owners and managers conducted by Roper Starch for the National Licensed Beverage Association. Study found that 82% of bar and tavern owners predict that a smokefree ordinance would hurt their businesses. The study was funded by Philip Morris and presented at the National Licensed Beverage Association annual conference in 1998.

- **Advantage Marketing Information, Wickford, RI:**
  Rhode Islander's Attitudes Towards Smoking in Restaurants and Hotels, 1997.
  The study was conducted for the Rhode Island Hospitality and Tourism Association for the purpose of estimating the impact a smoking ban could have on potential sales if such a policy were introduced. No

smoking bans had been recently introduced or were proposed. Owners of restaurants, bowling alleys, hotels, and motels were asked to guess the impact that a smoking ban would have on their business and on employee layoffs. The study was funded with a Philip Morris Accommodation Program Grant.

- **Eppstein Group, Fort Worth, TX:**
  Texas Restaurant Association 1997 Statewide Hospitality Industry Benchmark Poll, 1997.
  The Eppstein Group, with a grant from Philip Morris' Accommodation Program, surveyed members' opinions on smoking regulations and their perceptions of what would happen to their businesses if a smoking ban were imposed in Texas. The study predicts a loss of business, but there is no actual data involved.

- **Applied Economics, Scottsdale, AZ:**
  Economic Impact of the City of Mesa Smoke-free Ordinance, Working Paper 1: Business Interviews, 1996.
  The study surveyed 17 restaurants or restaurant/lounges in Mesa one month after the city's ordinance went into effect. Study results are based on owners/managers' opinions about the impact of the ordinance on sales.

  Economic Impact of the City of Mesa Smoke-free Ordinance, Working Paper 2: Preliminary Sales Tax Analysis, 1996.
  The study compared sales data from July and August 1996 (the two months after the July 1st date the ordinance went into effect), with sales data from July and August 1995. While the use of sales tax data to monitor impact is appropriate, the study should have used several years' worth of data to establish an accurate baseline and account for any random fluctuations.

- **InContext, Washington, D.C.:**
  Restaurant Jobs in New York City, 1993 Through First Quarter 1996, and the Restaurant Smoking Ban, 1996.
  The study was commissioned for the Empire State Restaurant & Tavern Association, a tobacco industry front group, and it alleges that New York City lost jobs as the result of its smokefree restaurants ordinance. However, New York City's clean indoor air law did not go into effect until April 1995, one month after New York City supposedly lost 4% of its restaurant jobs. The study did not look at restaurant sales tax data.

  Massachusetts Restaurant Association Study, 1996.
  The study, conducted for the Massachusetts Restaurant Association, measured the change in the number of restaurant jobs in 23 Massachusetts cities during the period 1993-1995. Several of the towns, however, enacted their smokefree air ordinances in 1996, after the study period. The study did not look at restaurant sales tax data.

- **KPMG Peat Marwick, Los Angeles, CA:**
  The Impact of the Current and Proposed Smoking Bans on Restaurants and Bars in California, 1996.
  The study surveyed restaurant owners pre-selected from a list provided by the Southern California Business Association and is based on owners' opinions about the effects of the restaurant ban on business.

- **Price Waterhouse, Washington, D.C.:**

New York City Restaurant Survey, 1995.
The study, conducted for the New York Restaurant and Tavern Association, claimed that 41% of restaurants reported decreased sales receipts since a smoking regulation began. The study only looked at restaurant owners' opinions of whether there was a change in sales within one month of the regulation's implementation, which is not a valid amount of time for evaluation even if the study was based on hard data, which it was not. Studies based on sales tax receipt data did not show a negative economic impact from the smoking regulation, and in fact showed an increase of 2.1% in sales tax revenue, as documented in the Journal of Public Health Management and Practice, January 1999 issue. A Philip Morris Accommodation Program Grant funded the study.

- **Charlton Research Company, San Francisco, CA:**
  Pacific Dining Car Restaurant and Southern California Business Association Survey, 1994.
  The study, conducted for the Southern California Business Association, was based on interviews of restaurant owners and managers in Los Angeles regarding their opinions on how business was affected by a new restaurant smoking regulation in the city. The Southern California Business Association has ties to the tobacco industry and the authors of the study had done work for Philip Morris in the past.

- **Price Waterhouse, Washington, D.C.:**
  Potential Economic Effects of a Smoking Ban in the State of California, 1993.
  Study conducted on behalf of the Southern California Business Association, Los Angeles County Hotel Motel group, and San Diego Tavern and Restaurant Association; based on restaurant owners and managers' predictions about the effects of a proposed statewide smoking ban on business.

  Potential Economic Effects of a Smoking Ban in the City of San Diego, 1992.
  Study conducted for the San Diego Tavern and Restaurant Association; surveyed restaurant owners and managers' predictions about the effects of a proposed smokefree ordinance.

- **Louis Masotti and Peter Creticos, San Luis Obispo, CA:**
  Creticos and Associates Study of San Luis Obispo, CA, 1991.
  The study was based on interviews with restaurant owners and managers to learn their opinions on how business was affected by a new restaurant smoking regulation in the city. The authors claimed that certain sales tax data showed a slight decline in restaurant sales, but they admit that no restaurant owners and managers were able to demonstrate any losses attributable to the smoking regulation. Masotti has done work for Philip Morris.

- **Peter Gambee, California Business and Restaurant Alliance:**
  California Business and Restaurant Study of Bellflower, CA, 1991.
  The California Business and Restaurant Alliance (CBRA) conducted a non-random survey of 100 Bellflower restaurant owners and managers, 33 of which actually responded. Many of the responding restaurateurs had worked with CBRA to oppose the ordinance. CBRA did not request any financial documents to support owners' and managers' opinions that business had decreased. Rudy Cole of Restaurants for a Sensible Voluntary Policy (RSVP), a tobacco industry front group, presented these findings to the Bellflower City Council.

- **Laventhol and Horwath, Los Angeles, CA:**
  Analysis of the Impact of the Proposed Los Angeles Ban on Smoking in Restaurants, 1990.
  The study was conducted for Restaurants for a Sensible Voluntary Policy (RSVP) and it projected the potential impact of a restaurant ordinance in Los Angeles, based on Beverly Hills' experience during the time its 100% smokefree ordinance was in effect. The study relied on sales information provided by six non-randomly selected Beverly Hills restaurants, and only looked at one calendar quarter's worth of data.

- **Hamilton, Frederick and Schneiders, Washington, D.C.:**
  Hamilton, Frederick and Schneiders Study, 1987.
  The study, which was conducted for the Tobacco Institute, polled smokers' opinions on smoking restrictions in restaurants.

Source

Scollo, M. and Lal, A. Summary of Studies Assessing the Economic Impact of Smoke-Free Policies in the Hospitality Industry. VicHealth Centre for Tobacco Control, Melbourne, Australia. November 2003.
American Nonsmokers' Rights Foundation, 1996; revised 1998, 2000, 2003 and 2004.

Exhibit II-3
List of Studies Showing Source of Funding and Data Studied from Scollo & Lal (2005)

	Control for economic conditions		*Do not control for economic conditions*	
	No effect, or positive effect	**Negative effect**	**No effect, or positive effect**	**Negative effect**
Studies funded from sources other than the tobacco industry				
Taxable sales	Bartosch & Pope, (1995)[5] **Bartosch & Pope (1999) [6]** **Bartosch & Pope (2002) [7]** Bialous & Glantz (1997) [8] Cowan (2004) [9] Dai et al (2004) [10] * Dresser (1999) [11] Ferrence et al (2003) [12] **Glantz & Charlesworth (1999) [13]** **Glantz & Smith (1994) [14]** **Glantz & Smith (1997) [15]** Glantz (2000) [16] Glantz & Wilson-Loots (2003) [17] **Goldstein & Sobel (1998)[18]** Hayslett & Huang (2000) [19] Huang (2004) [20] **Huang et al (1995)[21]** **Hyland et al (1999)[22]**[a] Hyland (2002) [23] **Hyland (2003) [24]** Maroney et al (1994)[25]		California State Board of Equalization (1998)[33] * City of Boulder (1996) [34] Fletcher (1998) [35] New York City Department of Finance (2004) [36]	
	Moseley (2003) [26] Pacific Analytics (2001)[27] Pope & Bartosch (1997)[28] **Sciacca & Ratliff (1998)[29]** Styring (2001) [30] Taylor Consulting (1993)[31] **Wakefield et al (2002) [32]**			
	No effect, or positive effect	**Negative effect**	**No effect, or positive effect**	**Negative effect**
Sales data other	Bourns & Malcomson (2002) [37] Collins (2005) [38] Connolly et al (2005) [39] Lal (2003) [40] **Mandel, 2005 [41]**		* Dresser et al (1999)[42]	Lund (2005) [43]
Employment levels	* Bourns & Malcomson (2001)[44] Connolly et al (2005) [39] Dai et al (2004) [10]* Hahn et al (2005) [45] * Hild et al 2001[46] * **Hyland & Cummings (1999)[47]**[b] **Hyland et al (2000) [48]** * Hyland & Tuk (2001)[49] Hyland (2003) [24]		New York City Department of Health and Mental Hygiene (2003) [50] New York City Department of Finance (2004) [36]	
Number of establishments	* **(Hyland & Cummings (1999)[47])** [b] Hahn et al (2005) [45]		New York City Department of Finance (2004) [36]	
Number of restaurant/bar permits applications			New York City Department of Finance (2004) [36]	
Bankruptcy data	(Bourns & Malcomson 2001[44]) (Bourns & Malcomson 2002)[37]			
Number of Employment insurance claims	(Bourns & Malcomson 2001[44]) (Bourns & Malcomson 2002)[37]			
Financial Stress score			Price (2004)[51]	

Studies for which funding source is unknown				
Sales Data				Pakko (2005) [52] * Pubco (2002) [53] Thalheimer Research Associates (2005) [54]
Studies conducted by organisations or consultants with links to the tobacco industry around the time of the study				
Taxable sales receipts				* Lilley et al (1996) [b] [55] * Masotti et al (1991)*[56] †
Studies funded by tobacco companies or industry groups supported by the tobacco industry				
Taxable sales receipts				* Laventhol et al (1990) [57]
Sales data other				* Applied Economics (1996)[58] Deloitte & Touche LLP [59]
Employment levels				* Lilley et al (1999)[60] * Lilley et al (1996) [61] [a]
Number of establishments				* (Lilley et al 1999) [60])

Bold type = peer reviewed; * Use discrete rather than continuous data prior to and after the introduction of policies; † Only weak evidence of connection with the tobacco industry

Source

Scollo, M. and Lal, A. Summary of Studies Assessing the Economic Impact of Smoke-Free Policies in the Hospitality Industry. VicHealth Centre for Tobacco Control, Melbourne, Australia. July 2005. Table 1- Studies using objective measures to assess economic impact of smoke-free policies in the hospitality industry. http://www.vctc.org.au/tc-res/Hospitalitysummary.pdf

Exhibit II-4

Effectiveness of Territorial and Other Smoking Restrictions

Study	Data	Effectiveness of Restrictions in Reducing Smoking
US Studies: Using Aggregate Data		
Chaloupka and Safer (1988)	US, annual state-level, 1975-1985	Clean air laws ineffective in reducing cigarette demand
Farr et al. (2001)	US, annual aggregate, 1955-1994	Indoor clean air laws effective
Sung et al. (1994)	US, annual state-level, 1967-1990	Local regulations effective in reducing smoking
US Studies: Using Micro Data		
Chaloupka and Wechsler (1995)	US, survey of college students	Bans on smoking in public places effective in reducing teenage smoking
Czart et al. (2001)	US, college students, 1997	Comprehensive geographic restrictions reduce smoking; bans on cigarette sales increase smoking
International Studies: Using Aggregate Data		
Bardsley and Olekalns (1999)	Australia, annual, 1962/1963-1995/1996	Workplace smoking bans reduce consumption
International Studies: Using Micro Data		
Borland et al. (1991)	Australia, Telecom Australia employees	Workplace smoking bans effective in reducing smoking
Brenner and Mielck (1992)	Federal Republic of Germany, individuals, 1987	Workplace smoking bans effective in reducing smoking, especially among women
Lewit et al. (1997)	US, Canada, school students, 1990, 1992	Policies limiting minors' access to tobacco and tobacco education reduce smoking; effect of geographic smoking restrictions insignificant
Wakefield et al. (1992)	Australia, individuals, 1989	Workplace smoking bans effective in reducing smoking

Exhibit II-5

Catalog of Mitigating Efforts

Community	Type of Ban	Mitigating Effort
Mitigating Effort: Undue Financial Hardship		
Brookline, MA	Comprehensive	Smoking banned in all food-service establishments. Establishments may apply for a waiver in cases of "undue financial hardship." If a waiver is granted, an establishment may allow smoking in an enclosed and separately ventilated area. Waiver expires no later than 5 years after ban.
Kenosha, WI	Restaurant Dining areas Only	Smoking banned in restaurant dining areas. Restaurants may apply for waivers in cases of "undue financial hardship" (defined as a drop in revenues of at least 10% over three months as compared with the same three months the prior year). If a waiver is granted, a restaurant may allow smoking anywhere in the establishment.
New York State	Comprehensive	Smoking banned in restaurants and bars. However, establishments may apply for a waiver in cases of "undue financial hardship" (defined as a drop in revenues of at least 15% over three months as compared with the same three months the prior year). If a waiver is granted, an establishment may allow smoking in an enclosed and separately ventilated area. The waiver is to be re-evaluated every two years. http://www.health.state.ny.us/nysdoh/clean_indoor_air_act/ciaa_implementation_guidance.htm
Mitigating Effort: Ventilated Areas		
Boulder, CO	Comprehensive	Allows smoking in enclosed and separately ventilated areas in bars and restaurants. Also allows smoking in outdoor eating and drinking areas. Exempts tobacco stores, revenue from tobacco products must be over 85%
Broomfield, CO	Partial	Allows smoking in enclosed and separately ventilated areas in bars and restaurants, so long as the area is no larger than 40% of the establishment.
Gloucester, MA	Partial	Allows smoking in enclosed and separately ventilated areas in bars and restaurants already in operation at the time of the ban, so long as the area is no larger than 25% of the establishment.
Mitigating Effort: Exempt Bars		
Carmel, IN	Partial	Smoking allowed in Bars; "bar" is defined as a place that someone under the age of 21 cannot enter; also exempts private clubs
Greenwood, IN	Comprehensive	Smoking allowed in bars; 100% of sales must come from alcohol; also exempts private clubs.
Skokie, IL	Partial	Smoking allowed in freestanding bars, a "bar" is identified as an establishment that receives less than 25% of its revenues from food. Exemption: Outdoor Smoking Shelters
Mitigating Effort: Outdoor Shelters		
Bloomington, MN	Comprehensive	Smoking banned in bars and restaurants. Guidelines are provided for building outdoor smoking shelters according to code. http://www.ci.bloomington.mn.us/cityhall/dept/commserv/publheal/topics/smokefree/pdfs/shelterord1205.pdf
Randolph, MA	Comprehensive	Smoking banned in bars and restaurants. Allows for smoking in outdoor shelters built according to code. http://www.ci.bloomington.mn.us/code/Code19_20.html#b19_5002
Mitigating Effort: Private Clubs		
Arlington, MA	Comprehensive	Smoking banned in bars and restaurants. Allows for smoking in private clubs.
Somerville, MA	Comprehensive	Smoking banned in bars and restaurants. Allows for smoking in private clubs.
Weymouth, MA	Comprehensive	Smoking banned in bars and restaurants. Allows for smoking in private clubs (bartender must be a member as well).
Woburn, MA	Comprehensive	Smoking banned in bars and restaurants. Allows for smoking in private clubs.

Mitigating Effort: Other		
Dane County, WI	Comprehensive	Tobacco-Free Dane County Coalition funded post-ban campaign titled "Clearly" to promote smoke-free eating and drinking. Media included billboards and newspaper inserts, as well as promotional materials distributed to bar and restaurant owners.
Appleton, WI	Partial	Exempts a theatre which may use smoking cigarettes in their productions; however, they have to warn the viewers in advance of ticket sales that the production may use smoking. Also exempts hotels, allowing them to set aside 25% of there rooms for smoking. Allows one stand alone tobacco store to have a smoking room.
Danvers, MA	Comprehensive	Exempts private clubs and allows for hotels to set aside 25% of rooms as smoking rooms.
Haverhill, MA	Comprehensive	Exempts tobacco stores; private clubs must be granted a variance, which is good for one year; hotels must apply for a variance identifying the number of rooms designated as smoking.
Longmont, CO	Comprehensive	Exempts private clubs and outdoor eating and drinking areas.

Exhibit III-1
Tinley Park Smoking Ban Analysis
Illinois Communities That Have Enacted Smoking Bans

Town	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	% of Pop. 16 Yrs and Older Unemployed	Date of Smoking Ban	Smoking Ban Exemptions
	(1)	(2)	(3)	(4)	(5)	(6)
Tinley Park village	48,327	$ 61,648	99.3%	2.8%	1/2/2007	Bars/restaurants exempt until February 21, 2007
Arlington Heights village	76,098	67,807	100.0%	2.4%	1/2/2007	Racetrack Area
Bedford Park village	562	49,722	100.0%	1.9%	6/1/2006	None
Bloomington city	65,046	46,496	99.8%	3.9%	1/1/2007	Bars may apply for exemption until July 2007
Buffalo Grove village	42,591	80,525	100.0%	2.1%	10/1/2006	None
Burr Ridge village	10,328	129,507	100.0%	1.6%	7/10/2006	None
Champaign city	67,873	32,795	99.9%	7.1%	1/31/2007	None
Chicago city	2,895,964	38,625	100.0%	10.1%	1/15/2006	Bars exempt until July 2008
Deerfield village	18,497	107,194	100.0%	1.8%	3/1/2006	None
DeKalb city	38,840	35,153	99.8%	10.0%	9/1/2006	Bars exempt until September 2007
Elk Grove Village village	34,758	62,132	100.0%	3.1%	1/1/2007	None
Evanston city	**74,239**	**56,335**	**100.0%**	**7.0%**	**7/1/2006**	**None**
Hawthorn Woods village	6,412	132,720	99.1%	0.6%	1/1/2007	None
Highland Park city	31,379	100,967	100.0%	2.8%	6/1/2005	None
Hinsdale village	17,482	104,551	100.0%	2.6%	7/1/2006	None
Hoffman Estates village	50,352	65,937	99.8%	3.2%	1/2/2007	None
Lake Forest city	20,018	136,462	97.6%	6.7%	9/1/2006	Bars/restaurants exempt until May 2007
Libertyville village	20,696	88,828	99.8%	2.2%	10/1/2006	None
Lincolnshire village	6,181	134,259	99.9%	4.4%	8/1/2006	Enclosed bar areas exempt
Lindenhurst village	12,645	74,841	99.9%	2.6%	11/16/2006	None
Long Grove village	6,621	148,150	100.0%	2.8%	1/1/2007	Bars/restaurants exempt until January 2008
Normal town	45,337	40,379	100.0%	11.4%	1/1/2007	None
Northbrook village	33,425	95,665	100.0%	2.0%	1/1/2007	None
Oak Forest city	27,955	60,073	100.0%	3.8%	1/2/2007	Bars/restaurants exempt until March 14, 2007
Oak Park village	**52,524**	**59,183**	**100.0%**	**3.2%**	**7/1/2006**	**Separate floors exempt until March 2007**
Orland Park village	51,103	67,574	99.8%	2.8%	1/2/2007	Bars/restaurants exempt until March 14, 2007
Palatine village	65,156	63,321	100.0%	3.2%	1/2/2007	None
Park Ridge city	37,735	73,154	100.0%	1.9%	9/3/2006	Private banquet halls and private clubs exempt until July 2008

Exhibit III-1
Tinley Park Smoking Ban Analysis
Illinois Communities That Have Enacted Smoking Bans

Town	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	% of Pop. 16 Yrs and Older Unemployed	Date of Smoking Ban	Smoking Ban Exemptions
	(1)	(2)	(3)	(4)	(5)	(6)
Riverside village	9,120	64,931	100.0%	2.4%	1/1/2007	None
Rolling Meadows city	24,618	59,535	100.0%	2.6%	1/2/2007	None
Schaumburg village	74,511	60,941	100.0%	3.1%	1/2/2007	None
Skokie village	**63,320**	**57,375**	**100.0%**	**4.0%**	**7/7/2004**	**Physicall separated and separately ventilated bars within restaurants and freestanding bars exempt**
Springfield city	112,201	39,388	99.8%	4.9%	9/17/2006	None
Urbana city	36,196	27,819	99.9%	6.5%	1/2/2007	None
Vernon Hills village	20,606	71,297	99.5%	3.0%	10/1/2006	None
Wheaton city	55,439	73,385	100.0%	3.5%	1/2/2007	Bowling alleys exempt until June 2007
Wilmette village	27,684	106,773	100.0%	2.6%	7/1/2004	None

Notes and Sources:

Demographic data obtained from 2000 US Census. Smoking ban data obtained from SmokeFreeIllinois.

Bolded towns were included in the regression.

Exhibit III-2
Tinley Park Smoking Ban Analysis
States Included and Excluded
And Reasons for Exclusion

State	Included in Study?	Reason if Excluded
(1)	(2)	(3)
Alabama	No	warm weather
Alaska	No	cold weather
Arizona	No	warm weather
Arkansas	No	warm weather
California	No	warm weather
Colorado	**Yes**	
Connecticut	No	state-wide ban only
Delaware	No	state-wide ban only
Dist. of Columbia	No	warm weather
Florida	No	warm weather
Georgia	No	warm weather
Hawaii	No	warm weather
Idaho	No	state-wide ban only
Illinois	**Yes**	
Indiana	No	no comparables with bans
Iowa	No	no bans
Kansas	No	warm weather
Kentucky	No	warm weather
Louisiana	No	warm weather
Maine	No	state-wide ban only
Maryland	No	warm weather
Massachusetts	**Yes**	
Michigan	No	no comparables with bans
Minnesota	No	no sales tax data
Mississippi	No	warm weather
Missouri	No	warm weather
Montana	No	no comparables with bans
Nebraska	No	no comparables with bans
Nevada	No	warm weather
New Hampshire	No	no bans
New Jersey	No	no comparables with bans
New Mexico	No	warm weather
New York	No	county-wide bans only
North Carolina	No	warm weather

Exhibit III-2
Tinley Park Smoking Ban Analysis
States Included and Excluded
And Reasons for Exclusion

State	Included in Study?	Reason if Excluded
(1)	(2)	(3)
North Dakota	No	no comparables with bans
Ohio	No	no sales tax data
Oklahoma	No	warm weather
Oregon	No	no comparables with bans
Pennsylvania	No	no ban until 2007
Rhode Island	No	state-wide ban only
South Carolina	No	warm weather
South Dakota	No	state-wide ban only
Tennessee	No	warm weather
Texas	No	warm weather
Utah	No	state-wide ban only
Vermont	No	no comparables with bans
Virginia	No	warm weather
Washington	No	state-wide ban only
West Virginia	No	county-wide bans only
Wisconsin	No	no sales tax data
Wyoming	No	no comparables with bans

Exhibit III-3
Tinley Park Smoking Ban Analysis
Comparable[1] Communities That Have Enacted Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Date(s) of Smoking Ban(s)?	Comprehensive or Partial?	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tinley Park village	48,327	$ 61,648	99.3%	1/2/2007	Comprehensive		
Illinois							
Skokie village	63,320	57,375	100.0%	7/7/2003; 7/7/2004	Partial; Partial	Yes	
Evanston village [2]	74,239	56,335	100.0%	7/1/2006	Comprehensive	Yes	
Oak Park village [2]	52,524	59,183	100.0%	7/1/2006	Partial	Yes	
Colorado							
Longmont city [3]	71,303	51,174	99.9%	1/10/2004	Comprehensive	Yes	
Broomfield city	38,297	63,903	99.8%	4/21/2004	Partial	Yes	
Massachusetts							
Agawam city	28,144	49,390	92.1%	11/15/1999	Comprehensive	Yes	
Arlington town	42,389	64,344	100.0%	6/15/1995	Comprehensive [4]	Yes	
Brookline town	57,061	66,711	100.0%	7/1/1994; 1/1/2000	Partial; Comprehensive	Yes	
Dartmouth town	30,666	50,742	77.7%	1/1/2000	Partial	Yes	
Gloucester city	30,273	47,722	93.3%	2/13/2002	Partial	Yes	
Melrose city	27,134	62,811	100.0%	3/1/1999	Comprehensive	Yes	
Somerville city	77,478	46,315	100.0%	1/1/2000; 10/1/2003	Partial; Comprehensive	Yes	
Plymouth town	51,701	54,677	88.9%	9/1/2001	Comprehensive	Yes	
Woburn city	37,258	54,897	100.0%	3/28/2001	Comprehensive	No	Unreliable sales tax data
Braintree town	33,828	61,790	100.0%	10/1/1999; 1/1/2002	Partial; Comprehensive	Yes	

Exhibit III-3
Tinley Park Smoking Ban Analysis
Comparable[1] Communities That Have Enacted Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Date(s) of Smoking Ban(s)?	Comprehensive or Partial?	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Haverhill city	58,969	49,833	97.1%	9/1/2002	Comprehensive	Yes	
Weymouth town	53,988	51,665	100.0%	3/4/2002	Comprehensive	Yes	
Beverly city	39,862	53,984	100.0%	8/1/2003	Comprehensive	Yes	
Bridgewater town	25,167	65,318	94.5%	9/1/2003	Comprehensive	No	Unreliable sales tax data
Saugus town	26,006	55,301	100.0%	1/2/1999; 5/5/2003	Partial; Comprehensive	Yes	
Watertown city	32,986	59,764	100.0%	5/5/2003	Comprehensive	Yes	
Minnesota							
Bloomington city	85,202	54,628	100.0%	3/31/2005	Comprehensive	No	No sales tax data available
Ohio							
Gahanna city	32,523	66,031	100.0%	11/8/2005	Comprehensive	No	No sales tax data available
Upper Arlington city	33,605	72,116	100.0%	9/13/2004	Comprehensive	No	No sales tax data available
Westerville city	35,408	69,135	99.9%	8/15/2005	Comprehensive	No	No sales tax data available
Wisconsin							
Appleton city	70,124	47,285	99.2%	7/1/2005	Comprehensive	No	No sales tax data available

Exhibit III-3
Tinley Park Smoking Ban Analysis
Comparable[1] Communities That Have Enacted Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Date(s) of Smoking Ban(s)?	Comprehensive or Partial?	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Notes and Sources:

Demographic data obtained from 2000 US Census. Smoking ban data obtained from town surveys and telephone follow-ups.

[1] Comparable to Tinley Park according to the following criteria: population between 25,000 and 100,000, and median household income within 25% of Tinley Park's value. Towns included in the regression were also confirmed to be located within 25 miles of a city with population greater than 100,000 or within the boundaries of a Primary Metropolitan Statistical Area, as determined by the US Census, and must have enacted a municipal smoking ban prior to January 2006, and at least one year prior to a countywide or statewide smoking ban.

[2] Only one quarter of smoking ban data is available for Evanston and Oak Park.

[3] Longmont is in Boulder County, which enacted a full smoking ban on 12/9/2004. Four quarters under the town smoking ban are used in the regression.

[4] Arlington is a dry town and therefore has no bars. Its smoking ban was considered a restaurant-only ban for the purposes of our regression.

Exhibit III-4
Tinley Park Smoking Ban Analysis
Comparable[1] Communities without Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)
Tinley Park village	48,327	$ 61,648	99.3%		
Illinois					
Addison village	35,709	54,090	100.0%	Yes	
Arlington Heights village	76,098	67,807	100.0%	No	Could not confirm no ban
Bloomington city	65,046	46,496	99.8%	No	Could not confirm no ban
Bolingbrook village	56,454	67,852	99.9%	Yes	
Burbank city	27,825	49,388	100.0%	No	Could not confirm no ban
Carol Stream village	39,790	64,893	100.0%	Yes	
Carpentersville village	30,287	54,526	100.0%	Yes	
Crystal Lake city	37,836	66,872	99.6%	No	Could not confirm no ban
Des Plaines city	58,695	53,638	100.0%	No	Could not confirm no ban
Dolton village	25,740	48,020	100.0%	No	Could not confirm no ban
Downer's Grove village	48,638	65,539	100.0%	Yes	
Elgin city	93,895	52,605	100.0%	Yes	
Elk Grove Village village	34,758	62,132	100.0%	No	Could not confirm no ban
Elmhurst city	42,959	69,794	100.0%	No	Could not confirm no ban
Elmwood Park village	25,405	47,315	100.0%	Yes	
Glen Ellyn village	27,040	74,846	100.0%	Yes	
Glendale Heights village	31,676	56,285	100.0%	Yes	
Gurnee village	28,615	75,742	98.8%	No	Could not confirm no ban
Hanover Park village	38,366	61,358	100.0%	Yes	
Hoffman Estates village	50,352	65,937	99.8%	No	Could not confirm no ban
Lansing village	28,161	47,554	100.0%	No	Could not confirm no ban
Lombard village	41,859	60,015	100.0%	Yes	
Mount Prospect village	56,706	57,165	100.0%	No	Could not confirm no ban
Mundelein village	30,588	69,651	99.9%	No	Could not confirm no ban

Exhibit III-4
Tinley Park Smoking Ban Analysis
Comparable[1] Communities without Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)
Niles village	30,144	48,627	100.0%	No	Could not confirm no ban
Oak Forest city	27,955	60,073	100.0%	No	Could not confirm no ban
Oak Lawn village	55,391	47,585	100.0%	No	Could not confirm no ban
Orland Park village	51,103	67,574	99.8%	No	Could not confirm no ban
Palatine village	65,156	63,321	100.0%	No	Could not confirm no ban
Park Ridge city	37,735	73,154	100.0%	No	Could not confirm no ban
Round Lake Beach village	25,659	59,359	100.0%	No	Could not confirm no ban
Schaumburg village	74,511	60,941	100.0%	No	Could not confirm no ban
St. Charles city	27,955	69,424	99.5%	No	Could not confirm no ban
Streamwood village	36,732	65,076	100.0%	No	Could not confirm no ban
Wheaton city	55,439	73,385	100.0%	No	Could not confirm no ban
Wheeling village	34,411	55,491	100.0%	No	Could not confirm no ban
Woodridge village	31,075	61,944	99.9%	No	Could not confirm no ban
Colorado					
Littleton city	40,416	50,583	99.5%	Yes	
Loveland city	50,680	47,119	99.8%	No	Could not confirm no ban
Northglenn city	31,635	48,276	99.9%	No	Had some anti-smoking regulations
Thornton city	82,433	54,445	99.7%	Yes	
Massachusetts					
Attleboro city	42,068	50,807	99.6%	No	Could not confirm no ban
Billerica town	38,945	67,799	99.2%	No	Could not confirm no ban
Chelmsford town	33,858	70,207	100.0%	No	Could not confirm no ban

Exhibit III-4
Tinley Park Smoking Ban Analysis
Comparable[1] Communities without Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)
Danvers town	25,212	58,779	100.0%	No	Could not confirm no ban
Dracut town	28,562	57,676	93.7%	Yes	
Falmouth town	32,660	48,191	95.0%	No	Could not confirm no ban
Franklin city	29,560	71,174	94.9%	Yes	
Marlborough city	36,255	56,879	98.2%	No	Could not confirm no ban
Medford city	55,765	52,476	100.0%	No	Could not confirm no ban
Methuen city	43,789	49,627	100.0%	No	Could not confirm no ban
Milford town	26,799	50,856	99.1%	No	Could not confirm no ban
Natick town	32,170	69,755	99.1%	No	Could not confirm no ban
North Andover town	27,202	72,728	92.4%	No	Could not confirm no ban
North Attleborough town	27,143	59,371	97.2%	No	Could not confirm no ban
Norwood town	28,587	58,421	99.2%	No	Could not confirm no ban
Randolph town	30,997	55,255	100.0%	No	Could not confirm no ban
Shrewsbury town	31,640	64,237	100.0%	No	Could not confirm no ban
Stoughton town	27,149	57,838	98.3%	Yes	
Tewksbury town	28,887	68,800	100.0%	No	Could not confirm no ban
Waltham city	59,226	54,010	100.0%	Yes	
Minnesota					
Andover city	26,588	76,241	94.3%	No	No sales tax data
Apple Valley city	45,527	69,752	98.2%	No	No sales tax data
Blaine city	44,934	59,219	95.7%	No	No sales tax data
Brooklyn Park city	67,388	56,572	100.0%	No	No sales tax data
Burnsville city	60,148	57,965	99.8%	No	No sales tax data
Coon Rapids city	61,627	55,550	100.0%	No	No sales tax data
Cottage Grove city	30,557	65,825	92.3%	No	No sales tax data
Eagan city	63,629	67,388	100.0%	No	No sales tax data
Edina city	47,509	66,019	100.0%	No	No sales tax data

Exhibit III-4
Tinley Park Smoking Ban Analysis
Comparable[1] Communities without Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)
Fridley city	27,449	48,372	100.0%	No	No sales tax data
Inver Grove Heights city	29,724	59,090	90.7%	No	No sales tax data
Lakeville city	43,128	72,404	97.3%	No	No sales tax data
Maple Grove city	50,343	76,111	97.5%	No	No sales tax data
Maplewood city	34,942	51,596	100.0%	No	No sales tax data
Minnetonka city	51,299	69,979	100.0%	No	No sales tax data
Oakdale city	26,669	56,299	100.0%	No	No sales tax data
Plymouth city	65,903	77,008	98.3%	No	No sales tax data
Rochester city	85,392	49,090	99.3%	No	No sales tax data
Roseville city	33,757	51,056	100.0%	No	No sales tax data
St. Louis Park city	44,120	49,260	100.0%	No	No sales tax data
Shoreview city	25,924	69,719	100.0%	No	No sales tax data
Woodbury city	46,464	76,109	96.7%	No	No sales tax data
Ohio					
Beavercreek city	38,183	68,801	96.8%	No	No sales tax data
Brunswick city	33,391	56,288	100.0%	No	No sales tax data
Cleveland Heights city	49,984	46,731	100.0%	No	No sales tax data
Fairfield city	41,972	50,316	99.4%	No	No sales tax data
Grove City city	27,020	52,064	99.2%	No	No sales tax data
Huber Heights city	38,272	49,073	98.0%	No	No sales tax data
Medina city	25,070	50,226	99.1%	No	No sales tax data
Mentor city	50,278	57,230	100.0%	No	No sales tax data
North Olmsted city	34,113	52,542	100.0%	No	No sales tax data
North Royalton city	28,648	57,398	95.5%	No	No sales tax data
Reynoldsburg city	32,225	51,108	100.0%	No	No sales tax data
Shaker Heights city	29,415	63,983	100.0%	No	No sales tax data
Stow city	32,139	57,525	97.9%	No	No sales tax data
Strongsville city	43,861	68,660	99.1%	No	No sales tax data
Westlake city	31,856	64,963	99.2%	No	No sales tax data
Wisconsin					
Brookfield city	38,807	76,225	100.0%	No	No sales tax data
Franklin city	29,556	64,315	94.7%	No	No sales tax data
New Berlin city	38,362	67,576	92.2%	No	No sales tax data
Oak Creek city	28,456	53,779	94.7%	No	No sales tax data

Exhibit III-4
Tinley Park Smoking Ban Analysis
Comparable[1] Communities without Smoking Bans

Geography	Total Population	Median Household Income	% of Total Pop. Living in an Urban Area	Included in Regression?	Reason Excluded
(1)	(2)	(3)	(4)	(5)	(6)
Waukesha city	64,372	50,084	99.8%	No	No sales tax data
West Bend city	28,133	48,315	99.8%	No	No sales tax data

Notes and Sources:

Demographic data obtained from 2000 US Census. Smoking ban data obtained from town surveys and telephone follow-ups.

[1] Comparable to Tinley Park according to the following criteria: population between 25,000 and 100,000, and median household income within 25% of Tinley Park's value. Towns included in the regression were also confirmed to be located within 25 miles of a city with population greater than 100,000 or within the boundaries of a Primary Metropolitan Statistical Area, as determined by the US Census.

Exhibit III-5a
Bars and Restaurants Quarterly Sales Tax Revenue
Tinley Park

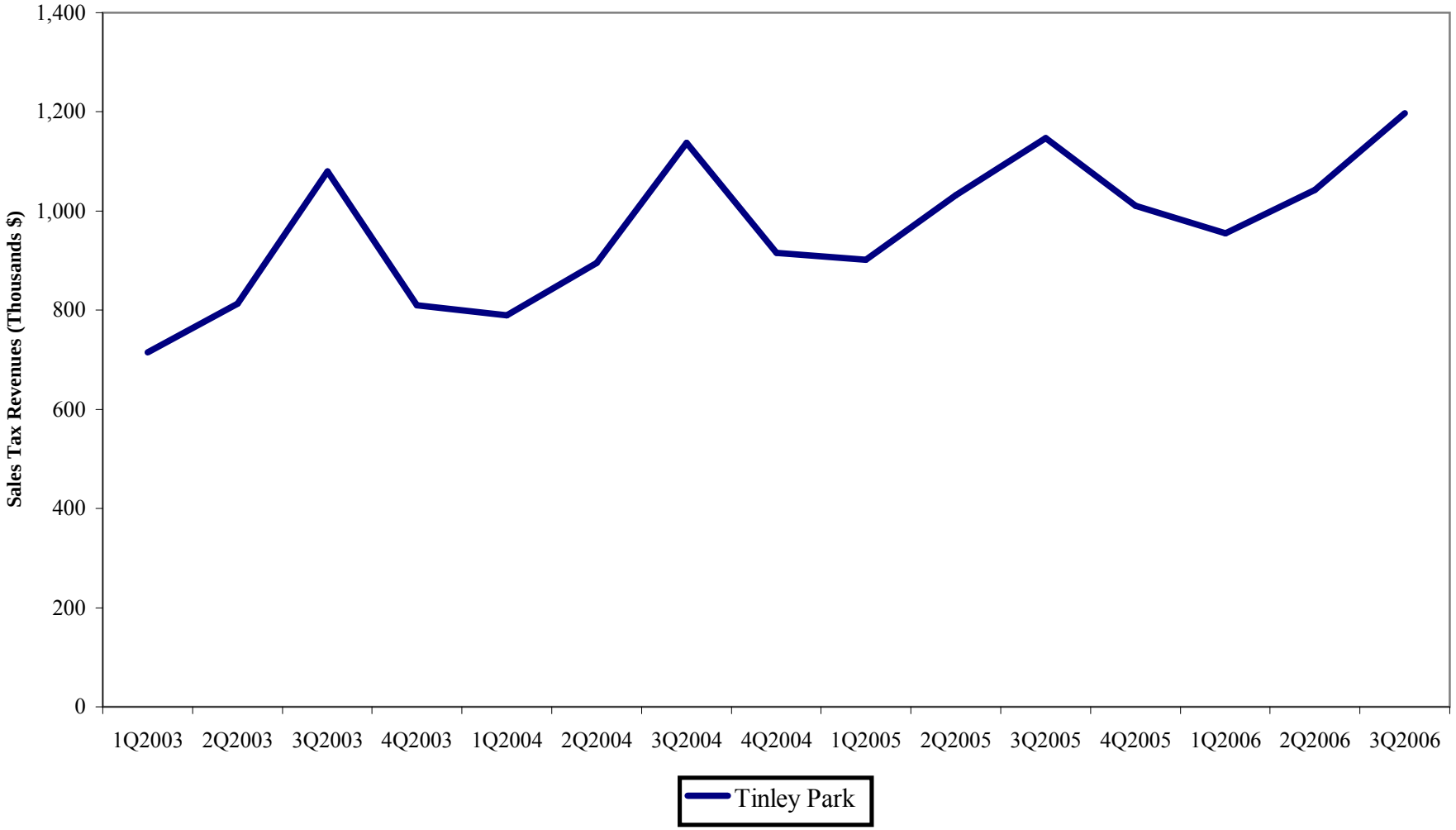


Exhibit III-5b
Bars and Restaurants Quarterly Sales Tax Revenue
Evanston and Illinois Control Communities

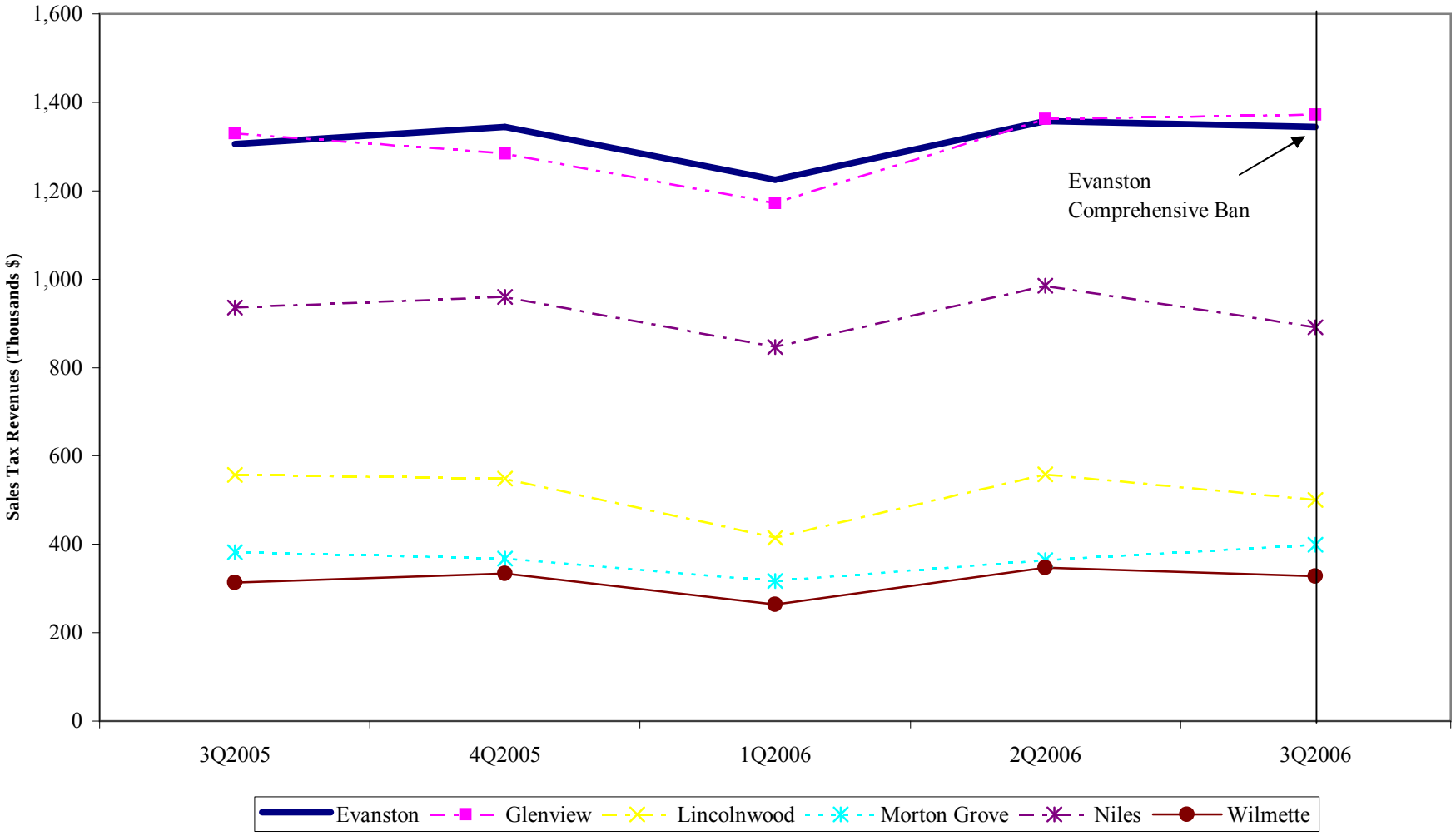


Exhibit III-5c
Bars and Restaurants Quarterly Sales Tax Revenue
Oak Park and Illinois Control Communities

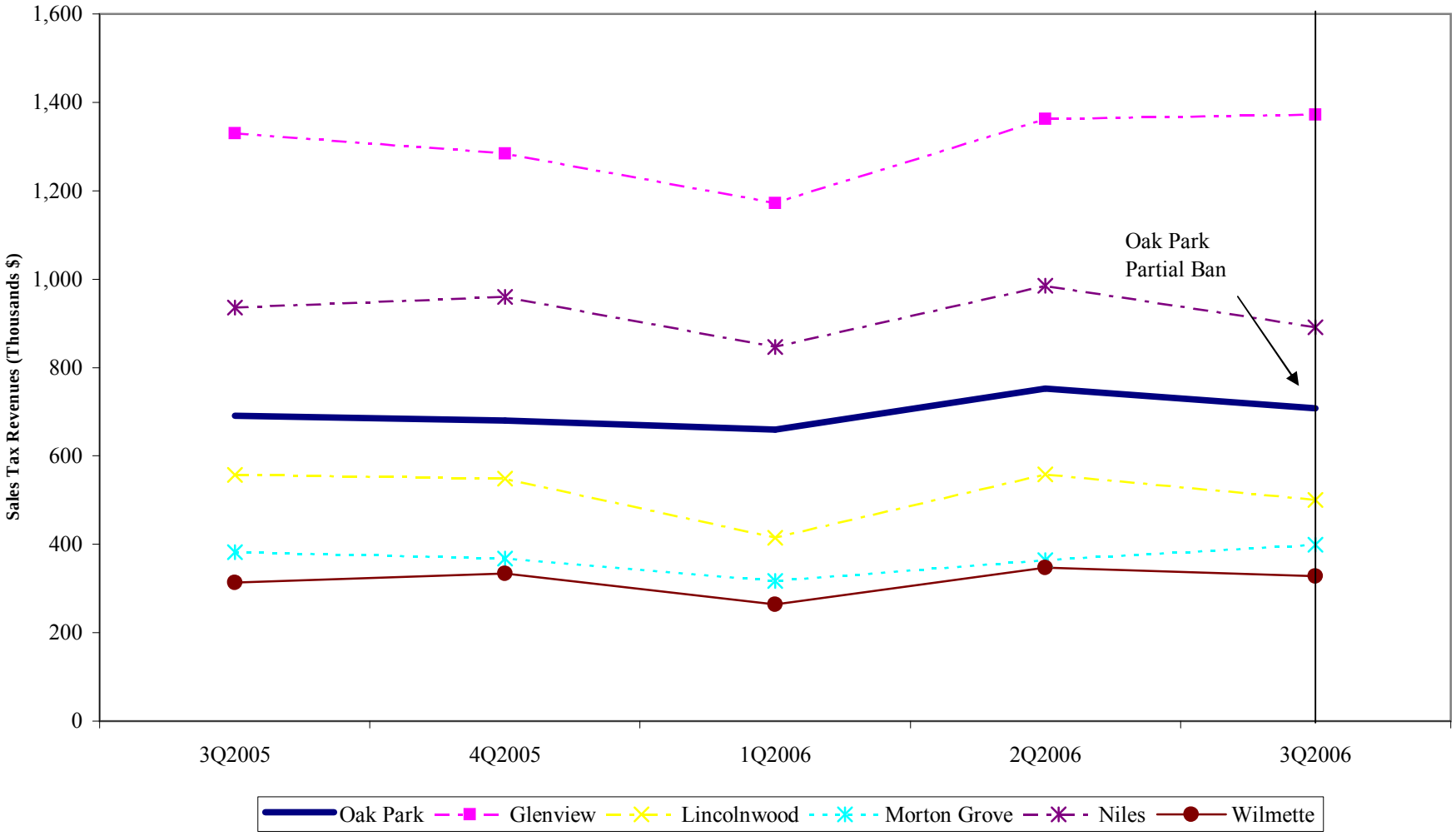


Exhibit III-5d
Bars and Restaurants Quarterly Sales Tax Revenue
Skokie and Illinois Control Communities

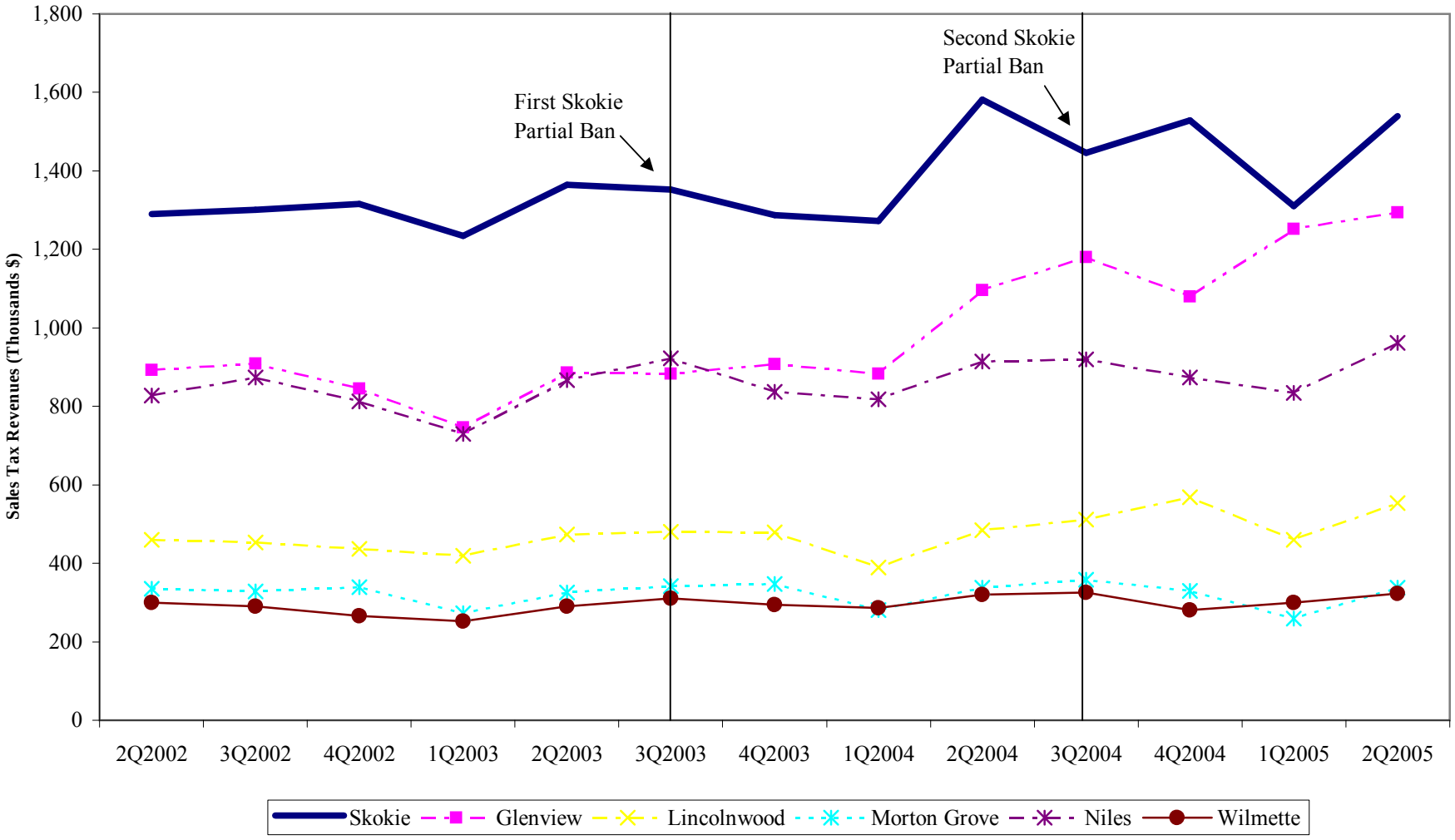


Exhibit III-5e
Bars and Restaurants Quarterly Sales Tax Revenue
Arlington and Massachusetts Control Communities

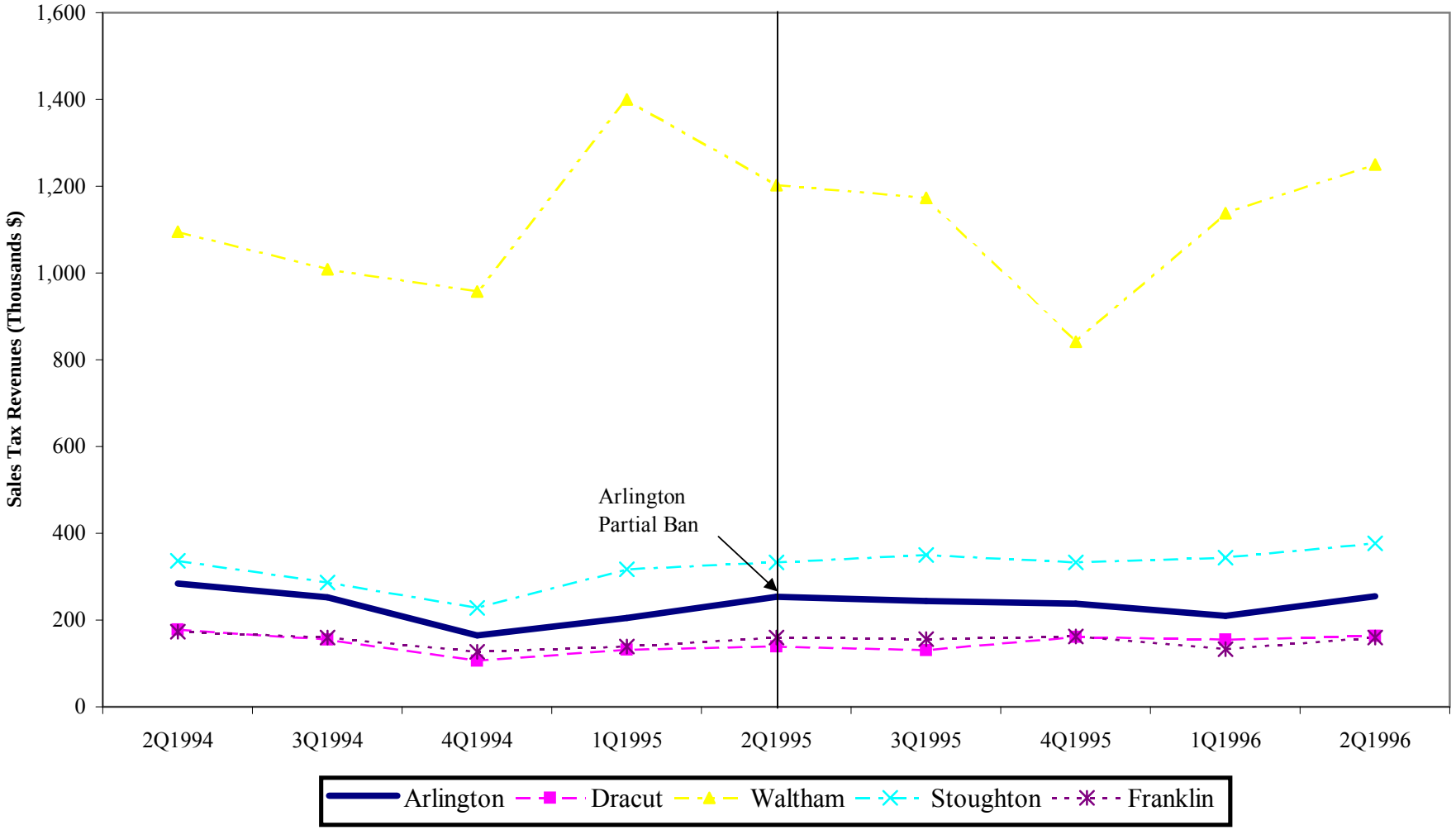


Exhibit III-5f
Bars and Restaurants Quarterly Sales Tax Revenue
Gloucester and Massachusetts Control Communities

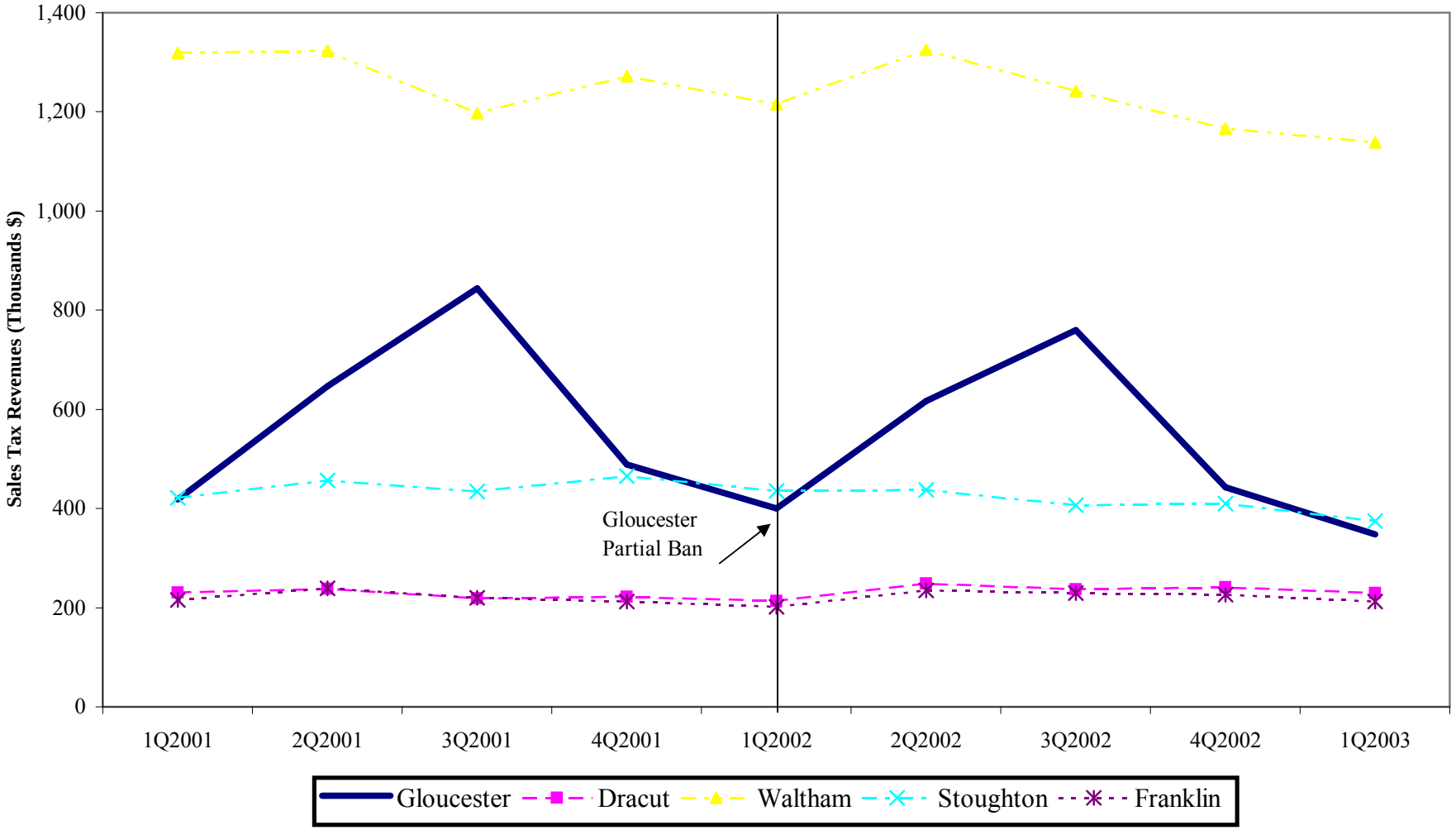


Exhibit III-5g
Bars and Restaurants Quarterly Sales Tax Revenue
Brookline and Massachusetts Control Communities

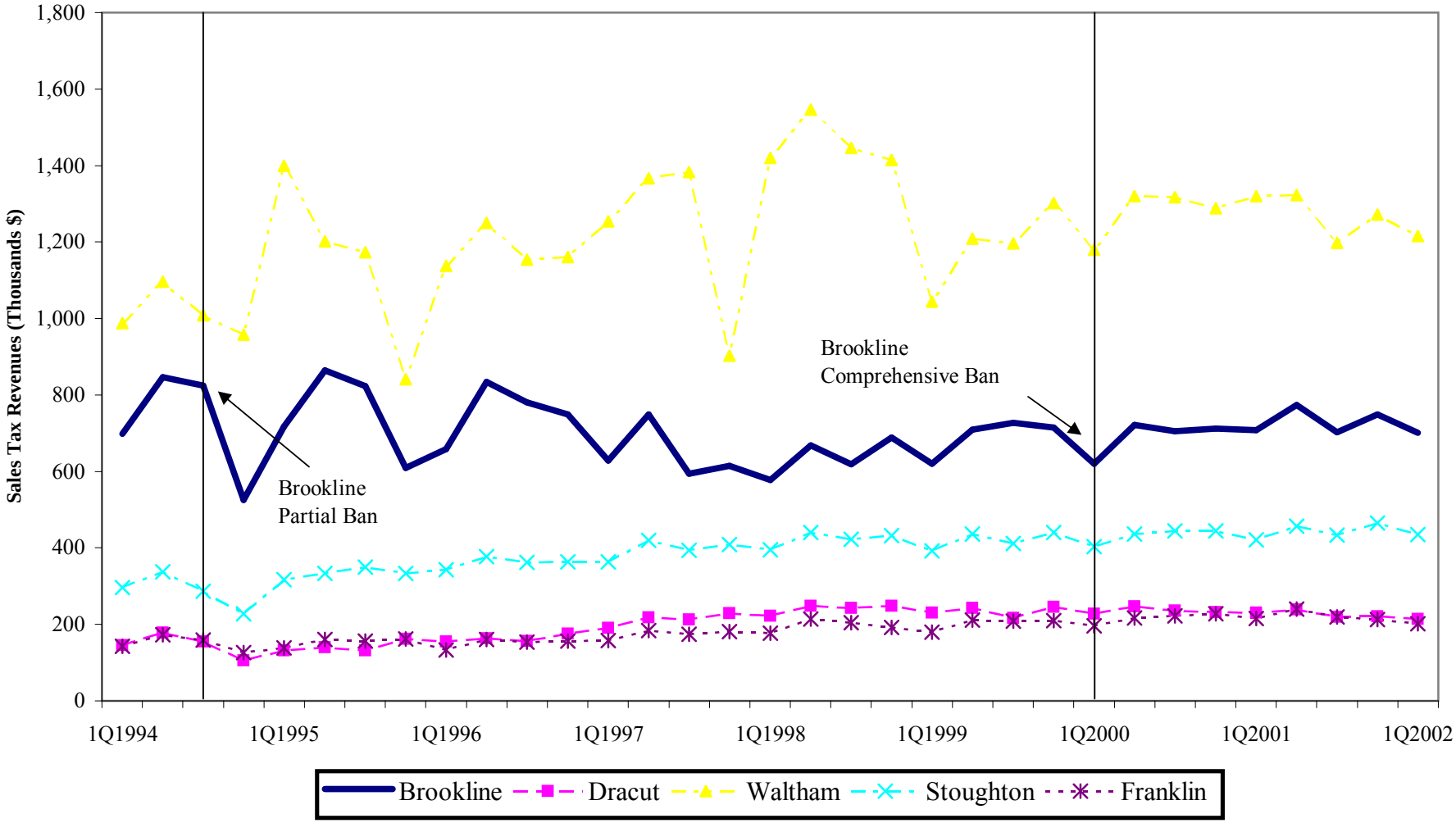


Exhibit III-5h
Bars and Restaurants Quarterly Sales Tax Revenue
Watertown and Massachusetts Control Communities

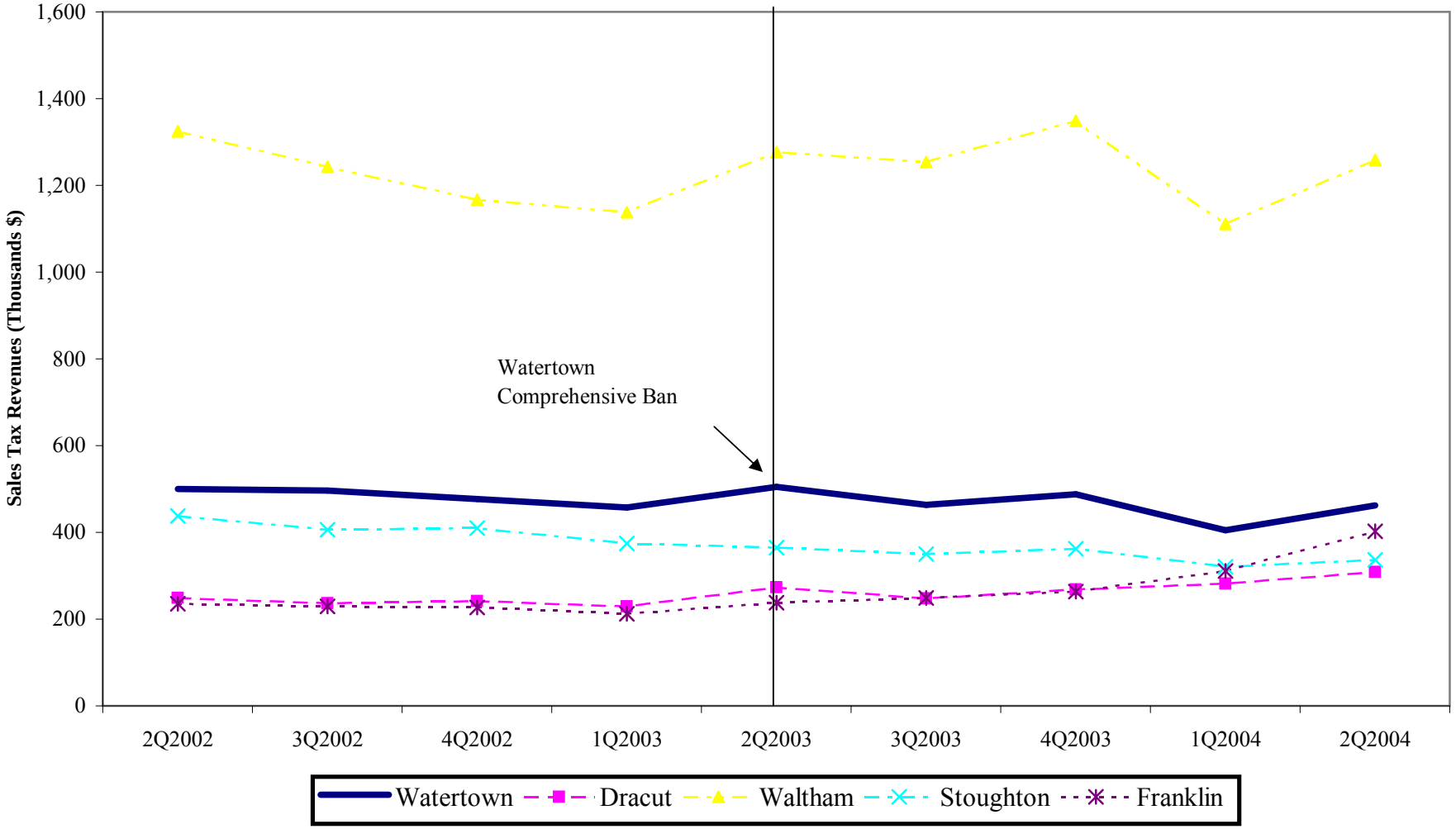


Exhibit III-5i
Bars and Restaurants Quarterly Sales Tax Revenue
Sommerville and Massachusetts Control Communities

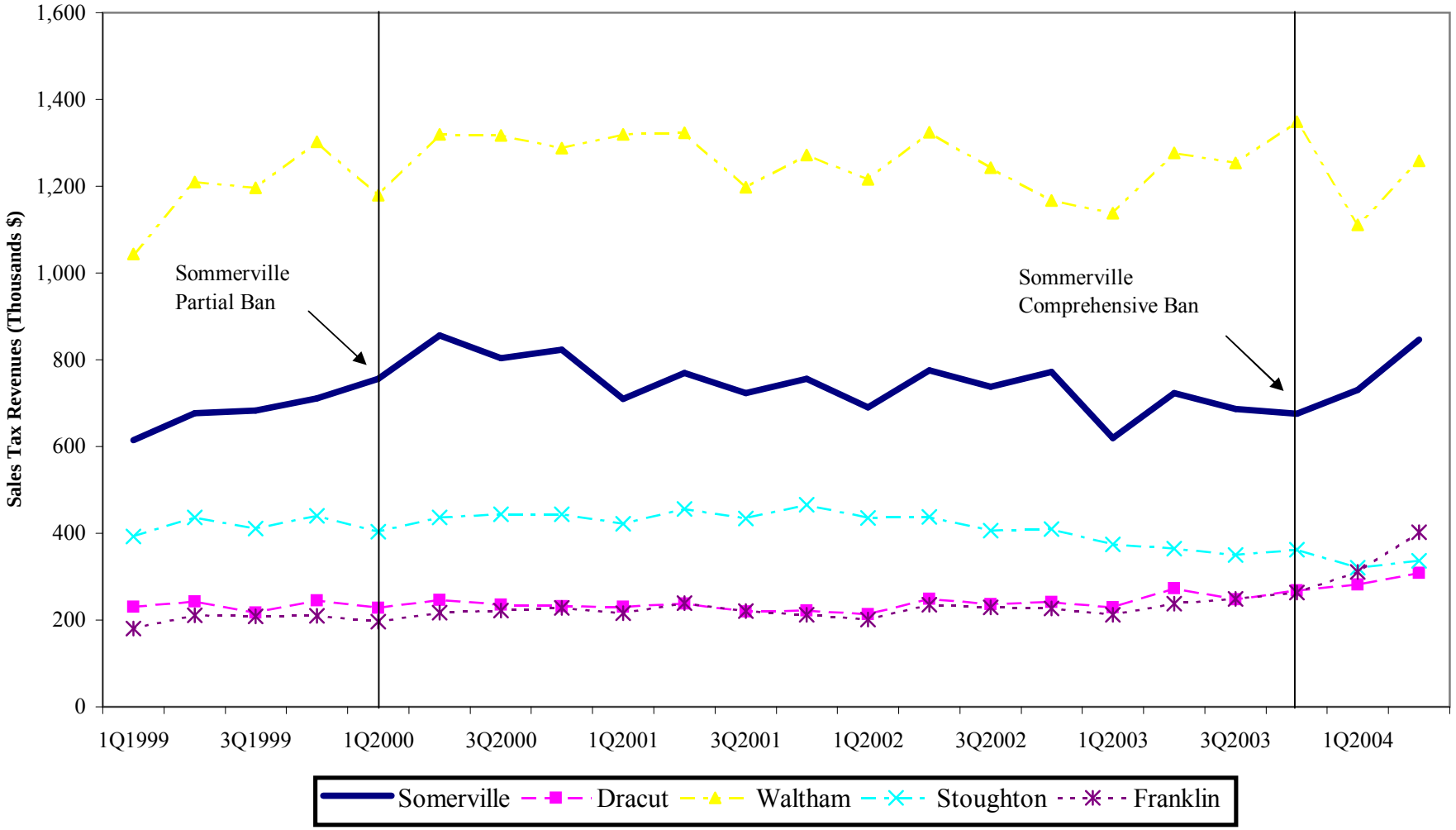


Exhibit III-5j
Bars and Restaurants Quarterly Sales Tax Revenue
Plymouth and Massachusetts Control Communities

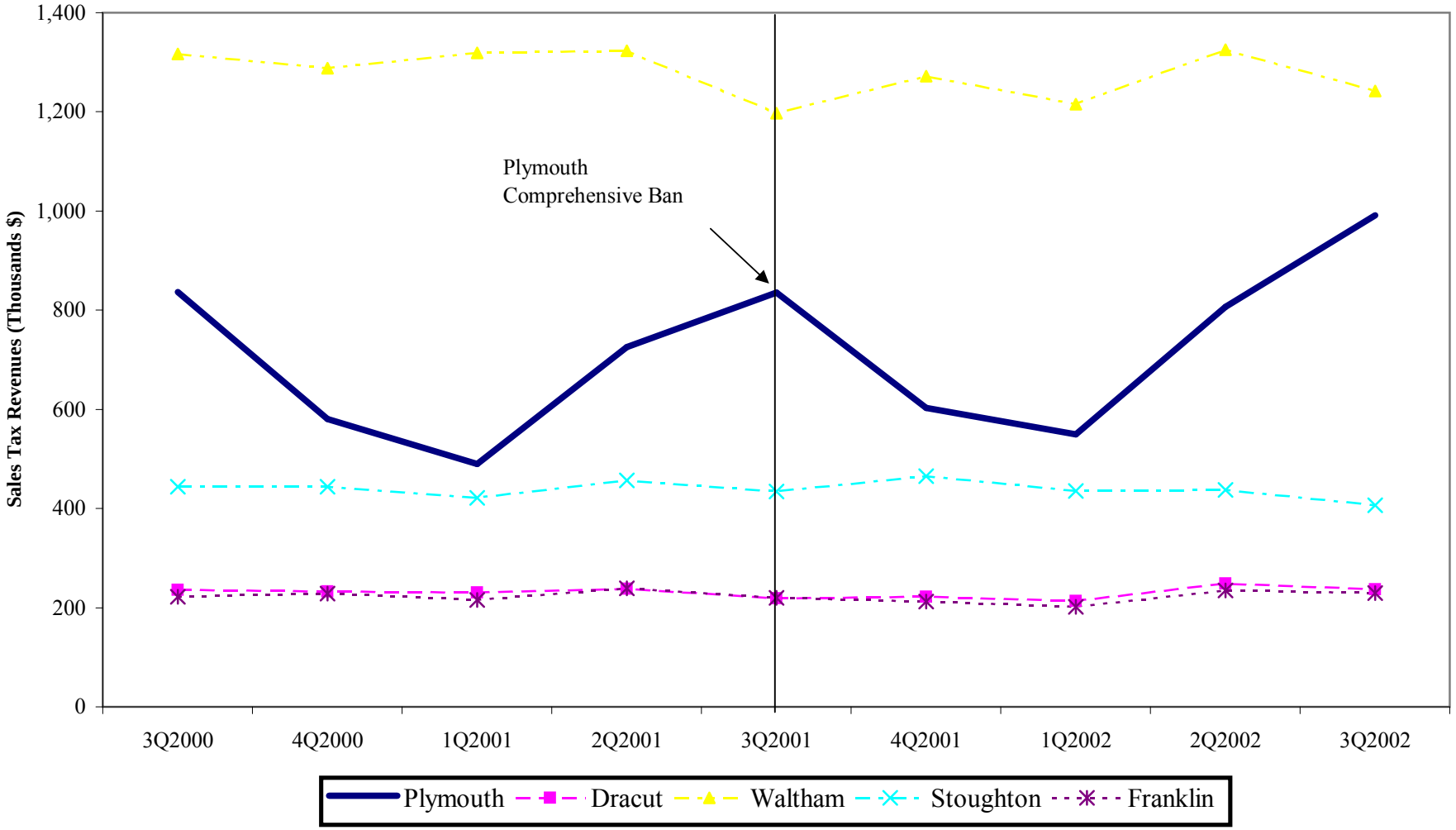


Exhibit III-5k
Bars and Restaurants Quarterly Sales Tax Revenue
Haverhill and Massachusetts Control Communities

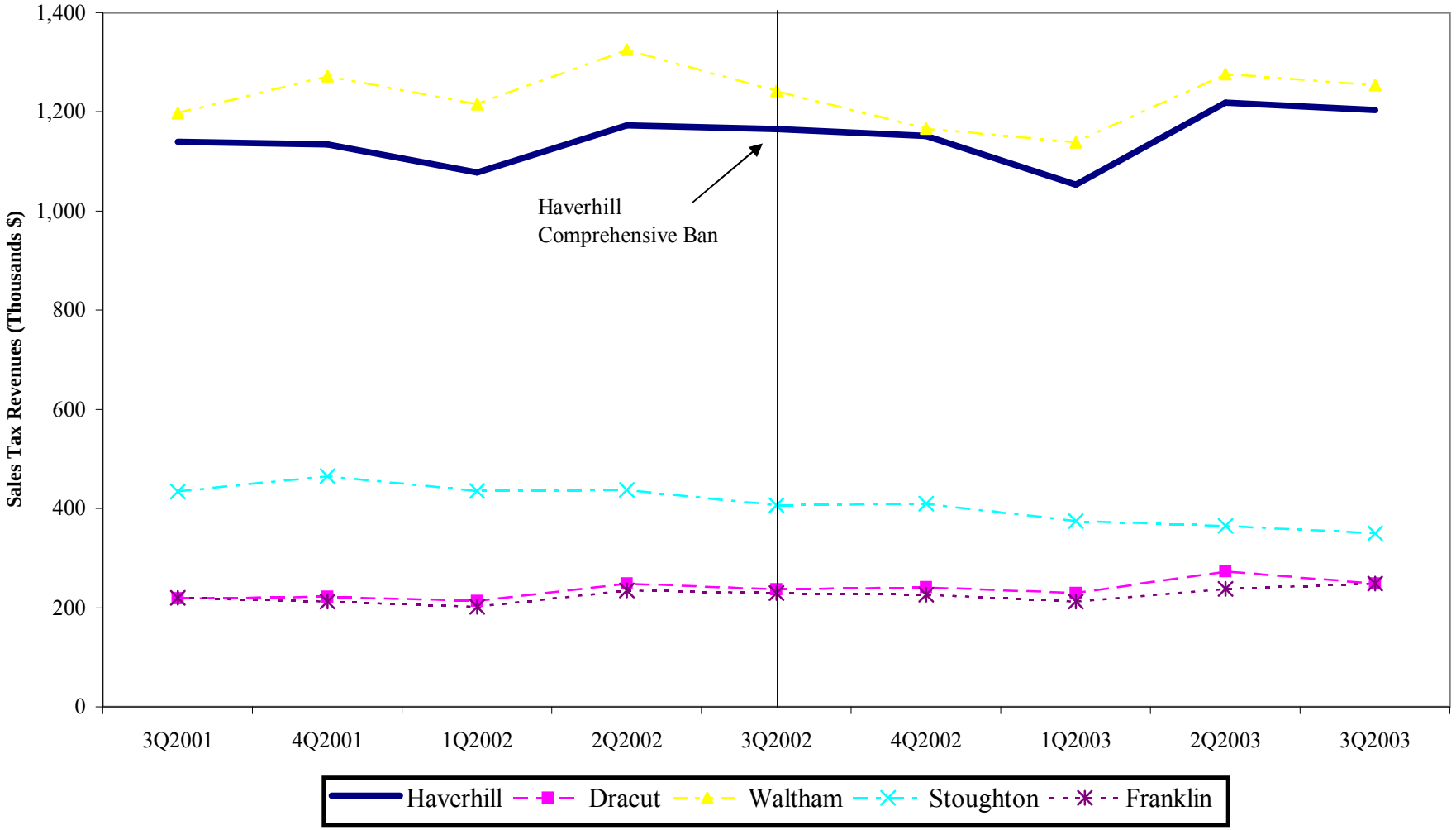


Exhibit III-5l
Bars and Restaurants Quarterly Sales Tax Revenue
Braintree and Massachusetts Control Communities

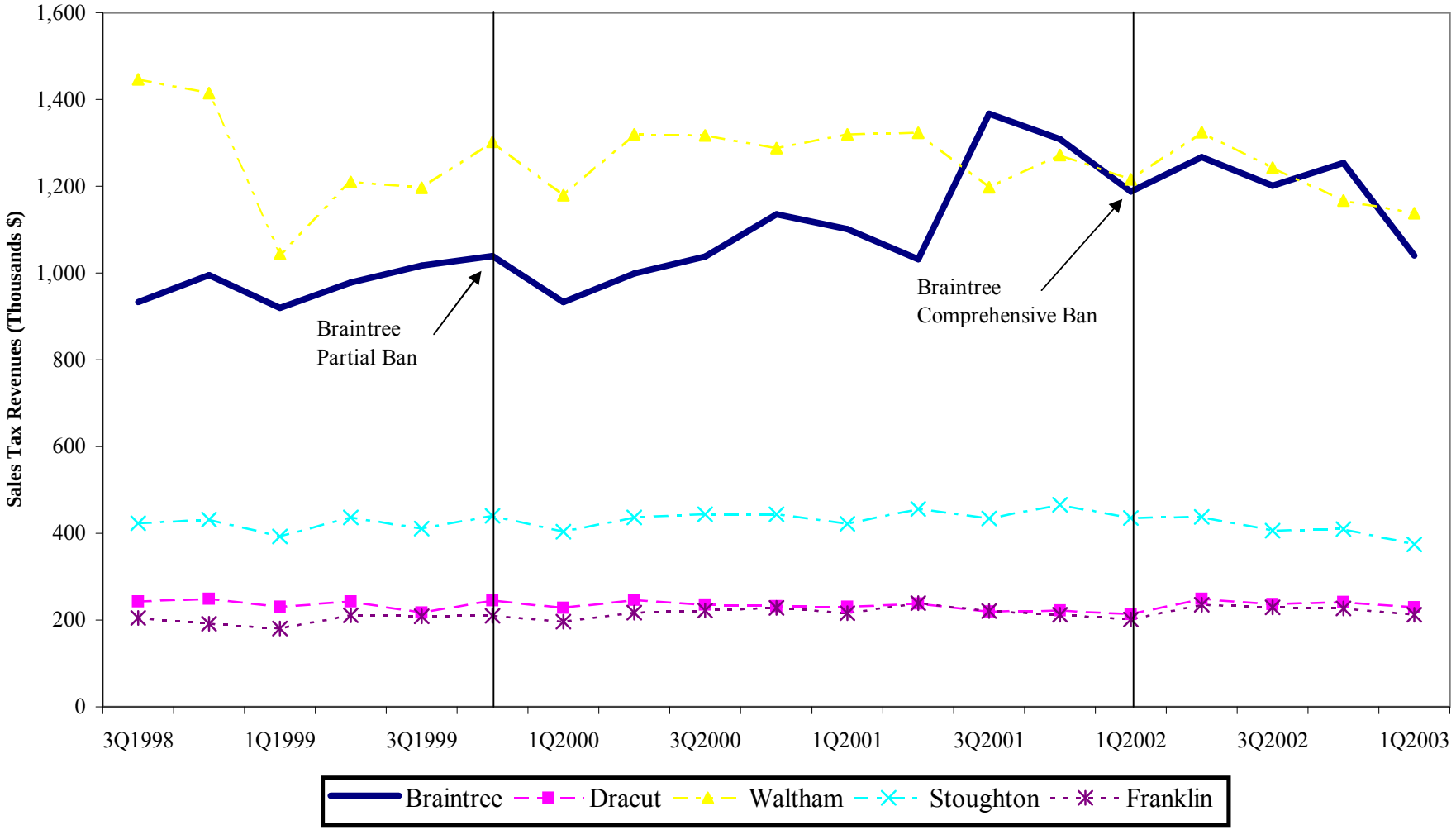


Exhibit III-5m
Bars and Restaurants Quarterly Sales Tax Revenue
Weymouth and Massachusetts Control Communities

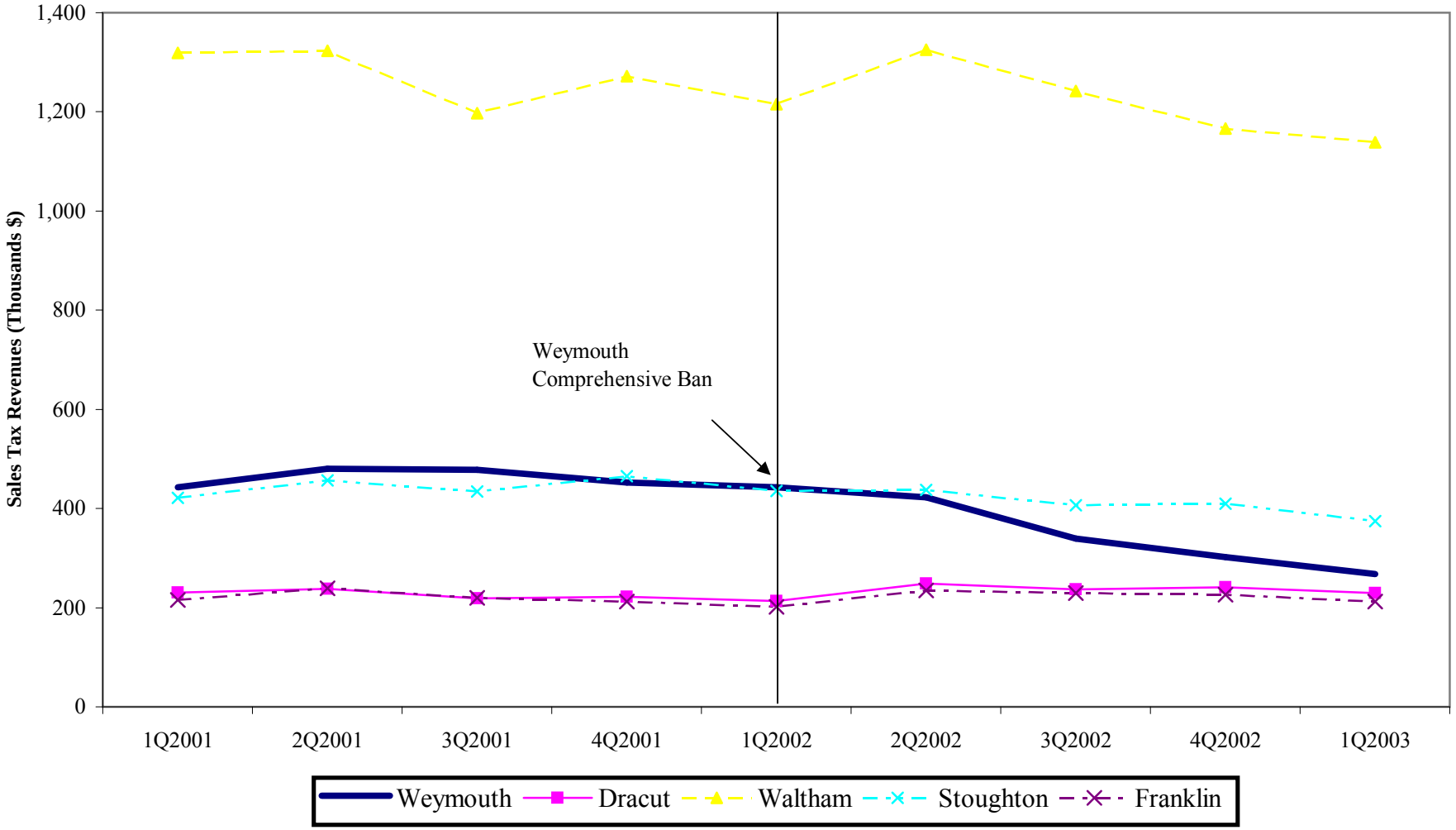


Exhibit III-5n
Bars and Restaurants Quarterly Sales Tax Revenue
Saugus and Massachusetts Control Communities

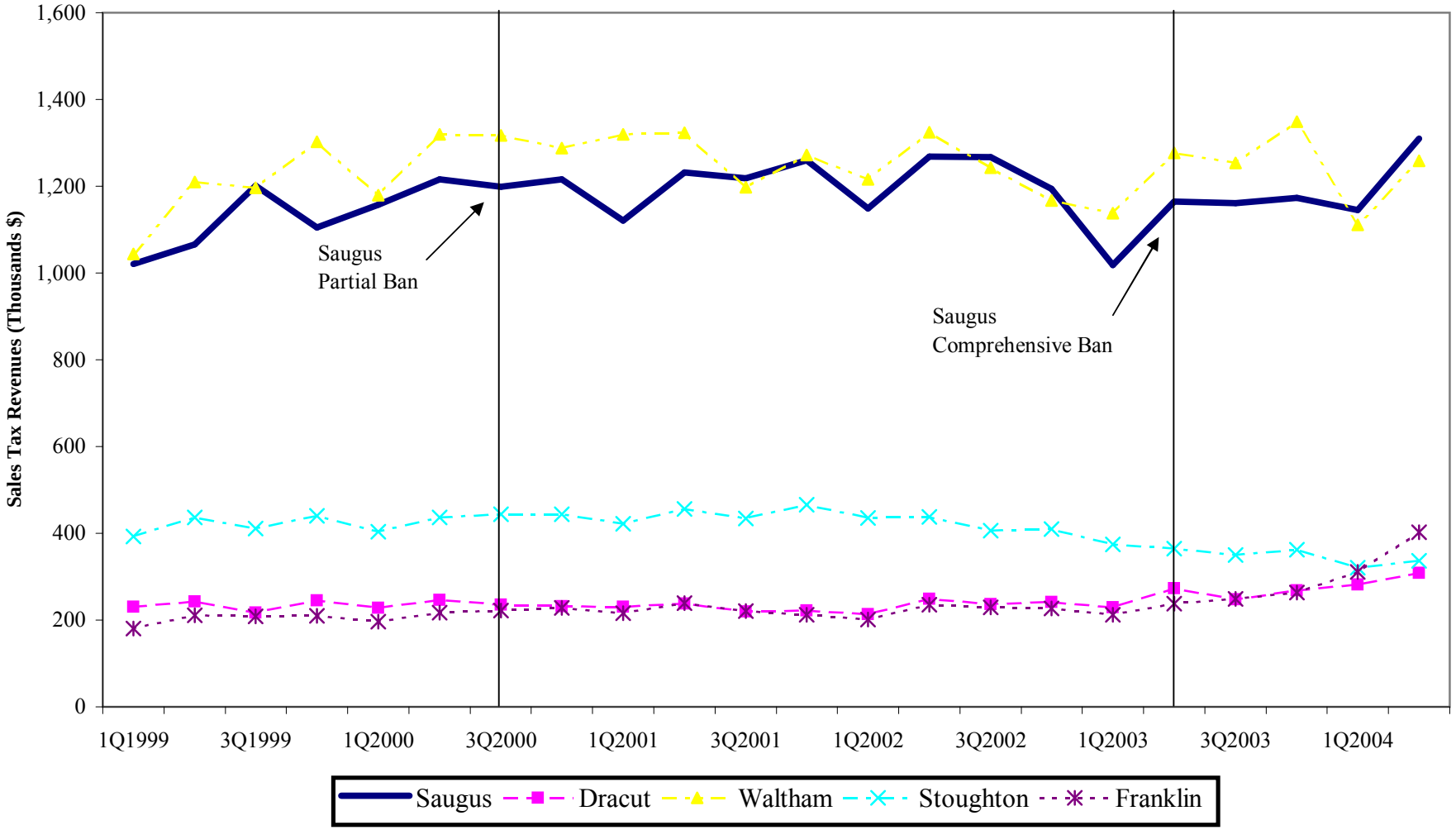


Exhibit III-5o
Bars and Restaurants Quarterly Sales Tax Revenue
Dartmouth and Massachusetts Control Communities

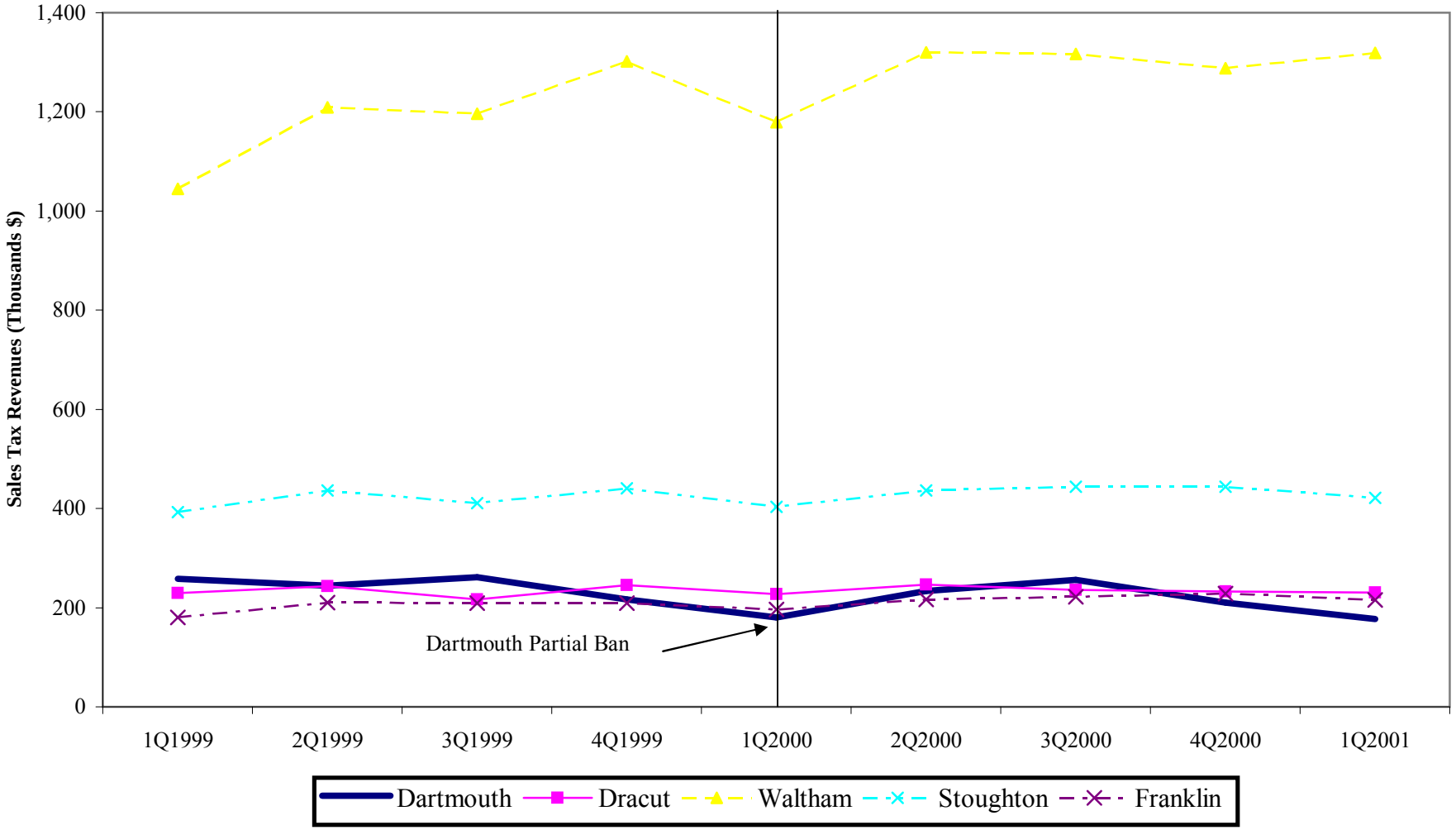


Exhibit III-5p
Bars and Restaurants Quarterly Sales Tax Revenue
Beverly and Massachusetts Control Communities

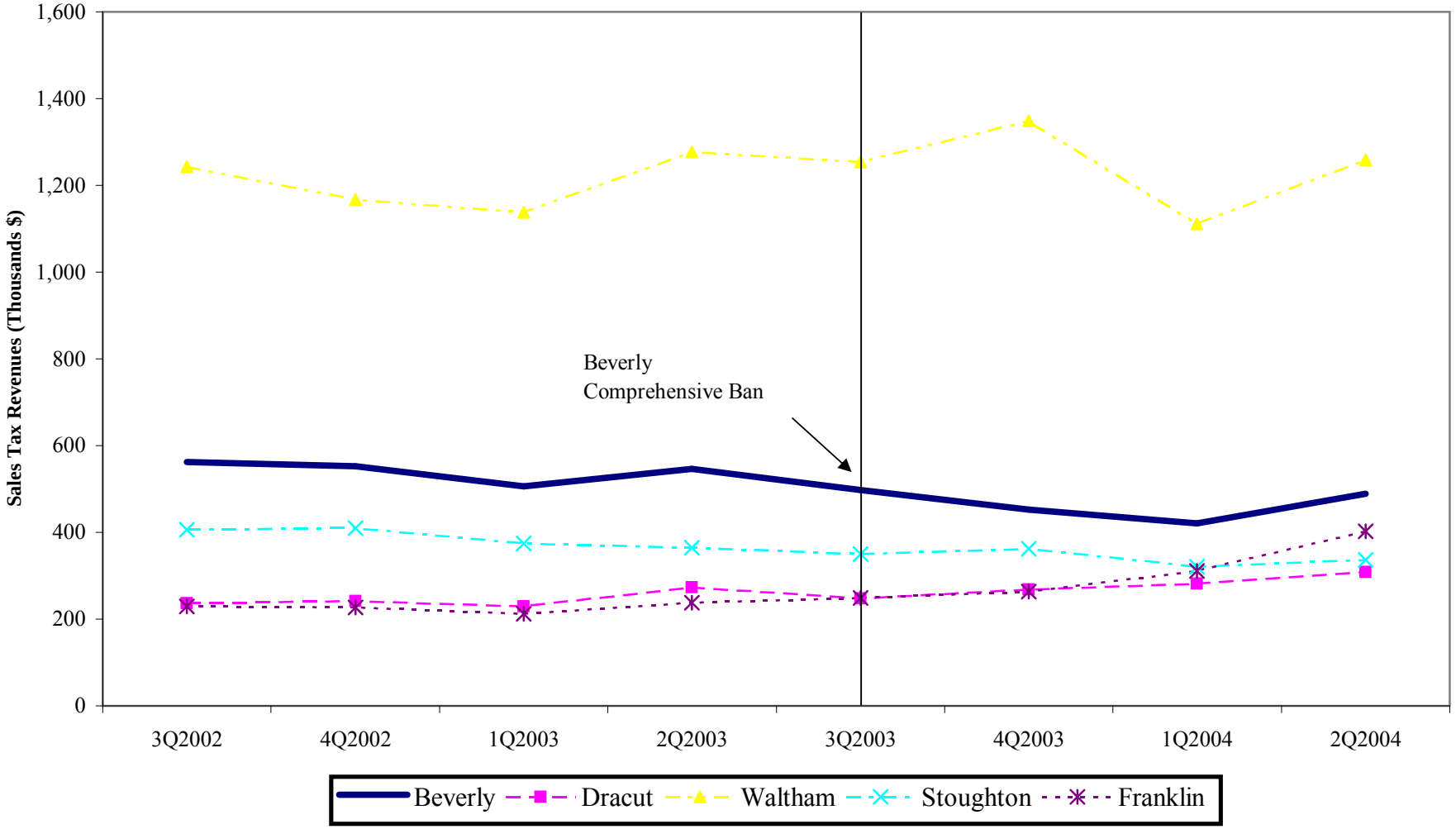


Exhibit III-5q
Bars and Restaurants Quarterly Sales Tax Revenue
Agawam and Massachusetts Control Communities

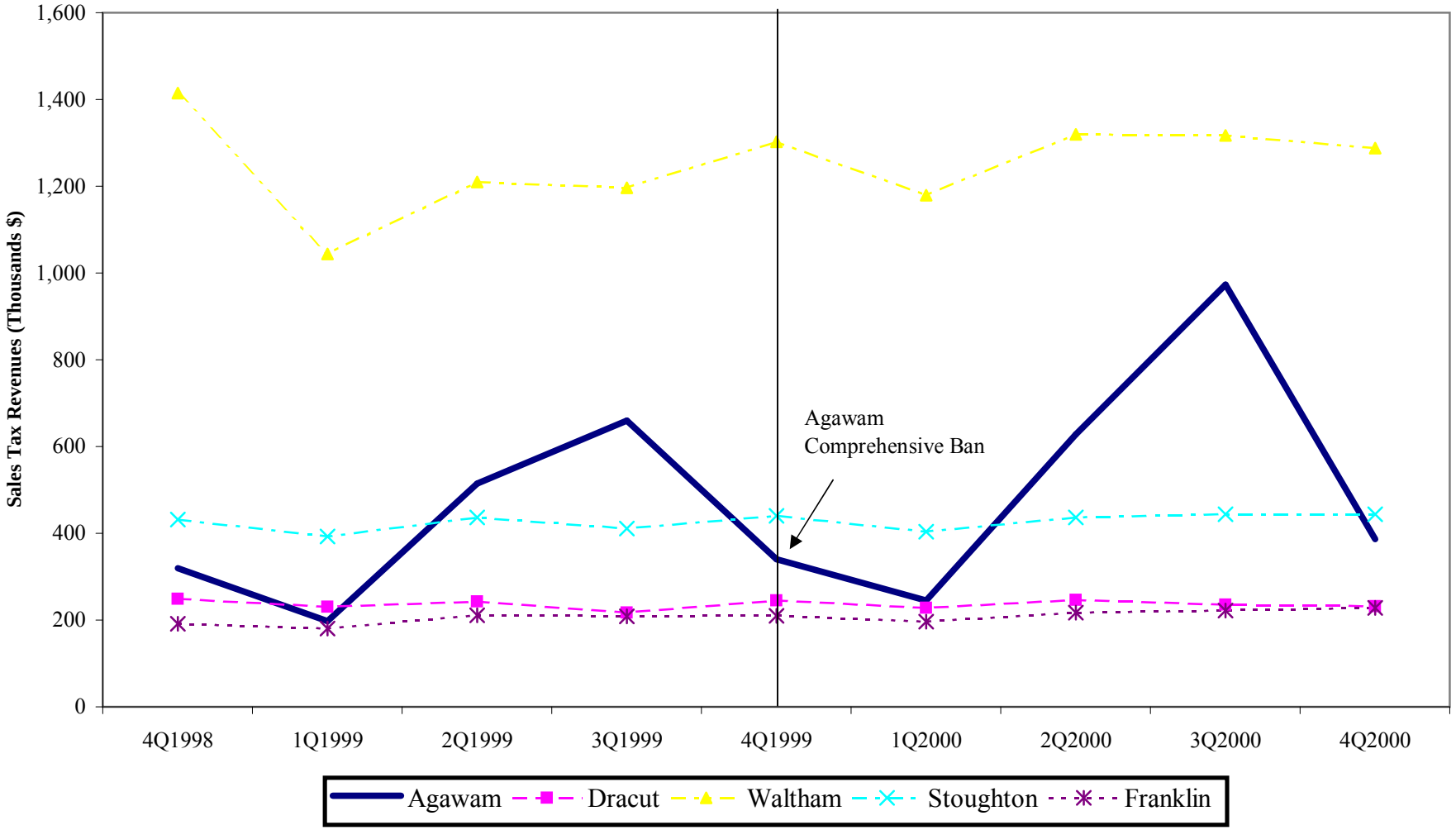


Exhibit III-5r
Bars and Restaurants Quarterly Sales Tax Revenue
Melrose and Massachusetts Control Communities

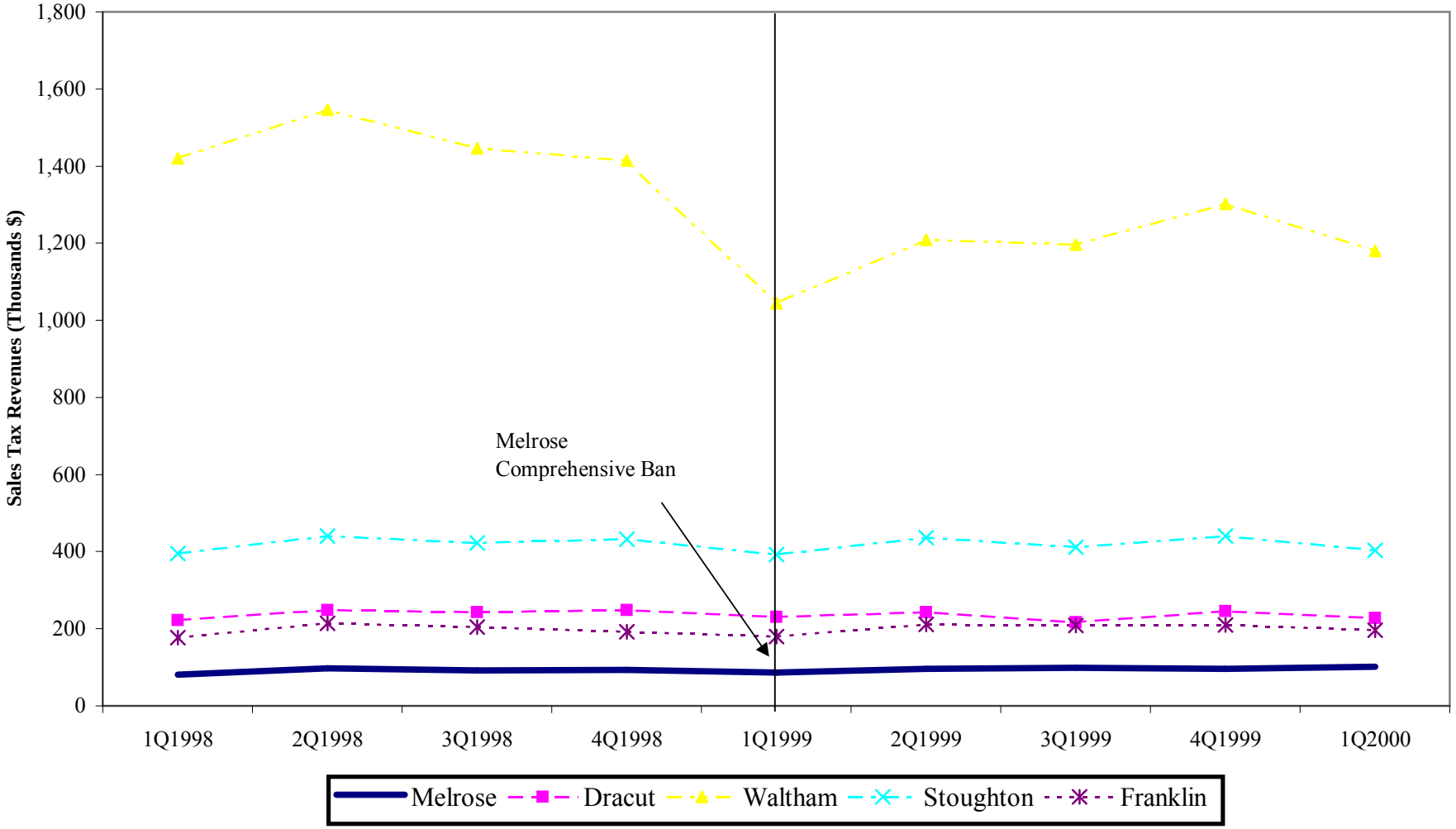


Exhibit III-5s
Bars and Restaurants Quarterly Sales Tax Revenue
Broomfield and Colorado Control Communities

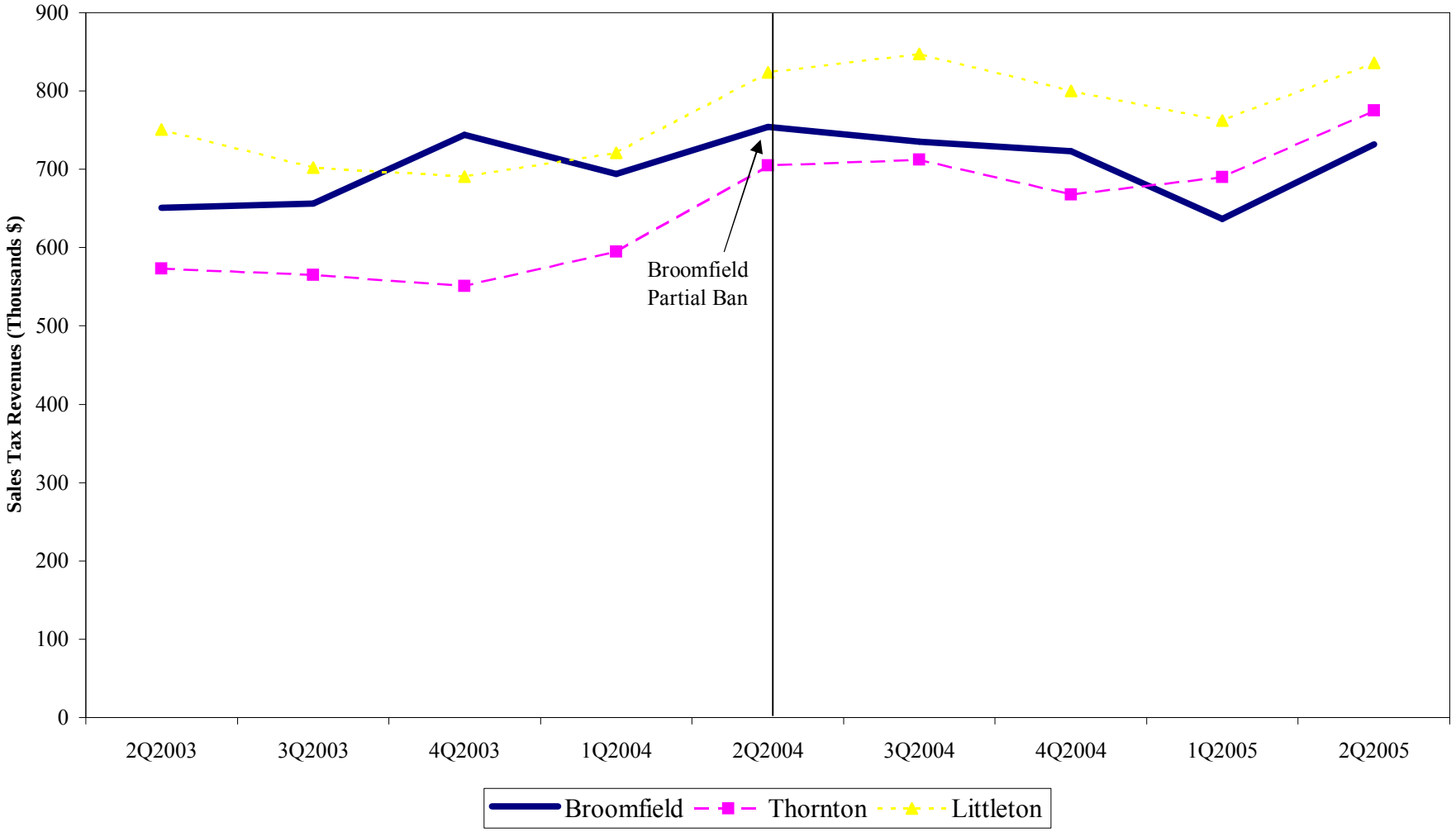


Exhibit III-5t
Bars and Restaurants Quarterly Sales Tax Revenue
Longmont and Colorado Control Communities

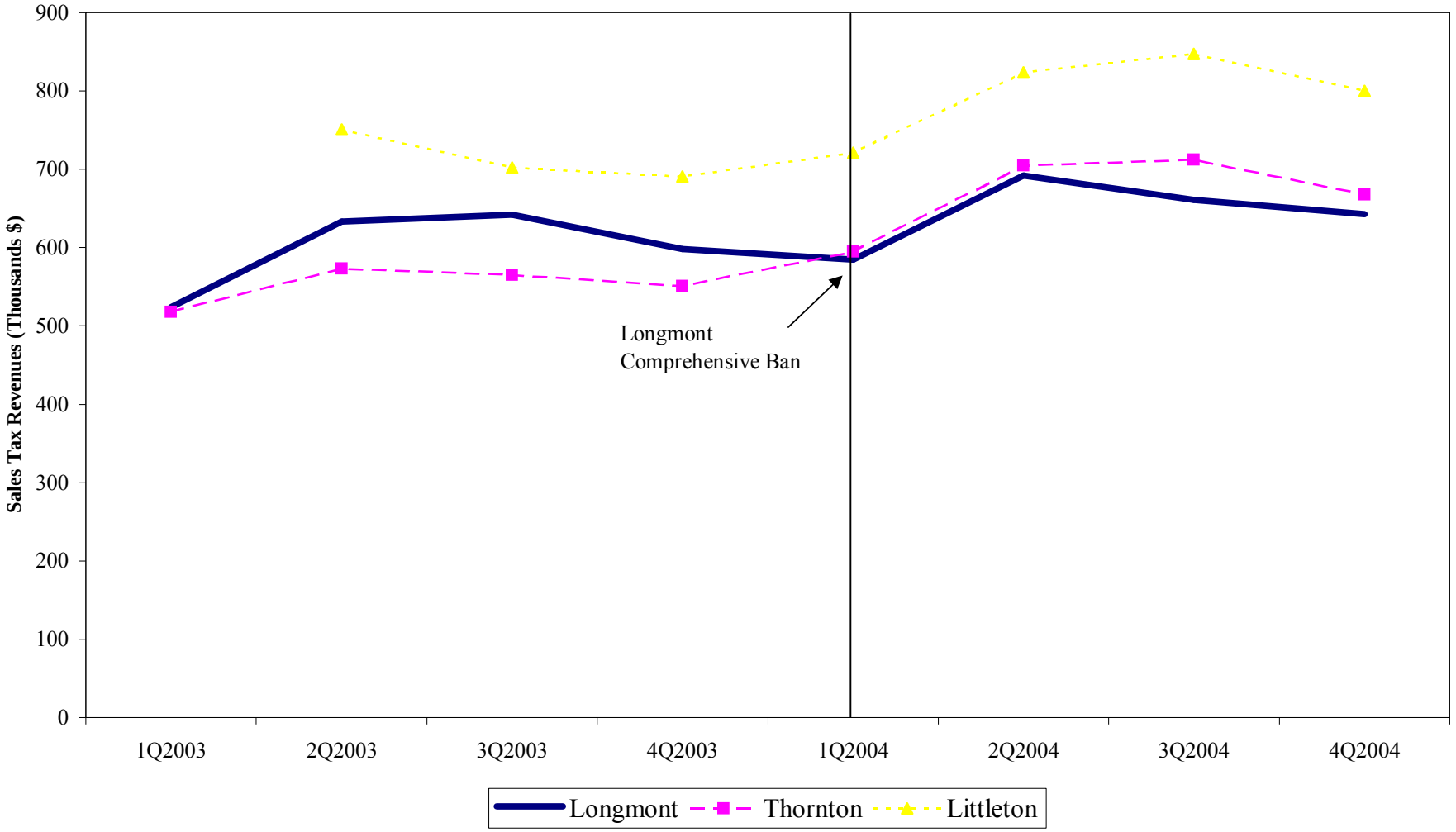


Exhibit III-6a
Maps of Comparable Communities in Sample that have Enacted Smoking Bans
Illinois

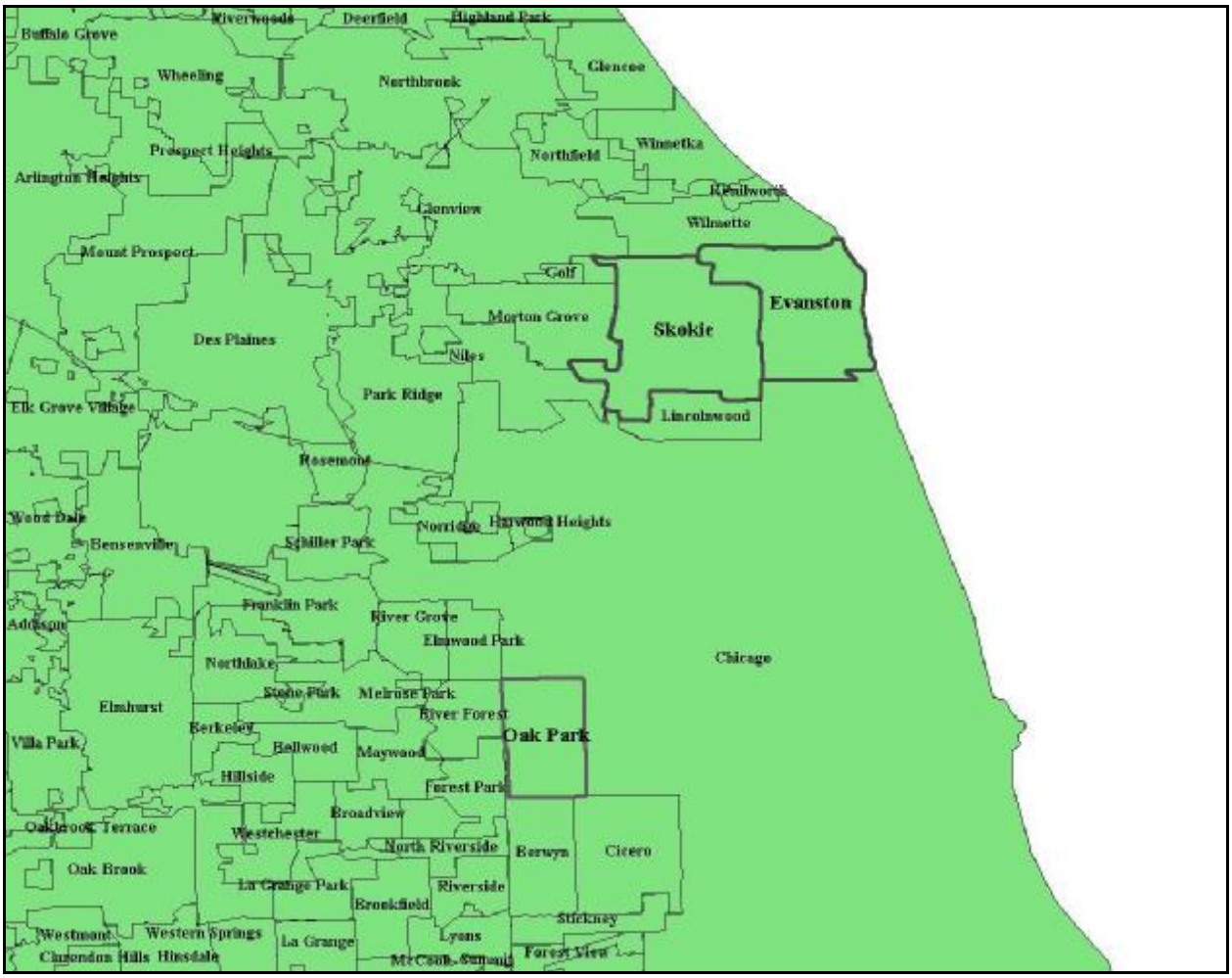


Exhibit III-6b
Maps of Comparable Communities in Sample that have Enacted Smoking Bans
North of Boston, Massachusetts

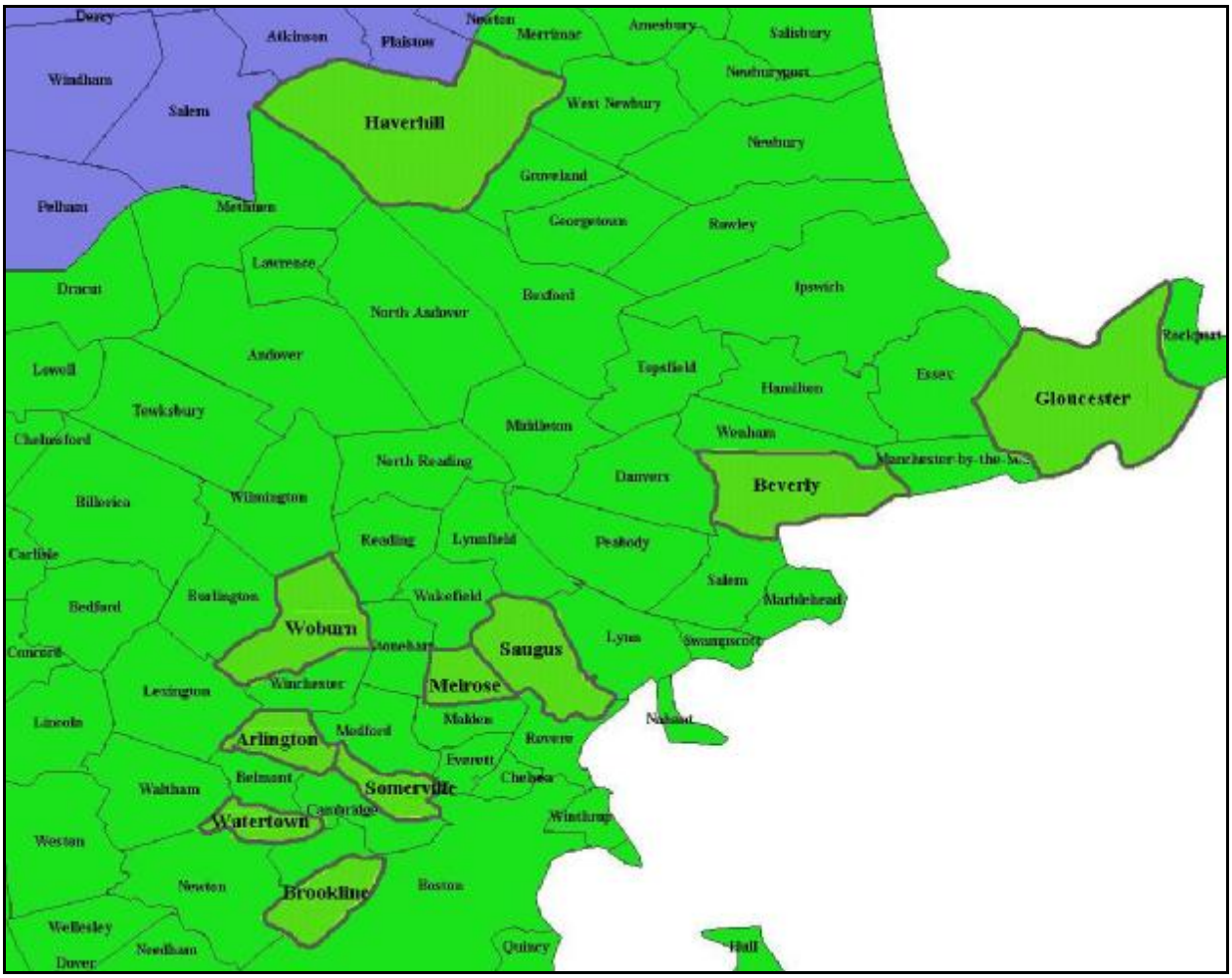


Exhibit III-6c
Maps of Comparable Communities in Sample that have Enacted Smoking Bans
South of Boston, Massachusetts

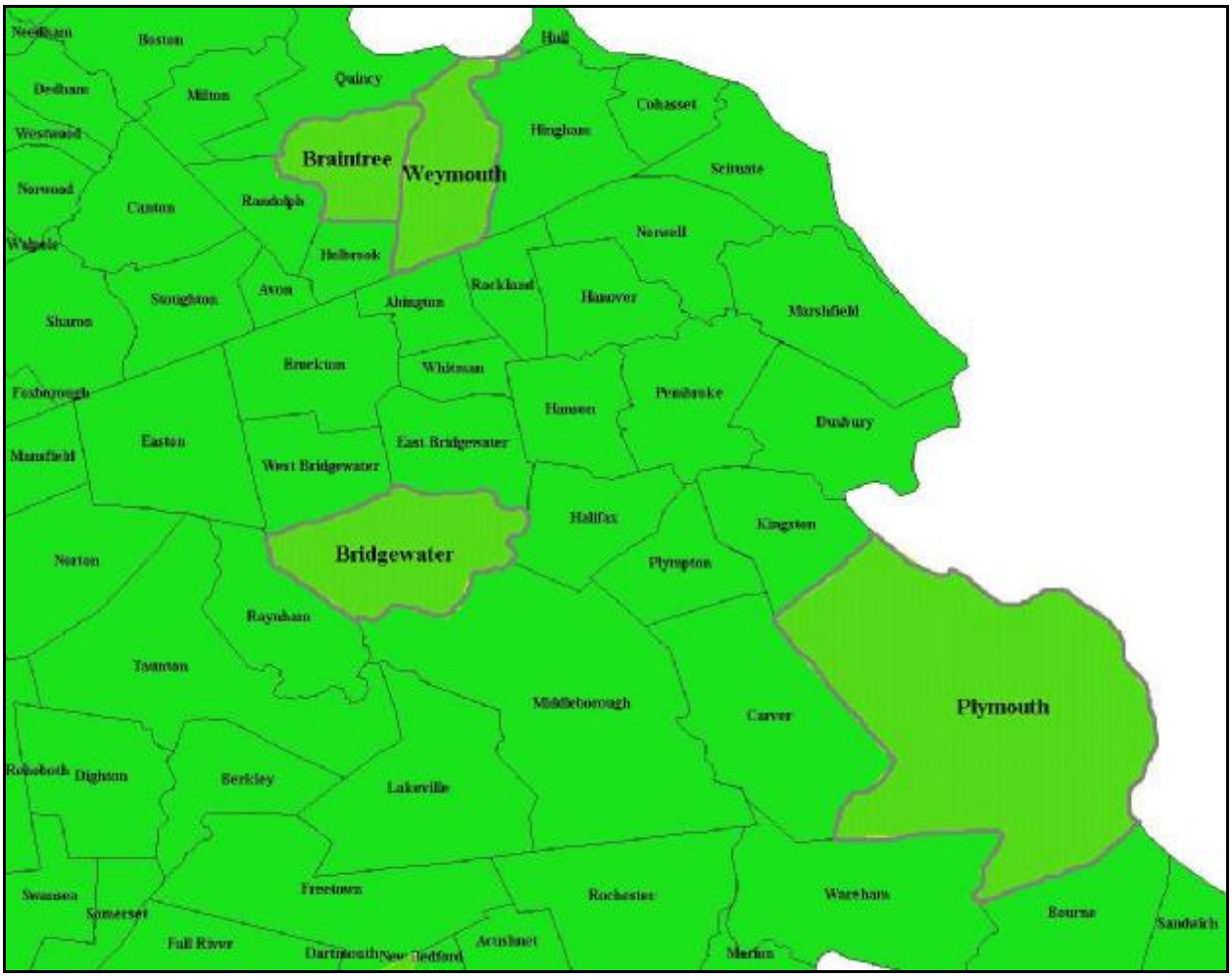
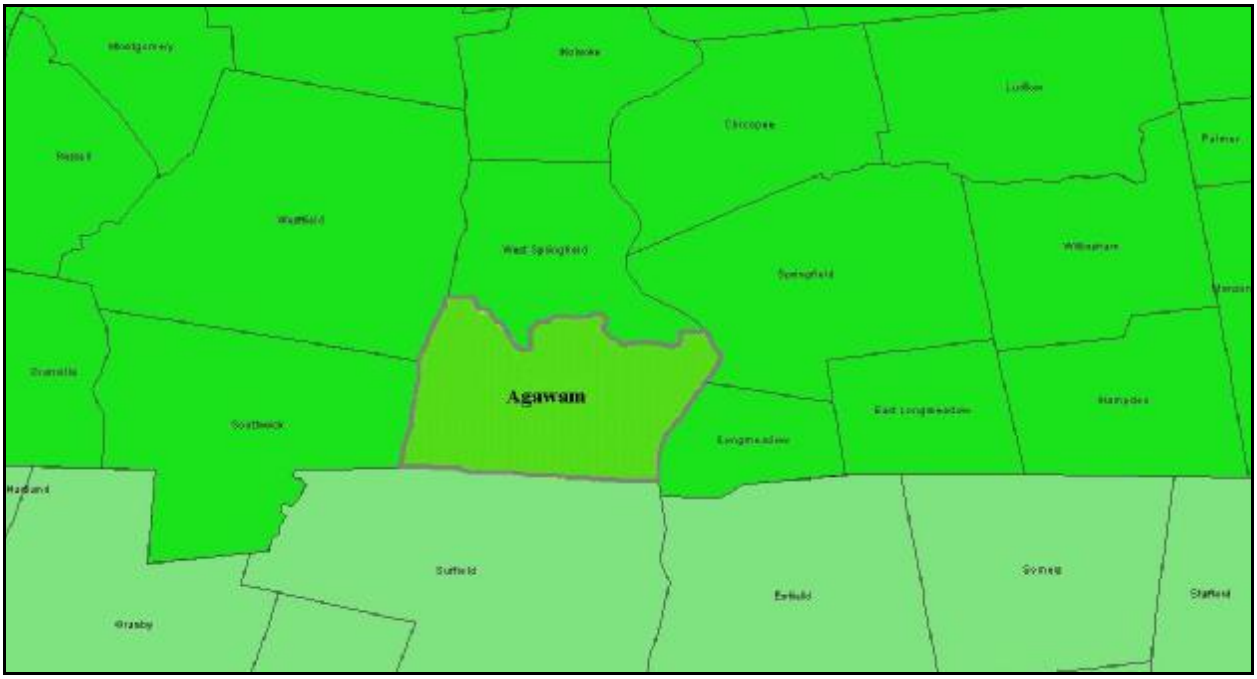


Exhibit III-6d
Maps of Comparable Communities in Sample that have Enacted Smoking Bans
Agawam and Dartmouth, Massachusetts



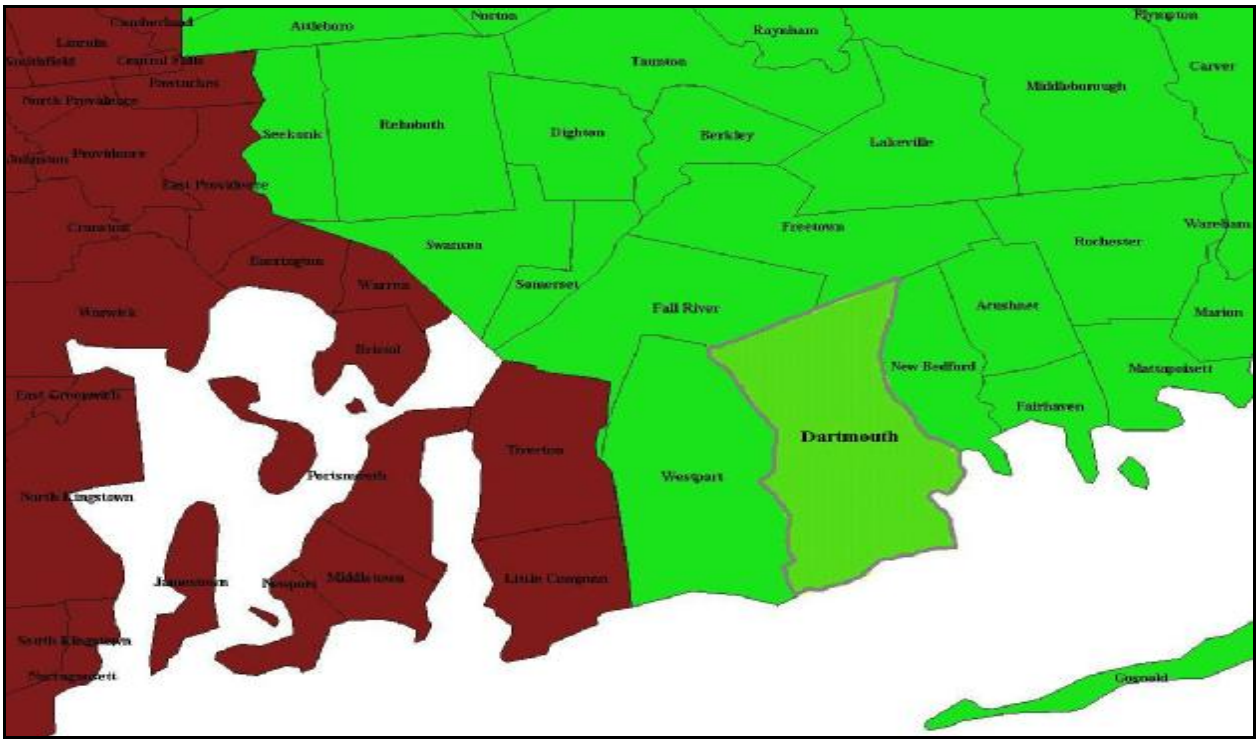


Exhibit III-6e
Maps of Comparable Communities in Sample that have Enacted Smoking Bans
Longmont and Broomfield, Colorado

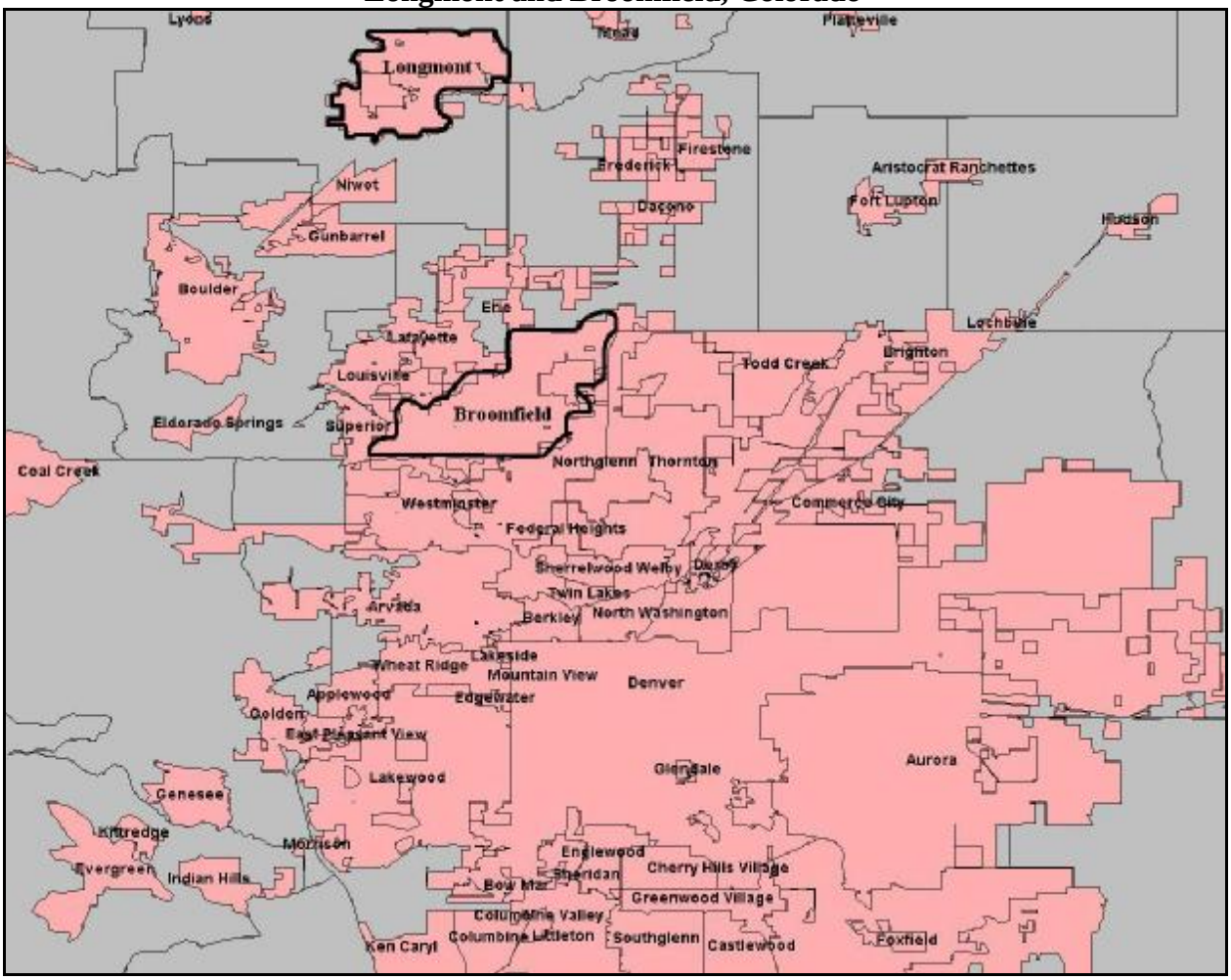


Exhibit IV-1
Panel Regression Outputs

I. Using Quarterly Indicators and Incremental Post-Ban Indicators

A. All Communities Pooled Together

Fixed-effects (within) regression — Number of obs = 569
Group variable (i): town — Number of groups = 31

R-sq: within = 0.3218 — Obs per group: min = 4
between = 0.2038 — avg = 18.4
overall = 0.3205 — max = 40

F(8,530) = 31.44
corr(u_i, Xb) = 0.0048 — Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0184638	.0120958	-1.53	0.127	-.0422253	.0052977
q2	.1463548	.0119568	12.24	0.000	.1228663	.1698433
q3	.0112171	.012148	0.92	0.356	-.012647	.0350811
banlag0	-.026877	.0290051	-0.93	0.355	-.083856	.0301021
banlag1	.0030508	.0308957	0.10	0.921	-.0576422	.0637439
banlag2	-.0078256	.0309451	-0.25	0.800	-.0686157	.0529646
banlag3	-.0628179	.0308875	-2.03	0.042	-.1234948	-.002141
banlag4	-.0305982	.0334427	-0.91	0.361	-.0962947	.0350982
_cons	-.0244605	.0086504	-2.83	0.005	-.0414538	-.0074672
sigma_u	.01101355					
sigma_e	.10071969					
rho	.01181582	(fraction of variance due to u_i)				

F test that all u_i=0: F(30, 530) = 0.18 Prob > F = 1.0000

B. By State

---

1. COLORADO

-> State = CO

Fixed-effects (within) regression — Number of obs = 45
Group variable (i): town — Number of groups = 4

R-sq: within = 0.6800 — Obs per group: min = 7
between = 0.0120 — avg = 11.3
overall = 0.6691 — max = 13

F(8,33) = 8.77
corr(u_i, Xb) = -0.0209 — Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.01578	.0232777	-0.68	0.503	-.0631388	.0315788
q2	.1235809	.0225959	5.47	0.000	.0776091	.1695526
q3	-.0031164	.0225701	-0.14	0.891	-.0490355	.0428028
banlag0	-.0224565	.0412342	-0.54	0.590	-.106348	.061435
banlag1	.011967	.0407667	0.29	0.771	-.0709734	.0949074
banlag2	-.0286154	.0407596	-0.70	0.488	-.1115414	.0543106
banlag3	-.0682612	.0412229	-1.66	0.107	-.1521299	.0156075
banlag4	.0297863	.056006	0.53	0.598	-.0841588	.1437313
_cons	-.0046476	.0165282	-0.28	0.780	-.0382746	.0289793
sigma_u	.01257858					
sigma_e	.0516547					
rho	.05597902	(fraction of variance due to u_i)				

F test that all u_i=0: F(3, 33) = 0.54 Prob > F = 0.6601

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2. ILLINOIS

-> State = IL

Fixed-effects (within) regression Number of obs = 200
Group variable (i): town Number of groups = 14

R-sq: within = 0.6081 Obs per group: min = 4
between = 0.0230 avg = 14.3
overall = 0.6025 max = 16

F(8,178) = 34.52
corr(u_i, Xb) = -0.0386 Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0392118	.0112145	-3.50	0.001	-.0613422	-.0170814
q2	.1280268	.0112145	11.42	0.000	.1058964	.1501572
q3	.0063128	.0114382	0.55	0.582	-.0162592	.0288847
banlag0	-.0586447	.0367704	-1.59	0.113	-.1312067	.0139172
banlag1	.0546408	.0582358	0.94	0.349	-.0602807	.1695623
banlag2	-.1159827	.0582358	-1.99	0.048	-.2309041	-.0010612
banlag3	.0327504	.0582358	0.56	0.575	-.0821711	.1476718
banlag4	-.1144723	.0583759	-1.96	0.051	-.2296701	.0007255
_cons	-.0118915	.0079361	-1.50	0.136	-.0275523	.0037694
sigma_u	.00773809					
sigma_e	.05550877					
rho	.01906275	(fraction of variance due to u_i)				

F test that all u_i=0: F(13, 178) = 0.24 Prob > F = 0.9973

3. MASSACHUSETTS

-> State = MA

Fixed-effects (within) regression Number of obs = 324
Group variable (i): town Number of groups = 13

R-sq: within = 0.2532 Obs per group: min = 7
between = 0.1819 avg = 24.9
overall = 0.2523 max = 40

F(8,303) = 12.84
corr(u_i, Xb) = 0.0047 Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0042113	.0198561	-0.21	0.832	-.0432846	.034862
q2	.1598232	.019585	8.16	0.000	.1212834	.1983629
q3	.0181707	.0199378	0.91	0.363	-.0210633	.0574048
banlag0	-.0244076	.0439237	-0.56	0.579	-.1108417	.0620266
banlag1	-.0032707	.0438625	-0.07	0.941	-.0895845	.083043
banlag2	.0120249	.0439503	0.27	0.785	-.0744615	.0985113
banlag3	-.0726597	.0438636	-1.66	0.099	-.1589755	.0136561
banlag4	-.0306954	.0462753	-0.66	0.508	-.121757	.0603662
_cons	-.0354796	.014247	-2.49	0.013	-.0635152	-.0074439

sigma_u	.01330859	
sigma_e	.12414925	
rho	.01136092	(fraction of variance due to u_i)

F test that all u_i=0: F(12, 303) = 0.19 Prob > F = 0.9986

II. Using Quarterly Indicators, Incremental Post-Ban Indicators and Comprehensive Ban Indicator

A. All Communities Pooled Together

Fixed-effects (within) regression — Number of obs = 569
Group variable (i): town — Number of groups = 31

R-sq: within = 0.3218 — Obs per group: min = 4
between = 0.2197 — avg = 18.4
overall = 0.3206 — max = 40

F(9,529) = 27.89
corr(u_i, Xb) = 0.0045 — Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0184286	.0121098	-1.52	0.129	-.0422179	.0053606
q2	.1464002	.0119727	12.23	0.000	.1228804	.16992
q3	.0112229	.0121593	0.92	0.356	-.0126636	.0351094
banlag0	-.0254358	.0309641	-0.82	0.412	-.0862635	.0353918
banlag1	.0044691	.0326893	0.14	0.891	-.0597477	.068686
banlag2	-.0063976	.0327595	-0.20	0.845	-.0707522	.0579571
banlag3	-.0614018	.0326762	-1.88	0.061	-.1255928	.0027893
banlag4	-.0293609	.0347266	-0.85	0.398	-.0975799	.0388582
exempt	-.0033714	.0251871	-0.13	0.894	-.0528505	.0461077
_cons	-.0242207	.0088418	-2.74	0.006	-.0415901	-.0068513

sigma_u	.01089242	
sigma_e	.10081313	
rho	.01153915	(fraction of variance due to u_i)

F test that all u_i=0: F(30, 529) = 0.17 — Prob > F = 1.0000

B. By State

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1. COLORADO

-> State = CO

Fixed-effects (within) regression — Number of obs = 45
Group variable (i): town — Number of groups = 4

R-sq: within = 0.6823 — Obs per group: min = 7
between = 0.6042 — avg = 11.3
overall = 0.6793 — max = 13

F(9,32) = 7.64
corr(u_i, Xb) = 0.0401 — Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0166821	.0236277	-0.71	0.485	-.0648103	.031446
q2	.1235623	.0228636	5.40	0.000	.0769907	.1701339
q3	-.0030743	.0228376	-0.13	0.894	-.0495929	.0434443
banlag0	-.0318142	.0460248	-0.69	0.494	-.1255635	.0619352
banlag1	.0021373	.0460226	0.05	0.963	-.0916077	.0958822
banlag2	-.0384544	.0460248	-0.84	0.410	-.1322037	.055295
banlag3	-.0776281	.0460226	-1.69	0.101	-.1713731	.0161169
banlag4	.0263858	.0571075	0.46	0.647	-.0899384	.1427099
exempt	.0247565	.0514027	0.48	0.633	-.0799474	.1294605
_cons	-.0048707	.0167304	-0.29	0.773	-.0389495	.029208
sigma_u	.00842786					
sigma_e	.0522665					
rho	.02534193	(fraction of variance due to u_i)				

F test that all u_i=0: F(3, 32) = 0.22 — Prob > F = 0.8818

2. ILLINOIS

-> State = IL

Fixed-effects (within) regression Number of obs = 200
Group variable (i): town Number of groups = 14

R-sq: within = 0.6108 Obs per group: min = 4
between = 0.0107 avg = 14.3
overall = 0.6043 max = 16

F(9,177) = 30.86
corr(u_i, Xb) = -0.0478 Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0392118	.0112077	-3.50	0.001	-.0613297	-.0170939
q2	.1280268	.0112077	11.42	0.000	.1059089	.1501447
q3	.0061859	.0114319	0.54	0.589	-.0163745	.0287462
banlag0	-.0849141	.0438001	-1.94	0.054	-.1713517	.0015235
banlag1	.05242	.0582356	0.90	0.369	-.0625054	.1673454
banlag2	-.1182035	.0582356	-2.03	0.044	-.2331289	-.0032781
banlag3	.0305295	.0582356	0.52	0.601	-.0843959	.1454549
banlag4	-.1165662	.0583716	-2.00	0.047	-.23176	-.0013724
exempt	.0850263	.077141	1.10	0.272	-.0672082	.2372609
_cons	-.011847	.0079314	-1.49	0.137	-.0274993	.0038052
sigma_u	.00843819					
sigma_e	.0554753					
rho	.0226134	(fraction of variance due to u_i)				

F test that all u_i=0: F(13, 177) = 0.26 Prob > F = 0.9957

3. MASSACHUSETTS

-> State = MA

Fixed-effects (within) regression — Number of obs = 324
Group variable (i): town — Number of groups = 13

R-sq: within = 0.2534 — Obs per group: min = 7
between = 0.2177 — avg = 24.9
overall = 0.2526 — max = 40

F(9,302) = 11.39
corr(u_i, Xb) = -0.0035 — Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0040894	.0198892	-0.21	0.837	-.0432283	.0350496
q2	.1600905	.0196317	8.15	0.000	.1214583	.1987228
q3	.0182206	.019968	0.91	0.362	-.0210734	.0575145
banlag0	-.0193732	.0467015	-0.41	0.679	-.1112748	.0725285
banlag1	.0017826	.0466637	0.04	0.970	-.0900446	.0936098
banlag2	.0171645	.0468375	0.37	0.714	-.0750048	.1093338
banlag3	-.0675709	.046702	-1.45	0.149	-.1594735	.0243316
banlag4	-.0259774	.0486191	-0.53	0.594	-.1216525	.0696976
exempt	-.0107221	.0334049	-0.32	0.748	-.0764579	.0550137
_cons	-.0341551	.0148529	-2.30	0.022	-.0633834	-.0049268
sigma_u	.01294414					
sigma_e	.12433342					
rho	.01072232	(fraction of variance due to u_i)				

F test that all u_i=0: F(12, 302) = 0.19 Prob > F = 0.9987

III. Using Quarterly Indicators, Cumulative Post-Ban Indicators and Comprehensive Ban Indicator

A. All Communities Pooled Together

Fixed-effects (within) regression — Number of obs = 569
Group variable (i): town — Number of groups = 31

R-sq: within = 0.3209 — Obs per group: min = 4
between = 0.2455 — avg = 18.4
overall = 0.3197 — max = 40

F(9,529) = 27.78
corr(u_i, Xb) = 0.0047 — Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0191499	.0120909	-1.58	0.114	-.0429019	.0046021
q2	.1457837	.0119667	12.18	0.000	.1222757	.1692917
q3	.0107721	.0121609	0.89	0.376	-.0131175	.0346617
lag0	-.0199275	.0383514	-0.52	0.604	-.0952671	.0554122
lag1	.0299555	.0402507	0.74	0.457	-.0491153	.1090264
lag2	-.0109057	.0413988	-0.26	0.792	-.092232	.0704206
lag3	-.0549778	.041406	-1.33	0.185	-.1363182	.0263626
lag4	.0571467	.0327005	1.75	0.081	-.007092	.1213855
exempt	-.0101837	.0357762	-0.28	0.776	-.0804646	.0600972
_cons	-.0241405	.0093771	-2.57	0.010	-.0425614	-.0057196
sigma_u	.01074153					
sigma_e	.10088105					
rho	.01121029	(fraction of variance due to u_i)				

F test that all u_i=0: F(30, 529) = 0.17 — Prob > F = 1.0000

B. By State

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1. COLORADO

-> State = CO

Fixed-effects (within) regression Number of obs = 45
Group variable (i): town Number of groups = 4

R-sq: within = 0.6885 Obs per group: min = 7
between = 0.5342 avg = 11.3
overall = 0.6832 max = 13

F(9,32) = 7.86
corr(u_i, Xb) = -0.0975 Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0166374	.0233961	-0.71	0.482	-.0642937	.0310188
q2	.1268944	.0222426	5.71	0.000	.0815876	.1722011
q3	-.0029177	.0226128	-0.13	0.898	-.0489786	.0431431
lag0	-.0531586	.0490992	-1.08	0.287	-.1531703	.0468532
lag1	.0338955	.0531253	0.64	0.528	-.0743172	.1421082
lag2	-.0389256	.0529356	-0.74	0.467	-.146752	.0689007
lag3	-.0391178	.0531253	-0.74	0.467	-.1473305	.0690949
lag4	.0651231	.0480419	1.36	0.185	-.032735	.1629811
exempt	.0455754	.0540868	0.84	0.406	-.0645959	.1557467
_cons	.0000816	.0173449	0.00	0.996	-.0352487	.035412
sigma_u	.0089837					
sigma_e	.0517542					
rho	.02925003	(fraction of variance due to u_i)				

F test that all u_i=0: F(3, 32) = 0.25 Prob > F = 0.8614

2. ILLINOIS

-> State = IL

Fixed-effects (within) regression Number of obs = 200
Group variable (i): town Number of groups = 14

R-sq: within = 0.6025 Obs per group: min = 4
between = 0.0139 avg = 14.3
overall = 0.5971 max = 16

F(9,177) = 29.80
corr(u_i, Xb) = -0.0360 Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0392118	.0113264	-3.46	0.001	-.061564	-.0168596
q2	.1280268	.0113264	11.30	0.000	.1056746	.150379
q3	.0040169	.0115064	0.35	0.727	-.0186904	.0267243
lag0	-.0811395	.0448393	-1.81	0.072	-.1696279	.007349
lag1	.1363693	.071832	1.90	0.059	-.0053881	.2781267
lag2	-.1706235	.0800899	-2.13	0.035	-.3286776	-.0125694
lag3	.148733	.0800899	1.86	0.065	-.009321	.3067871
lag4	-.0483667	.0618771	-0.78	0.435	-.1704785	.073745
exempt	.0834207	.0782653	1.07	0.288	-.0710326	.237874
_cons	-.0116027	.0080663	-1.44	0.152	-.0275211	.0043157
sigma_u	.00793411					
sigma_e	.05606296					
rho	.01963507	(fraction of variance due to u_i)				

F test that all u_i=0: F(13, 177) = 0.21 Prob > F = 0.9985

3. MASSACHUSETTS

-> State = MA

Fixed-effects (within) regression Number of obs = 324
Group variable (i): town Number of groups = 13

R-sq: within = 0.2538 Obs per group: min = 7
between = 0.1735 avg = 24.9
overall = 0.2445 max = 40

F(9,302) = 11.41
corr(u_i, Xb) = -0.1475 Prob > F = 0.0000

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.0057208	.0197901	-0.29	0.773	-.0446648	.0332233
q2	.1588075	.0196134	8.10	0.000	.1202114	.1974037
q3	.0179178	.0199541	0.90	0.370	-.0213489	.0571844
lag0	.0200295	.0695268	0.29	0.773	-.1167889	.1568478
lag1	.0206069	.0590461	0.35	0.727	-.0955869	.1368007
lag2	.0152078	.0590315	0.26	0.797	-.1009573	.1313729
lag3	-.0844036	.0590556	-1.43	0.154	-.2006161	.0318089
lag4	.0654888	.0460769	1.42	0.156	-.0251837	.1561613
exempt	-.0516649	.0623316	-0.83	0.408	-.1743242	.0709944
_cons	-.038772	.0166784	-2.32	0.021	-.0715926	-.0059515
sigma_u	.01646166					
sigma_e	.12430166					
rho	.01723625	(fraction of variance due to u_i)				

F test that all u_i=0: F(12, 302) = 0.23 Prob > F = 0.9969

Exhibit IV-2
Regression Outputs for Skokie, Illinois

A. Effects of Skokie's July 7, 2003 and July 7, 2004 Anti-Smoking Regulations, Measured Separately

Source	SS	df	MS	Number of obs = 16
Model	.158361408	5	.031672282	F(5, 10) = 8.37
Residual	.037839811	10	.003783981	Prob > F = 0.0024
Total	.196201219	15	.013080081	R-squared = 0.8071
				Adj R-squared = 0.7107
				Root MSE = .06151

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.1230915	.043497	-2.83	0.018	-.2200089	-.0261741
q2	.133293	.043497	3.06	0.012	.0363756	.2302104
q3	-.087802	.0447957	-1.96	0.078	-.1876131	.0120091
Ban1	.0437799	.0478886	0.91	0.382	-.0629226	.1504825
Ban2	.0138931	.0428329	0.32	0.752	-.0815445	.1093308
_cons	.0126231	.043497	0.29	0.778	-.0842943	.1095405

B. Quarter-by-Quarter Effect of Skokie's Smoking Ban, Beginning July 7, 2003

Source	SS	df	MS	Number of obs = 16
Model	.155198881	4	.03879972	F(4, 11) = 10.41
Residual	.041002338	11	.003727485	Prob > F = 0.0010
Total	.196201219	15	.013080081	R-squared = 0.7910
				Adj R-squared = 0.7150
				Root MSE = .06105

log_diff_r~t	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
q1	-.1230915	.0431711	-2.85	0.016	-.2181104	-.0280725
q2	.133293	.0431711	3.09	0.010	.0382741	.2283119
q3	-.081235	.0438847	-1.85	0.091	-.1778246	.0153546
lag0	-.0123749	.0315277	-0.39	0.702	-.0817669	.0570172
_cons	.0367021	.0343565	1.07	0.308	-.0389161	.1123203