

How Do Private Markets Address Smoking Externalities?

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ABSTRACT. We survey bars and restaurants in Genesee County, Michigan to examine how, absent a smoking ban, different establishments accommodate smokers and nonsmokers. We find evidence that smokers and nonsmokers are systematically accommodated. The majority of establishments without bars voluntarily ban smoking, and the majority of establishments with bars restrict smoking to a separate room or to the bar area. This pattern of accommodation is consistent with what the Coase Theorem would predict when dealing with the externalities created by secondhand smoke. (D21, H75, I18)

I. Introduction

While there is a lengthy literature about the impact of smoking bans on bars and restaurants, very little attention has been paid to how business owners accommodate smokers and nonsmokers absent a ban. As pointed out by Marlow (2008), with the exception of a handful of studies, no one has collected such data. And, data that has been collected is rather limited in that it only considers smoking versus nonsmoking sections.

To rectify this gap, we collect detailed information regarding private market accommodation of smokers and nonsmokers via a survey sent to restaurants and bars in Genesee County, Michigan. At the time the survey was done, 38 states had smoking bans in place, but Michigan was not one of them. Thus, Michigan was one of only 12 states where private market accommodation could be investigated. In contrast to previous

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surveys, our survey considers a wide range of establishment types and a wide range of accommodation policies, rather than just smoking and nonsmoking sections. Using these survey results, we analyze how accommodation differs across establishment type.

As is well known to economists, the Coase Theorem states that if private property rights are defined and enforced, private parties are able to solve the problem related to externalities. Alamar and Glantz (2007) claim that it is impossible to reach a Coasian solution with regards to secondhand smoke due to the transaction costs imposed by the large number of the establishment's smoking and nonsmoking customers who would have to be part of the bargaining process. Henderson (2007) points out that property rights over the air in the establishment are assigned to the establishment owner. He argues that as a result, the owner has an incentive to set appropriate smoking policies in her establishment based on the clientele's preferences, much like the owner has an incentive to solve other externalities related to her establishment by setting appropriate policies related to the noise level, music, and so forth. Thus, given these contrasting views, the goal of our paper is to examine the applicability of the Coase Theorem to the externality created by secondhand smoke by analyzing the private market accommodation of smokers and nonsmokers. The Coase Theorem suggests that accommodation should differ systematically by establishment type, if different types of establishments are targeting different types of consumers and setting smoking policies accordingly. For example, establishments such as bars who cater to a disproportionate number of smokers should have a more smoker-friendly environment than those catering to families and children.

In fact, we find differences in accommodation policy based on whether or not an establishment has a bar. The majority of establishments without bars voluntarily ban smoking, whereas the majority of establishments with bars restrict smoking to the bar area or to a separate room while improving ventilation. Our results suggest that this accommodation is successful, as the vast majority of establishments report few complaints regarding secondhand smoke. Our survey also collects information as to how smoking and nonsmoking employees of the establishment are accommodated. According to business owners, many of their employees smoke and list this as the main reason that employees work in an establishment that contains secondhand smoke, a result that as far as we know, we are the first to identify. Clearly, this is

not an issue if the establishment had already banned smoking.

This paper is organized as follows. Section 2 describes the survey. Section 3 presents the empirical analysis of the survey results. Section 4 discusses our results, and Section 5 concludes.

II. The Survey Instrument and General Summary Statistics

The Appendix gives the survey instrument and summary statistics. The survey and a postage paid return envelope were mailed to every bar and restaurant in Genesee County, MI in early June, 2009 and returned by July 31, 2009. Genesee County, MI is Michigan's fifth largest county with a population of 428,790, according to the U.S. Census Bureau and contains the city of Flint, which is Michigan's fifth largest city, as well as several suburbs and rural communities.

According to the most recent numbers available from the Genesee County Health Department, 25.6 percent of Genesee County residents were smokers in 2007, compared to 21.2 percent of Michigan residents and 20.8 percent of all Americans, as reported by the Centers for Disease Control (CDC).¹ Smoking prevalence has decreased both in Michigan and nationwide as 26.8 percent of Michigan residents and 28 percent of all Americans smoked in 1988.

As noted in the introduction, 38 states (and the District of Columbia) had a smoking ban at the time the data was collected, though 10 states allowed varying exceptions for bars and/or restaurants. As pointed out by Dunham and Marlow (2000b), there is a strong correlation between smoking prevalence and smoking bans. According to 2009 CDC statistics, the 25 states with the lowest smoking prevalence all had statewide smoking bans with only three (Idaho, South Dakota, and Georgia) allowing exceptions for bars.² None of the 12 states with the highest smoking prevalence had a statewide smoking ban. The average smoking prevalence was 16.1 percent in the former group and 23.1 percent in the latter. For the remaining 14 states, of which Michigan is one, just under half (six) had a statewide smoking ban. The average smoking prevalence of these states was 19.2 percent. In 2009, 19.6 percent of Michigan residents were smokers, according to the CDC, making Michigan rank 34th in terms of smoking prevalence.

We identified 706 bars and restaurants in Genesee County via the

Yahoo.com Yellow Pages. Thirty-nine surveys were returned by the U.S. Postal Service as undeliverable, resulting in 667 surveys being sent in total. Of those, 125 surveys were filled-out by establishment owners and returned to us, for a response rate of 19 percent. However, in the case of multiple establishments operating under a common name (for example, multiple McDonald's restaurants), we chose to send a survey to each establishment. Thus, in accounting for multiple establishments, we sent surveys to 504 unique establishments, giving us a unique response rate of up to 25 percent.³

The survey implemented was an extension of the survey used by Boyes and Marlow (1996) who surveyed 64 establishments in San Luis Obispo, California. The Boyes and Marlow (1996) survey consisted of six questions: what percentage of the establishment's customers smoke, whether or not the establishment attempted to reduce the amount of indoor smoke, the form that the reduction took, and whether or not the establishment received many complaints about smokers.

As seen in the Appendix, we include the same questions on our survey. We also expanded these questions to collect detailed information regarding establishment type, information regarding characteristics of smoking and nonsmoking sections (for example, is smoking allowed near the nonsmoking section or is it restricted to the bar area?), and information regarding why a business will gain or lose if a smoking ban is put in place. Gathering this detailed information allows us to paint a fuller picture of private market accommodation. For example, Boyes and Marlow (1996) claim that, absent a ban, market segmentation would evolve whereby some establishments cater to more smokers than other establishments. Our data allows us to test for a relationship between establishment type and accommodation.

In fact, being able to test for a relationship between establishment type and accommodation is a major advantage of collecting survey data. Many papers in the smoking ban literature, such as Glantz and Smith (1994), employ what Marlow (2008) calls a "community effects approach." That is, the authors use aggregated sales data rather than firm level data, which makes it impossible to examine the distributional impact of a smoking ban across different establishments. If some businesses gain following a smoking ban while others lose, the aggregated data may show no effect on sales, causing the researcher to draw the misleading conclusion that a smoking ban is costless for all establishments.

Answer choices for our survey questions were developed using both economic theory and arguments made in the popular press and political arena. For example, economic theory suggests a compensating differential for workers in hazardous environments, hence the first answer choice in the survey question that asks why employees tolerate working in an establishment that allows smoking (see question #12 in Appendix 1). Michigan politicians have made the argument that workers are stuck in smoky environments because no other job is available, hence the second and third answer choices, regarding the availability of alternative jobs, in that question. It is always possible that we may have missed an answer choice that businesses would have selected, should it have appeared on the survey. We tried to minimize this by allowing businesses to check an “other” box and then provide a written answer.⁴ There are a couple of questions where, in retrospect, it would have been nice to include something a business wrote as a possible answer choice. For example, several establishments indicated that they accommodate nonsmokers through the use of “smoke eaters” and at the time of the survey, we did not realize that this product was distinct from ventilation equipment.⁵ Despite this, on the whole, we believe we have covered all of the bases with our survey. Additionally, we were constrained to a survey length of two pages, as we felt that anything longer would have drastically reduced the response rate. The final survey came in at exactly two pages with a 10 point font. Thus, even though there may have been additional interesting questions to ask, space limitations prevented us from doing so.

III. Empirical Analysis

A. TEST FOR ACCOMMODATION DIFFERENCES ACROSS ESTABLISHMENT TYPE

Given that smoking and drinking are complementary activities, establishments with and without bars are likely to accommodate smokers and nonsmokers differently. Therefore, we separate the results of key questions based on this characteristic and conduct a difference-of-means test to examine if establishments with a bar answered questions regarding accommodation differently than those without a bar. Note that establishments with a bar include both a bar with food service available and restaurants that have a bar attached to or inside of it.⁶

Question 8 from the survey asks owners if they have reduced the amount of smoke in their establishment in order to accommodate nonsmokers. As can be seen in Table 1, both establishments with bars and those without are extremely likely to have (92 percent of those with bars and 81 percent of those without), resulting in no statistically significant difference between the two responses.

TABLE 1—Test of Differences Across Establishments

	Establishment with a bar	Establishment without a bar	Difference
Have you taken action to reduce the amount of smoke in your establishment to accommodate nonsmokers?	0.922 (0.272)	0.809 (0.398)	0.113 (0.068)
If you have taken action to reduce the amount of smoke in your establishment to accommodate nonsmokers, what action have you taken?			
banned smoking entirely	0.102 (0.306)	0.714 (0.457)	-0.612*** (0.081)
created smoking and nonsmoking sections	0.633 (0.487)	0.262 (0.445)	0.371*** (0.098)
improved ventilation	0.735 (0.446)	0.143 (0.354)	0.592*** (0.085)
If you created smoking and nonsmoking sections, which of the following best describes your section?			
near each other	0.294 (0.463)	0.615 (0.506)	-0.321** (0.155)
separate areas in the same room	0.235 (0.431)	0.231 (0.439)	0.005 (0.141)
separate rooms	0.441 (0.504)	0.231 (0.439)	0.210 (0.159)
smoking only in the bar area	0.294 (0.463)	N/A	N/A
smoking only outdoors	0.088 (0.228)	0 (0)	0.088 (0.080)
If you allow smoking in your establishment, do your employees worry about their exposure to secondhand smoke?	0.128 (0.337)	0.286 (0.463)	-0.158 (0.100)

Standard deviations in parentheses:

*: significant at 10%; **: significant at 5%; ***: significant at 1%

TABLE 1 (continued)—Test of Differences Across Establishments

	Establishment with a bar	Establishment without a bar	Difference
If you allow smoking in your establishment, why do your employees tolerate secondhand smoke?			
Compensated via wages and tips	0.304 (0.465)	0.125 (0.342)	0.179 (0.127)
Best paying job available	0.130 (0.341)	0.063 (0.250)	0.068 (0.093)
No other job available	0.065 (0.250)	0 (0)	0.065 (0.063)
Able to work exclusively in a nonsmoking section	0.152 (0.363)	0.125 (0.342)	0.027 (0.104)
Don't understand the risk	0.130 (0.341)	0.125 (0.342)	0.005 (0.099)
The smoke is not severe	0.413 (0.498)	0.313 (0.479)	0.101 (0.143)
Many employees smoke	0.848 (0.363)	0.813 (0.403)	0.035 (0.108)
Do you believe that a smoking ban will negatively impact business?	0.466 (0.503)	0.108 (0.312)	0.358*** (0.075)
Do you believe that a smoking ban will positively impact business?	0.172 (0.381)	0.385 (0.490)	-0.212*** (0.080)
Are you in favor of a ban?	0.491 (0.505)	0.695 (0.464)	-0.204*** (0.091)
Observations	58	65	

Standard deviations in parentheses:

*: significant at 10%; **: significant at 5%; ***: significant at 1%

However, these two types of establishments accommodate nonsmokers in different ways. Seventy-one percent of establishments without bars who take accommodative action have banned smoking entirely, compared to only 10 percent of establishments with bars, and this difference is significant at the one percent level. In contrast, establishments with bars are more likely to create smoking and nonsmoking sections and improve ventilation.

Despite the fact that fewer establishments with bars ban smoking,

they are more accommodating when creating smoking and nonsmoking sections. Out of the 26 percent of establishments without bars that created smoking and nonsmoking sections, 62 percent of the sections are “near each other.” In contrast, out of the 63 percent of establishments with bars that created smoking and nonsmoking sections, only 29 percent of them have smoking and nonsmoking sections “near each other,” a difference that is significant at the five percent level. According to the results of the survey, 44 percent of establishments with bars who created smoking and nonsmoking sections restrict smoking to separate rooms while 29 percent restrict smoking to the bar area. Given that smoking and drinking are complementary activities, establishments with bars are obviously hesitant to ban smoking. However, secondhand smoke is clearly annoying to nonsmokers. Our results suggest that these establishments accommodate smokers by allowing smoking in some areas of the establishment, but also accommodate nonsmokers by keeping the smokers separate from them.

The Coase Theorem states that absent transaction costs, if property rights are assigned, the problems related to negative externalities can be solved privately. Alamar and Glantz (2004) claim the transaction costs represented by the large number of smoking and nonsmoking customers makes an explicit Coasian bargain between customers impossible to strike. However, absent government intervention, the property rights over the air inside the establishment are assigned to the establishment owner. If the goal of the establishment owner is to maximize profits, then the owner has the incentive to reach the same bargain that smokers and nonsmokers themselves would reach if transaction costs were zero (Henderson, 2007). It is easy for customers to exit an establishment. Thus, the establishment will lose a disproportionate amount of sales from nonsmokers if the establishment owner is too biased in favor of smokers, and vice versa if the establishment owner is too biased in favor of nonsmokers.

We find that the majority of establishments without a bar ban smoking entirely, while establishments with bars restrict smoking to the bar area or to a separate room. This seems like a reasonable bargain that smokers and nonsmokers would strike amongst themselves if transaction costs were zero. This suggests that a Coasian solution can be achieved with property rights assigned to the establishment owner, as owners are internalizing the externality associated with secondhand smoke.⁷

A related issue is how establishment owners accommodate nonsmoking employees and why workers choose to work in

establishments that allow smoking. Our survey asked establishment owners why they think their employees tolerate working in a smoky environment. While we acknowledge that asking owners may yield different responses than asking employees, we believe it is reasonable to assume that employers have some knowledge as to why their employees choose to work for them. In addition, asking owners offers insights that are useful in thinking about why owners are in favor of or against a statewide smoking ban, as well as providing some insight as to how this labor market deals with secondhand smoke.

According to establishment owners, few of their employees worry about secondhand smoke (13 percent of establishments with bars and 29 percent of owners of establishments without bars), and the difference between these means is not significant at any traditionally acceptable level. Likewise, we do not find differences in owner responses as to why their employees tolerate secondhand smoke, which is not surprising if owners do not think workers consider this a serious health hazard. We do find that 30 percent of bar owners state that their employees are compensated via wages and tips, which seems likely given that bartenders can earn significant tip income. This suggests the possibility of a compensating differential for working in a smoky bar. Additionally, 41 percent of owners of establishments with bars that allow smoking and 31 percent of owners of establishments without bars that allow smoking report that the level of secondhand smoke in the establishment is not severe. Interestingly, many bar and restaurant workers are smokers themselves, as 85 percent of establishment owners with bars and 81 percent of those without indicated that their employees do not worry about secondhand smoke because many of them smoke.⁸ That is, the overriding reason that employers think that their employees are not concerned about secondhand smoke is because their employees engage in “first-hand” smoke. Although we are reporting owner beliefs rather than employee responses, it seems likely that owners know whether or not their employees are smokers. Therefore, it is not necessarily the case that “the staff of the restaurant [...] has a considerable interest in a smoke-free workplace due to the health risks of SHS [secondhand smoke],” as Alamar and Glantz (2004, p. 524) suggest.

B. ECONOMETRIC ANALYSIS

Since we observe heterogeneity in owner responses to the survey questions, it is of interest to determine the factors that lead a business to

ban smoking independently. Thus, we estimate the following probit model:

$$P(ban=1)_i = \Phi(\beta_0 + \beta_1 fast_i + \beta_2 adults_i + \beta_3 bar_i)$$

where for establishment i , $fast$ is a dummy variable equal to one if the establishment is a fast food restaurant, $adults$ is a dummy variable equal to one if the establishment is geared towards adults, and bar is a dummy variable equal to one if the establishment has a bar.

As seen from Table 2, fast food establishments are 33 percent more likely to ban smoking than other establishments, an unsurprising result. More interestingly however, restaurants catering to adults are not more or less likely to ban smoking, compared to other establishments after controlling for whether or not the establishment also has a bar. Thus, this latter characteristic, the presence of a bar, is the most important determinant of whether or not the establishment bans smoking on its own. Establishments containing a bar are 30 percent less likely to ban smoking than other establishments. As seen from Table 2, this is true regardless of establishment type. As long as the establishment has a bar, it is less likely to have already banned smoking, whether the establishment is a family restaurant or restaurant catering to adults.⁹

TABLE 2—Is Smoking Already Banned in the Establishment?

Variable	Estimated Coefficient
Establishment Type	
fast food	1.002* [0.331] (0.429)
restaurant geared toward adults	-0.177 [-0.068] (0.379)
Establishment also contains a bar	-0.783** [-0.298] (0.316)
Observations	94
Log-likelihood value	-51.7
Pseudo R-squared	0.184

Standard errors in parentheses; Marginal effects in brackets

*: significant at 10%; **: significant at 5%; ***: significant at 1%

IV. Discussion

Dunham and Marlow (2000a) find that the percentage of seats allocated to nonsmokers in an establishment is negatively related to the percentage of smokers in the population and whether or not the establishment is a bar, and positively related to the size of the establishment (as the larger the establishment is, the easier it is to keep smokers and nonsmokers separate). Like Dunham and Marlow (2000a), we find that establishments containing a bar are less likely to ban smoking. Additionally, our results expand upon this by illustrating the accommodation these establishments offer their nonsmoking customers in lieu of a ban.

Dunham and Marlow (2004) examine data from a survey of 978 Wisconsin bar and restaurant owners collected between February and March 2001. Fifty-six percent of those surveyed were restaurant owners and 44 percent were bar owners.¹⁰ The authors find that the more smokers the establishment serves, the smaller the nonsmoking section. They also find that college towns have more nonsmoking seats, as do establishments who cater to a “white collar” clientele and to adult customers bringing kids. Establishments with liquor licenses tend to have fewer nonsmoking seats. The authors argue that their results give evidence in favor of the applicability of the Coase Theorem to indoor smoking, as it shows that establishment owners attempt to allocate resources in a manner consistent with the preferences of their customer base. Given the systematic accommodation of smokers and nonsmokers we find across establishment type, our results reinforce those of Dunham and Marlow (2004) in that establishments in our dataset also are allocating resources in a manner consistent with the preferences of the customers they serve.

Our results also help explain the differences in how owners expect a smoking ban to affect their business. These results can be seen in Table 1. Since the majority of establishments without bars have already banned smoking, it is not a surprise that more owners of these establishments are in favor of the smoking ban than owners of establishments with bars, a difference that is significant at the five percent level. And given this, it is not a surprise that more owners of establishments without bars expect the smoking ban to positively affect their businesses compared to owners of establishments with bars, a difference that is significant at the one percent level. Similarly, owners of establishments with bars are less

likely to ban smoking and instead accommodate by restricting smoking to the bar-area or a separate room. Thus, it makes sense that more of these owners expect the smoking ban to negatively impact their establishments than owners of establishments without bars, a difference Table 1 shows is significant at the one percent level.

These results are consistent with those found by Pakko (2008), who found no significant loss from restaurants that just serve food after Columbia, Missouri's smoking ban was implemented, but found that bars and restaurants with bars showed a 6.5 to an 11 percent decrease in sales tax revenue. Likewise, Adams and Cotti (2007), using data from Quarterly Census of Employment and Wages from 2001-2004, found no statistically significant change in restaurant employment after a smoking ban was implemented in counties with a smoking prevalence equal to the national average. In contrast, the authors found a 12 percent decrease in bar employment in these counties. Dunham and Marlow (2000b), using a survey of 650 bar and 650 restaurant owners across the U.S. find that bars are twice as likely as restaurants to suffer revenue declines after a smoking ban is enacted.

Marlow (2010) looks at noncompliance with Ohio's smoking ban across establishment type, as Ohio's ban provides no exception for bars or restaurants. Marlow finds that establishments with bars are much more likely to be cited for noncompliance than restaurants that do not contain full service bars. Ninety-five percent of smoking ban citations for noncompliance went to establishments with bars, with only five percent going to restaurants. Since the beginning of the ban's enforcement in May 2007 until the end of 2009, a private club (such as an Elk Lodge or a VFW Halls) averaged 9.5 citations, a non-private establishment with a bar averaged 5.8 citations, while a restaurant averaged only 1.7 citations. This is evidence that a smoking ban is costly for establishments with bars, as it is more profitable for them to break the law and risk a citation (along with the \$100 fine per citation) than it is to comply with the smoking ban and lose business. Establishment owners in our sample have beliefs consistent with these findings, as their expectations regarding the effect a smoking ban will have on their establishments depend on whether or not their establishments also contain a bar.

Boyes and Marlow (1996) suggest that absent a smoking ban, market segmentation will develop in which some establishments will cater more to smokers than others, which they argued may explain why their survey

found that some establishments supported a smoking ban and some did not. Our results are in line with what Boyes and Marlow (1996) suggest, as we find evidence that absent a smoking ban in Michigan, market segmentation developed. Establishments containing a bar were more accommodative towards smokers than establishments without a bar, which largely explains the differences in whether or not establishment owners were supportive of a smoking ban. Owners of establishments without bars are more supportive of a ban than owners in establishments with bars, a difference that Table 1 shows is significant at the 1% level.

V. Conclusions

We find evidence that owners are attempting to correct for the problem of secondhand smoke, as accommodation depends on establishment type and customer base, consistent with what the Coase Theorem would predict. Eighty-seven percent of establishments have taken action to reduce the amount of smoke in their establishment. But, for the majority of establishments without a bar, accommodation takes the form of banning smoking outright whereas for establishments with a bar, accommodation takes the form of keeping smokers and nonsmokers as far from each other as possible, along with improved ventilation. If some individuals have a taste for indoor smoking, especially in a bar setting, the fact that bars allow smoking does not necessarily represent a market failure. Instead, it could represent a profit maximizing owner catering to a specific clientele. Likewise, if nonsmokers find secondhand smoke annoying, it seems reasonable that profit maximizing owners would choose to ban smoking in establishments without bars and keep smoking as far away from nonsmokers as possible in establishments with bars.

Finally, most establishment owners believe that workers tolerate working in a smoky environment because they do not view secondhand smoke as a risk, perhaps because they are smokers. Only 13 percent of owners of establishments with bars and 29 percent of owners of establishments without bars report that their employees worry about their exposure to secondhand smoke, while over 80 percent of all owners report that many of their employees are smokers. Therefore, it is not clear that secondhand smoke represents a market failure in this labor market. However, more research needs to be done to further examine this issue.

Appendix

The Survey and Summary Statistics

Restaurant name and address: _____
(any and all identifying information will remain strictly confidential)

1. Which of the following best describes your establishment?

<u>22.58%</u> fast food	<u>5.65%</u> sandwich and/or coffee shop	<u>33.06%</u> family restaurant	
<u>45.45%</u> restaurant geared more towards adults	<u>19.35%</u> bar with food service available		
<u>1.61%</u> bar only	<u>4.84%</u> mostly delivery/take-out		N = 124
2. If your establishment is a restaurant, does it also have a bar?

<u>50.00%</u> yes	<u>50.00%</u> no	N = 120
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3. Is your establishment part of a national chain?

<u>24.00%</u> yes	<u>76.00%</u> no	N = 125
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4. Do you currently allow smoking in your establishment?

<u>51.20%</u> yes	<u>48.80%</u> no	N = 125
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5. If you are part of a national chain and you don't allow smoking, does your national chain prohibit smoking in all of its establishments?

<u>79.17%</u> yes	<u>20.83%</u> no	N = 24
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6. What percentage of your establishment's customers smoke?

<u>26.47%</u> none	<u>5.88%</u> 1-10%	<u>12.75%</u> 11-20%	
<u>13.73%</u> 21-30%	<u>11.76%</u> 31-40%	<u>9.80%</u> 41-50%	N = 102
<u>8.82%</u> 51-75%	<u>10.78%</u> 76-100%		
7. Do you currently receive many complaints from your customers about second-hand smoke?

<u>16.96%</u> yes	<u>83.04%</u> no	N = 112
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8. Have you taken action to reduce the amount of smoke in your establishment to accommodate nonsmokers?

<u>13%</u> yes	<u>87%</u> no	N = 100
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Appendix: The Survey and Summary Statistics (continued)

9. If the answer to question #8 is “yes”, what action have you taken?

<u>37.63%</u> banned smoking entirely	<u>46.24%</u> created smoking and non-smoking sections
<u>47.31%</u> improved ventilation	<u>8.60%</u> other (please describe)

6.45% smoke eaters¹¹

N = 93

10. If the answer to question #9 is “created smoking and non-smoking sections”, which of the following best describes your sections? *(Please check all that apply)*

37.50 % smoking and non-smoking sections are near each other
25.00% smoking section kept as far from the non-smoking section as possible, but the two sections are in the same room
37.50% smoking and non-smoking sections are in separate rooms
22.92% smoking is only permitted in the bar area and not in the restaurant area
6.25% smoking is only permitted outdoors on a patio or similar structure

N = 48

11. If you allow smoking in your establishment, do your employees worry about their exposure to second-hand smoke?

<u>17.14%</u> yes	<u>82.86%</u> no
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N = 70

12. If you allow smoking in your establishment, why do you believe your employees tolerate working in an establishment that has second-hand smoke? *(Please check all that apply)*

25.00% the amount of wages and/or tips they earn from working at the establishment compensate them for exposure to second-hand smoke
10.94% no other job is available for them in a non-smoking environment that pays the same wages/tips as their current job
4.96% no other job is available for them in a non-smoking environment, even a job that would pay less in wages and tips than their current job
14.06% I allow employees who are adversely affected by second-hand smoke to work exclusively in the non-smoking section
12.50% employees don't understand the risk or don't believe that there is a risk
37.50% the level of second-hand smoke in my establishment is not severe
84.38% many of my employees smoke
3.13% other (Please describe below)

N = 64

Appendix: The Survey and Summary Statistics (continued)

13. As you know, the Michigan Legislature is considering a ban in smoking in all private establishments, including bars and restaurants. As an owner/manager, are you in favor of such a ban?

58.62% yes 41.03% no **N = 116**

14. How do you believe a smoking ban will impact business?

29.91% positive impact 30.77% negative impact 39.32% no impact **N = 117**

15. If the answer to question #14 is "negative impact", which of the following best describes the negative impact you expect to face as a result of the ban? (*Please check all that apply*). **Skip this question if you believe the ban will have a positive impact on your business.**

58.97% decreased foot traffic into the establishment
87.18% decreased time spent in establishment by existing customers
76.92% decreased dollar amount spent by existing customers on appetizers, drinks, and/or desserts
53.85% decreased hours and/or income for me
66.67% decreased hours and/or income for my employees
56.41% decrease in the amount of hiring or number of employees on staff
12.82% other (*Please describe below*) **N = 39**

16. If the answer to question #14 is "positive impact", which of the following best describes the positive impact? (*Please check all that apply*). **Skip this question if you believe the ban will have a negative impact on your business.**

37.50% minimal or no loss in foot traffic from smokers
55.00% increase in foot traffic from nonsmokers
85.00% a healthier environment for myself, my customers, and my employees
25.00% customers are seated more quickly as smokers don't linger at tables
7.50% other (*Please describe below*) **N = 40**

17. If you believe that the smoking ban will have a positive impact on your business, why haven't you banned smoking in your business (if you haven't already)?

32.00% customer retaliation (I want customers to blame the government, not me, for the ban.)
12.00% planning to but haven't yet
56.00% will lose too much business if I ban smoking and my competitors don't
20.80% other (*Please describe below*) **N = 25**

Appendix: The Survey and Summary Statistics (continued)

18. If the smoking ban fails to pass, do you plan on taking further steps to reduce the amount of smoke in your establishment at some point in the future?

37.14% yes 58.57% no 4.29% maybe¹²

19. If the smoking ban fails to pass, do you plan on banning smoking in your establishment anyway, or are you seriously considering doing so?

17.91% yes 74.63% no 7.46% maybe

Thank you very much for completing the survey!! We really appreciate it. Again, all individual answers will be kept strictly confidential, but we will make the aggregate results available, if you are interested. If you have any further comments regarding the smoking ban, please write them below:

References

- Adams, Scott, and Chad D. Cotti.** 2007. "The Effect of Smoking Bans on Bars and Restaurants: An Analysis of Changes in Employment." *The B.E. Journal of Economics & Policy*, 7(1): Article 12.
- Alamar, Benjamin C., and Stanton A. Glantz.** 2004. "Smoke-Free Ordinances Increase Restaurant Profit and Value." *Contemporary Economic Policy*, 22(4): 520-525.
- Boyes, William J., and Michael L. Marlow.** 1996. "The Public Demand for Smoking Bans," *Public Choice*, 88(1-2): 57-67.
- Dunham, John, and Micheal L. Marlow.** 2004. "The Private Market for Accommodation: Determinants of Smoking Policies in Restaurants and Bars." *Eastern Economic Journal*, 30(3): 377-391
- Dunham, John, and Michael L. Marlow.** 2000a. "The Effects of Smoking Laws on Seating Allocations of Restaurants, Bars, and Taverns." *Economic Inquiry*, 38(1): 151-157.
- Dunham, John, and Michael L. Marlow, M.** 2000b. "Smoking Laws and Their Differential Effects on Restaurants, Bars, and Taverns." *Contemporary Economic Policy*, 18(3): 326-333.
- Glantz, Stanton A., and Lisa R.A. Smith.** 1994. "The Effect of Ordinances Requiring Smoke-Free Restaurants on Restaurant Sales." *American Journal of Public Health*, 84(7): 1081-1085.
- Henderson, David R.** 2007. "Smoking in Restaurants: Who Best to Set the House Rules?" *Econ Journal Watch*, 4(3): 284-291.
- Marlow, Micheal L.** 2010. "The Economic Losers from Smoking Bans," *Regulation*, Summer: 14-19.
- Marlow, Michael L.** 2008. "Honestly, Who Else Would Fund Such Research? Reflections of a Non-smoking Scholar." *Econ Journal Watch* 5(2): 240-268.
- Pakko, Michael R.** 2008. "The Economic Impact of a Smoking Ban in Columbia, Missouri: An Analysis of Sales Tax Data for the First Year." *Federal Reserve Bank of St. Louis Regional Economic Development* 4(1): 30-40.

Endnotes

1. See, "The Health of Genesee County Data Book" by the Genesee County Health Department, available at: <http://www.gchd.us/ReportsAndData/HealthOfGeneseeCounty/>
2. See the CDC's State Tobacco Activities Tracking and Evaluation System available at: <http://apps.nccd.cdc.gov/statesystem/TrendReport/TrendReports.aspx>
3. We should note that it may have been the case that multiple establishments operating under the same name returned multiple surveys, as 21 surveys were returned anonymously. Thus, the response rate is somewhere between 19 and 25 percent.
4. A file containing the written responses in the "other" section of the questions is available from the authors upon request.
5. For information regarding "smoke eaters", see: <http://smokeeaters.org/cigarette>. It is interesting to note that the website illustrates that a smoke eater can cost as much as \$3,000, illustrating that establishments are willing to undergo considerable

expense to accommodate nonsmokers.

6. Note that we exclude “bar only” from the analysis as they only make up 1.61 percent of the observations.
7. Of course, the data is not fine enough to know for certain whether or not an efficient solution is reached with or without a smoking ban. All the data can do is examine whether or not accommodation policies, absent a smoking ban, are consistent with the thought experiment that asks what a Coasian bargain would look like absent transaction costs.
8. Of course, this does not imply that 80 percent of bar and restaurant workers are smokers. This means that 80 percent of bar and restaurant owners report that many of their employees smoke. That is, if over half of bar and restaurant employees smoke in 80 percent of establishments, then we would expect the answer we received.
9. We also estimated a specification of the probit model that included city dummies to capture city specific effects. The coefficient on *bar* remained significant and all city dummies were insignificant. Results available from the authors upon request.
10. In Dunham and Marlow (2000a, 2000b, and 2004), owners self-identified as bar or restaurant owners. Following this, Marlow (2010) defines bars as “businesses that focus on alcohol sales or, if they also serve food, prominently list alcohol on their menu. Business names often contain ‘bar,’ ‘pub,’ ‘brew,’ ‘club,’ ‘drinking,’ ‘sports bar,’ ‘billiards,’ ‘darts,’ ‘lounge,’ or ‘public house’ in their title. Most are small bars, but there are also national corporate chains, such as Chili’s and Applebee’s, that offer full-service bars” (p. 17). Thus, there is broad overlap between bars in those papers and establishments with bars in our paper, allowing a comparison between the two.
11. This option was not on the original survey, but since it was repeated by several establishments, we list it as a result.
12. “Maybe” was not offered as a choice for questions 18 and 19. However, since multiple establishments listed it, we report it in the results.