Smoking Bans in European Workplaces

Federica Origo* and
Claudio Lucifora**

Introduction

Tobacco smoke is a major concern for public health. While health problems caused by active smoking are well known and extensively documented, in recent years more attention has been paid to the negative consequences of exposure to tobacco smoke (or passive smoking). In the EU-25 the latter is the prime cause of death for more than 79 thousand adults each year and almost nine percent of them die for exposure to tobacco smoke at work (Jamrozik 2006). This evidence has recently prompted both international organizations and numerous countries to design and implement more effective and comprehensive tobacco control policies, including comprehensive smoking bans: national (or federal) laws banning smoking in all indoor public places and private workplaces, including bars and restaurants. The inclusion of bars and restaurants is the main novelty with respect to previous smoking bans, which were generally limited to public places (such as schools or hospitals) or privately initiated within the workplace.

In the last few years almost all members of the European Union have implemented this type of comprehensive smoking bans, albeit at different dates and with different degrees of enforcement. Comprehensive smoking bans are currently in place in all the EU-15 countries.

Their introduction has been characterized by an intense public debate and high expectations regarding their possible effects on exposure to smoke and health. While families with small children hailed them and started going more often to the restaurant, many restaurateurs and bartenders feared that such bans could negatively affect their business by reducing the number of smokers among their habitual customers. For instance, official data provided by the Central Statistics Office of Ireland, which was the first EU-15 country to adopt a comprehensive smoke-free regulation in March 2004, shows that pubs' sales declined on average in the year following the introduction of the new regulation (that is, from April 2004 to March 2005), but this trend actually started long before the adoption of smoking bans and it probably had more to do with the considerable increase in the price of a pint of beer rather than with the implementation of the smoke-free policy.

In addition to these intriguing statistics, a limited amount of country-specific research has been carried out in order to evaluate the impact of these comprehensive smoking bans on health. For example, a recent study on Germany shows that the introduction of these bans in 2007–08 did not change average smoking behavior in the population as a whole, but for some groups – i.e., men, the young, singles, and those living in urban areas – both smoking incidence and intensity declined significantly (Anger et al. 2010). Even less evidence exists of the effects within the workplace, which may appear surprising given the potential benefits to the employers in terms of lower absenteeism and higher productivity of a presumably healthier workforce.

Previous studies on privately initiated smoking bans within the workplace actually show that such restrictions are usually very powerful in changing smoking behavior among the workers. One of the earliest work in this field is Evans et al. (1999), who used data from two representative US surveys for the early 1990s. They discovered that workplace bans significantly reduce both smoking prevalence and daily cigarette consumption among smokers at the workplace. These results hold also after taking into account the potential sorting of workers across workplaces, assuming that the effect of smoking bans may be in fact a spurious correlation resulting from the fact that healthier

* Federica Origo is assistant professor at the department of economics of the University of Bergamo (IT).
** Claudio Lucifora is professor at the Università Cattolica in Milan (IT) and Research fellow at IZA (Bonn).

(non-smokers) workers are more likely to apply for jobs at firms with smoking bans. On the basis of their results, Evans et al. also argue that the progressive diffusion of smoking bans may explain the US evidence showing a significant drop in smoking prevalence among employed workers relative to the non-employed.

Other studies, using a meta-analysis approach to assess the overall effects of workplace bans, show that (private) workplace smoking restrictions are effective in protecting non-smokers from passive smoking, in reducing smoking prevalence – and lowering the number of cigarettes smoked by continuing smokers – in the entire population (Fitchtenberg and Glantz 2002; Levy and Friend 2003). A number of confounding factors are likely to contaminate empirical findings, so particular care should be used in interpreting the results. For example, there is evidence showing that privately initiated workplace smoking restrictions are highly correlated with public smoking bans, particularly at the local level, with subsequent positive effects on quitting behavior and workers' health. By using individual (usually cross-section) data, properly matched with public information on the strength of local regulation, these studies have shown that smokers resident in areas with strong local smoke-free laws, compared to smokers in areas without local smoke-free laws, are significantly more likely to report the existence of smoking policies at the workplace and quitting behavior (see Moskowitz et al. 2000 for evidence on the US and Stephens et al. 1997 for evidence on Canada). More accurate results are provided by Carpenter (2009), who exploits the differential timing of adoption of local smoking laws in different counties in Ontario (Canada) over the period 1997–04. By using a Diff-in-Diff approach, he shows that the effect of local laws on actual workplace policies vary with workers' occupation, since local laws were effective in increasing the presence of smoking bans at the workplace only for blue collar workers. Moreover, workplace smoking bans were found to further reduce smoking and exposure to tobacco smoke more for blue collar than for white collar and sales/service workers.

In light of the above evidence, in what follows we provide some details on the diffusion of comprehensive smoking bans in Europe. We first outline a methodology to measure and compare tobacco control policies across EU countries, and then we present new evidence on the effects of comprehensive smoking bans in European workplaces, considering not only exposure to smoke, but also measures of workers' perceived health – such as the presence of work-related respiratory problems – that should be directly affected by these policies. We finally discuss whether comprehensive smoke-free laws may have "other" effects both within and outside the workplace which may partly offset the (positive) effects on smoking behavior and health. The main policy recommendations based our analysis are highlighted in the concluding section.

Institutional background

At the EU level, tobacco control policies have until now been promoted through non-binding resolutions and recommendations. More specifically, in 1989, a Council Resolution (89/C 189/01) invited member states to adopt adequate measures to ban smoking in public places and on public transport. More recently, in 2003, a Council Recommendation (2003/54/EC) asked for more national measures against passive smoking in indoor workplaces, enclosed public places and public transport. Other policy recommendations against smoking are highlighted in a number of EU Directives covering all the risks to the health and safety of workers or addressing specific sectors or specific groups of workers (such as the 1992 Pregnant Workers Directive).

The European Community has also signed the World Health Organization Framework Convention on Tobacco Control (FCTC), the most widely embraced international treaty recognizing that "[…] the spread of the tobacco epidemic is a global problem, with serious consequences for public health that calls for the widest possible international cooperation and the participation of all countries in an effective, appropriate and comprehensive international response" (World Health Organization 2003). As co-signatories of the FCTC, the European Community and its member states are required to design and implement all the necessary measures to tackle passive smoking in indoor workplaces and public places, including public transport.

According to the World Bank (2003), the "optimal" policy mix in this field should not rely on only one type of intervention, but should include a wide set of measures, namely: bans and restrictions on smoking in public places and workplaces, cigarette taxation, public information campaigns, bans on the advertising and promotion of tobacco products, health warnings on tobacco product packaging and treatment to help smokers give up smoking.

All these principles appear in the 2007 Green Paper, Towards a Europe Free from Tobacco Smoke: Policy at the EU Level (COM(2007) 27 final), which acknowledges health, economic and social costs associated with exposure to tobacco smoke and further emphasizes the role of comprehensive smoking bans in reducing exposure to tobacco smoke, with subsequent positive effects on health of both active and passive smokers (European Commission 2007).

In recent years, many EU countries have followed these recommendations and adopted new laws banning smoking in all indoor public places and all workplaces, albeit at different dates and with varying scopes of regulation. Among the EU-15 countries, these bans were first introduced by Ireland in 2004, followed by Italy and Sweden in 2005. All other EU-15 countries did the same in the following years: Belgium, Spain and Luxembourg in 2006; the UK between 2006 and 2007 (depending on the region); Finland and Denmark in 2007; Germany between 2007 and 2008 (also, depending on the region); France, the Netherlands and Portugal in 2008 and, finally, Austria and Greece in the first months of 2009.

How to measure and compare public policies to fight tobacco smoke?

In order to measure the progress toward a smoke-free environment and to compare the policy mix across EU countries, a group of experts – with the support of the European Network for Smoking Prevention (ESPN) and the European Commission – has designed and implemented a specific "smoking scale", known as the "Tobacco Control Scale" (TCS). This indicator is aimed at measuring, as recommended by the World Bank, the degree of implementation of the policy mix in each EU country. For each policy, a score was assigned by national experts based on a common questionnaire. In the case of smoking bans three different aspects were considered: (i) bans in cafes and restaurants, (ii) bans in other workplaces and (iii) bans on public transport and in other public places (such as educational, health, government and cultural places). The TCS was created in 2004 and applied for the first time in 2005 (see Jossens and Raw 2006 for a detailed description of the scale).[1]

In Table 1 we report the TCS for the two available years, presenting for each EU-15 country both the overall score and the specific score for comprehensive smoking bans. Countries are ranked according to the date of introduction of such smoke-free laws. As shown in the Table, the 2005 TCS for smoking bans was very high (15 or higher) only for Ireland, Italy and Sweden, the three countries which actually implemented this type of policy before July 2005. The 2007 TCS measures the subsequent reforms implemented in this field in some of the other countries, showing a large improvement mainly in the UK and Spain.

Consistent with the timing of adoption discussed before, no change in the TCS for smoking bans appears in either of the three countries that first adopted such bans or in the remaining countries that did so after July 2007. A major exception is France, which implemented its smoke-free legislation in two stages, in 2007 and 2008 (a later deadline was allowed for bars and restaurants).

Table 1

Comprehensive smoking bans and the Tobacco Control Scale (TCS)

	Date of 1st comprehensive smoking ban	TCS 2005		TCS 2007	
		Smoking bans (max 22)	Total (max 100)	Smoking bans (max 22)	Total (max 100)
Ireland	March 2004	21	74	21	74
Italy	January 2005	17	57	17	57
Sweden	June 2005	15	60	15	61
Belgium	January 2006	8	50	13	58
Spain	January 2006	3	31	15	55
UK	March 2006–July 2007	1	73	21	93
Luxembourg	September 2006	4	26	11	36
France	February 2007 and January 2008*	6	56	12	59
Finland	June 2007	12	58	12	58
Denmark	August 2007	3	45	3	45
Germany	August 2007–2009	2	36	2	37
Portugal	January 2008	5	39	5	42
Netherlands	July 2008	9	52	9	50
Austria	January 2009	4	31	4	35
Greece	July 2009	7	38	7	36

Note: Countries are ranked according to the date of introduction of a comprehensive smoke-free legislation. For more details see Joossens and Raw (2006).

* Comprehensive smoking bans were introduced in February 2007, but the deadline was extended to January 2008 for bars and restaurants.

[1] The score for smoking bans refers to legislation in force on 1 July of each year. The TCS is a composite indicator based on both quantitative and qualitative information. Other than the presence and intensity of smoking bans, it measures the price of cigarettes and other tobacco products (max score: 30), spending on public information campaigns (max score: 15), comprehensive bans on advertising and promotion (max score: 13), large direct health warning labels (max score: 10) and treatment to help smokers quit (max score: 10).

Furthermore, the overall TCS highlights that comprehensive smoking bans are important in the tobacco control policies of many countries, but also other policies may play a crucial role, as shown by the relatively high score registered by the UK even before the introduction of comprehensive bans. These policies include high taxation on cigarettes and spending funds on public information campaigns and on treatment to help smokers quit. Nonetheless, the adoption of comprehensive smoke-free laws is the prime source of variation in the overall TCS.

New evidence on comprehensive smoking bans and workers health in Europe

The Figure depicts the incidence of workers exposed to tobacco smoke at the workplace in 2005. It reports both the share of all workers exposed to passive smoking and those who are exposed for almost their entire working time ("heavy" exposure). The EU-15 countries are ranked in ascending order according to the first indicator. The Figure clearly shows that, regardless of the indicator considered, exposure to passive smoking is much lower in those countries that introduced a new comprehensive smoke-free law before the end of 2005 (namely, Ireland, Italy and Sweden). However, the fact that few workers in these countries are still exposed to some passive smoking at the workplace reveals that the enforcement of these laws is not perfect yet, despite the high level of commitment characterizing both employers of private workplaces and owners of public recreational places in these countries.

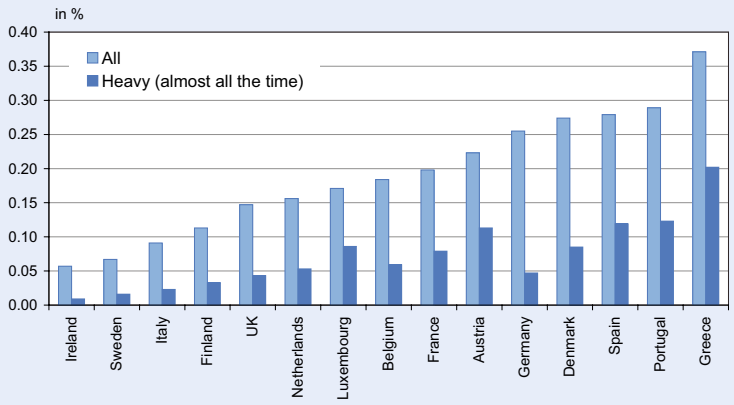
This data is taken from the fourth European Working Condition Survey (EWCS), which is carried out every five years by the European Foundation for the Improvement of Living and Working Conditions on a representative sample of workers in the EU member states and other European countries, with the aim to investigate the main characteristics and evolution of working conditions across Europe. The survey provides detailed information on a wide range of work-related issues, including work organization, risk exposure, job satisfaction and work-related health. The first survey was carried out in 1990; hence four waves are now available (for 1990, 1995, 2000 and 2005).

In light of the institutional setting discussed above, we exploit the different timing of the introduction of comprehensive smoking bans across the EU countries to estimate the impact of such laws on a number of outcomes within the workplace. We implement a Diff-in-Diff methodology, comparing countries introducing a comprehensive smoking ban (the so-called "treated") with countries which did not implement such reform (the so-called "controls") on the development of a number of individual and workplace outcomes (which are likely to be affected by this reform). In practice, using the 2000 and 2005 waves of the EWCS, we consider as "treated" those countries which passed and enforced a new (wider) law on comprehensive smoking bans between 2000 and 2005, namely Ireland, Italy and Sweden.[2] Note that according to the Tobacco Control Scale reported in Table 1, these are actually the countries with the highest score for the extension and enforcement of smoke-free legislation (see the "Smoking bans" column under TCS 2005). All the other EU-15 countries, within this time span, are considered as controls.

Regarding potential outcomes, we focus our analysis on those that are likely to be more directly influenced by the introduction of smoking bans. More specifically, we consider exposure to smoke at work and an indicator of health problems linked to smoke exposure, that is respiratory problems caused by working conditions.[3] In Table 2, we report the average share of workers exposed

Figure

INCIDENCE OF PASSIVE SMOKING AT WORK IN THE EU-15 IN 2005



Note: Countries are ranked in ascending order according to the % of workers exposed to passive smoking at work.

Source: Own calculations based on Fourth European Working Condidtion Survey.

[2] Note that the EWCS was conducted in fall 2005, while Italy and Sweden introduced their comprehensive smoke-free legislation in January and June 2005, respectively. Hence both countries can be included in the treated group.

[3] EWCS contains a number of measures on both risk exposure and perceived work-related health.

to fumes and smoke at the workplace – for at least 25 percent of the working time – in all EU-15 countries in 2000 and 2005. The difference over time is reported in the last column of the Table.[4] Finally, in the last rows of Table 2, we report the weighted means for the treated and the control group (defined as above) and the corresponding Diff-in-Diff estimate. Figures in the last column of the Table show that the share of workers exposed to smoke and fumes at work has declined in all EU-15 countries between 2000 and 2005, but this reduction has been on average larger in the three countries which introduced a comprehensive smoke-free law in the period considered (–7.3 percent) in comparison to the others (–4.7 percent). According to our Diff-in-Diff estimate, the comprehensive smoking bans are responsible for a 2.5 percentage points reduction in the share of workers (or the probability of being) exposed to smoke and fumes at work.

Similarly, in Table 3, we present the share of workers who reported that they suffered from respiratory problems due to their work. According to our estimates, "treated" countries experienced a (small) decline in the share of workers with work-related respiratory problems, while the same share has (slightly) increased in the "control" group.

[4] Countries are ranked according to the date of introduction of the comprehensive smoke-free law.

Table 2

Share of workers exposed to smoke and fumes at work

EU-15 country	2000	2005	Diff 2005–2000
1 Ireland	0.203	0.115	–0.088
2 Italy	0.171	0.121	–0.050
3 Sweden	0.219	0.143	–0.076
4 Belgium	0.160	0.106	–0.053
5 Spain	0.256	0.142	–0.113
6 UK	0.210	0.197	–0.012
7 Luxembourg	0.245	0.184	–0.061
8 France	0.236	0.205	–0.031
9 Finland	0.275	0.222	–0.053
10 Denmark	0.159	0.111	–0.049
11 Germany	0.195	0.182	–0.012
12 Portugal	0.227	0.203	–0.025
13 Netherlands	0.128	0.118	–0.010
14 Austria	0.198	0.165	–0.033
15 Greece	0.308	0.248	–0.060
"treated" (countries 1–3)	0.200	0.127	–0.073
"controls" (countries 4–15)	0.210	0.163	–0.047
diff-in-diff estimate			–0.025

Source: Own calculations based on Third and Fourth European Working Condition Survey.

Table 3

Share of workers reporting work-related respiratory problems

EU-15 country	2000	2005	Diff 2005–2000
1 Ireland	0.020	0.016	–0.004
2 Italy	0.032	0.026	–0.006
3 Sweden	0.036	0.030	–0.006
4 Belgium	0.027	0.021	–0.006
5 Spain	0.066	0.036	–0.031
6 UK	0.031	0.024	–0.007
7 Luxembourg	0.039	0.044	0.006
8 France	0.036	0.030	–0.006
9 Finland	0.050	0.055	0.005
10 Denmark	0.024	0.022	–0.002
11 Germany	0.027	0.022	–0.005
12 Portugal	0.056	0.058	0.002
13 Netherlands	0.017	0.043	0.026
14 Austria	0.028	0.031	0.004
15 Greece	0.086	0.144	0.059
"treated" (countries 1–3)	0.030	0.024	–0.006
"controls" (countries 4–15)	0.038	0.042	0.004
diff-in-diff estimate			–0.009

Source: Own calculations based on Third and Fourth European Working Condition Survey.

Our Diff-in-Diff estimate suggests that comprehensive smoking bans reduce the probability of respiratory problems being reported by almost one percent. Overall, these results suggest that comprehensive smoking bans are likely to reduce both exposure to smoke at the workplace and perceived work-related respiratory problems. It should be noticed, however, that these are likely to be short-run effects; still, the relative size of the estimated effects seems to suggest that comprehensive smoking bans do produce immediate and sizeable effects on risk exposure, while more time is needed to see larger effects of lower exposure to tobacco smoke on workers' health.

Are these laws always good?

Our own results and the main findings from the literature surveyed seem to suggest that the implementation of smoking bans produce beneficial effects within the workplace by reducing both smoking prevalence and the exposure to tobacco smoke, with subsequent positive effects on workers' health. Is this the end of the story? Some studies have shown that there might also be some unintended effects: such that the positive effects outlined above may be, at least partially, offset. More specifically, Adams and Cotti (2008) show that the implementation of smoke-free policies in the US has been associated with increasing rates of vehicular deaths, due

to either longer time spent by smokers driving to find a place where smoking is still allowed in public, or due to the fact that such bans are likely to induce smokers to smoke more in their cars, thus generating a "distraction effect" while driving.

In line with these results, Adda and Cornaglia (2010) have recently pointed out that some types of smoking bans can produce relevant displacement effects, with negative health effects particularly for of some (weaker) groups in the population. More specifically, they show that smoking bans on public transport or in schools do indeed decrease non-smokers exposure to smoke, while bans in recreational public places perversely increase their exposure. This is because bans in public places induce smokers to increase smoking in private places, such as cars and homes, with adverse effects on health of other non smokers, particularly young children.[5]

In contrast there are also studies showing "multiplier effects" generated by smoking bans, particularly when they are enforced within workplaces. Looking at the smoking behavior of a representative sample of US couples, Cutler and Glasier (2007) found that both partners are significantly less likely to smoke if one of them is subject to smoking bans at work. Other studies have also argued that smoking bans, especially comprehensive ones, should decrease "social acceptability" of smoking, thus reducing smoking also in private places, particularly at home (Gallus et al. 2007). Descriptive evidence for Italy actually shows that in 2006 (one year after the introduction of the first comprehensive smoking ban) the majority of people, regardless of their smoking status, declared that their guests could smoke only outside of their homes.

While these results all point to some overall effects, it is reasonable to assume that comprehensive smoking bans may produce some unintended effects also within the workplace. For example, the introduction of strict smoking restrictions may increase the level of anxiety and irritability of workers who used to smoke at the workplace, with subsequent negative effects on their productivity and their relationship with other co-workers. In order to investigate such effects, in Table 4 we report the share of workers who declared they were anxious or irritable due to their work in 2000 and 2005 and the difference observed over time. On average, this share has increased much more in the treated countries (+4 percent) in comparison to the controls (+2 percent). The Diff-in Diff estimates highlight the existence of a physical-mental health trade-off.

Table 4
Share of workers reporting work-related anxiety or irritability

EU-15 country	2000	2005	Diff 2005–2000
1 Ireland	0.054	0.115	0.062
2 Italy	0.182	0.188	0.006
3 Sweden	0.182	0.233	0.050
4 Belgium	0.179	0.147	–0.032
5 Spain	0.129	0.121	–0.008
6 UK	0.123	0.085	–0.037
7 Luxembourg	0.117	0.188	0.071
8 France	0.198	0.159	–0.039
9 Finland	0.164	0.152	–0.011
10 Denmark	0.077	0.156	0.079
11 Germany	0.082	0.057	–0.024
12 Portugal	0.074	0.171	0.096
13 Netherlands	0.088	0.119	0.031
14 Austria	0.060	0.079	0.019
15 Greece	0.243	0.362	0.119
"treated" (countries 1–3)	0.140	0.180	0.040
"controls" (countries 4–15)	0.124	0.144	0.020
diff-in-diff estimate			0.020

Source: Own calculations based on Third and Fourth European Working Condition Survey.

In other words, comprehensive smoking bans seem to produce adverse effect on workers' mental health at work: in particular, the probability of reporting anxiety and irritability is found to be two percentage points higher in workplaces subject to smoking bans, which runs counter to the reported improvement in the (lower) share of workers suffering from respiratory problems due to work.

Conclusions

This paper has documented that passive smoking is a major concern for policy makers for both public health reasons and for its potential economic costs. The latter may be very high not only for individuals and their households (in terms of increased healthcare expenditure and earning loss due to tobacco-related illnesses) but also for the employers (in terms of lower productivity due to smoking breaks and sickness absence, fire damage caused accidentally by smoking and maintenance costs related to smoking). Social costs also include reduced income

[5] In line with these results, in September 2009 the Finnish government proposed a ban on smoking in private cars when children are present. However, in May 2010 the Parliamentary Committee for Constitutional Law announced that such a law could not be passed without an amendment to the constitution.

taxes and social security contributions of ill workers who have to exit employment and the long-run productivity loss of workers who prematurely die of tobacco-related diseases. These concerns have urged, in recent years, many European countries to introduce (or extend) smoking bans for all public places and transport, as well as private workplaces, including bars and restaurants. These laws are usually known as "comprehensive smoking bans". Using comparable micro-data for a large number of European countries with information on workers' perceived health (exposure to smoke and the presence of work-related respiratory problems), we show that the introduction of comprehensive smoking bans has a significant effect on workers' perceived health.

According to our evidence, countries that introduced comprehensive smoking bans were successful in reducing, on average, both the probability of exposure to smoke (by 2.5 percent) and the probability to report work-related respiratory problems (by almost one percent). However, such reforms have also been found to produce unintended effects that offset the positive effects on workers' health. More specifically, we found an adverse effect on workers' reported mental health at work, i.e., the introduction of smoking bans seems to increase the probability of work-related irritability and anxiety, which in turn has a negative effect on workers' motivation and productivity.

Our empirical evidence confirms that comprehensive smoking bans are an effective policy to fight exposure to tobacco smoke, but more effort is needed in trying to identify and measure their potential "side" effects in order to implement the proper policy mix. For example, given our evidence on the unintended increase of mental distress, their introduction should be accompanied by psychological counseling and/or treatment to help those workers quit who used to smoke at the workplace.

References

Adams, S. and C. Cotti (2008), "Drunk Driving After the Passage of Smoking Bans in Bars", *Journal of Public Economics* 95(5–6), 1288–305.

Adda, J. and F. Cornaglia (2010), "The Effect of Bans and Taxes on Passive Smoking", *American Economic Journal: Applied Economics* 2(1), 1–32.

Anger, S., M. Kvasnicka and T. Siedler (2010), "One Last Puff? Public Smoking Bans and Smoking Behavior", *IZA Discussion Paper* no. 4873.

Carpenter, C. (2009), "The Effects of Local Workplace Smoking Laws on Smoking Restrictions and Exposure to Smoke at Work", *The Journal of Human Resources* 44(4), 1023–46.

Cutler, D. and E. Glaeser (2007), "Social Interactions in Smoking", *NBER Working Paper* no. 13477.

European Commission (2007), *Green Paper. Towards a Europe Free from Tobacco Smoke: Policy Options at the EU Level*, COM(2007) 27 final.

Evans, W., M. Farrelly and E. Montgomery (1999), "Do Workplace Smoking Bans Reduce Smoking?", *American Economic Review* 89(4), 728–47.

Fichtenberg, C. and S. Glantz (2004), "Effect of Smoke-Free Workplaces on Smoking Behavior: Systematic Review", *British Medical Journal* 325, 188–94.

Gallus, S., P. Zuccaro, P. Colombo, G. Apolone, R. Pacifici, S. Garattini, C. Bosetti and C. La Vecchia (2007), "Smoking in Italy 2005–06: Effects of a Comprehensive National Tobacco Regulation", *Preventive Medicine* 45(2–3), 198–201.

Jamrozik, K. (2006), "An Estimate of Deaths Attributable to Passive Smoking in Europe", in Smokefree Partnership, ed., *Lifting the Smokescreen: Ten Reasons for a Smoke-Free Europe*, available on line at www.ersnet.org, 17–41.

Joossens, L. and M. Raw (2006), "The Tobacco Control Scale: a New Scale to Measure Country Activity", *Tobacco Control* 15, 247–53.

Levy, D. and K. Friend (2003), "The Effect of Clean Indoor Air Laws: What Do We Know and what Do We Need to Know?", *Health Education Research* 18(5), 592–609.

Moskowitz, J., Z. Lin and E. Hudes (2000), "The Impact of Workplace Smoking Ordinances in California on Smoking Cessation", *American Journal of Public Health* 90(5), 75–61.

Stephens, T., L. Pederson, J. Koval and C. Kim (1997), "The Relationship of Cigarette Prices and No-Smoking Bylaws to the Prevalence of Smoking in Canada", *American Journal of Public Health* 87(9), 1519–21.

World Bank (2003), *Tobacco Control at a Glance*, Washington DC.

World Health Organization (2003), *WHO Framework Convention on Tobacco Control*, Geneva, Switzerland.