Cigarette advertising in magazines: the tobacco industry response to the Master Settlement Agreement and to public pressure

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Objective: The Master Settlement Agreement (MSA) of November 1998 prohibited participating tobacco companies from directly or indirectly targeting youth in marketing. Widely publicised information in May 2000 showed increased cigarette advertising in magazines with substantial youth readership and companies were pressed to change their practices. The responses of the tobacco industry to the MSA and to the public pressure are examined.

Design: Expenditures on cigarette advertisements in national magazines in the USA are compared for three periods: January to November 1998, December 1998 to June 2000, and July 2000 to November 2001. Magazines in which at least 15% of readers are youth under age 18 are focused upon. Regression models test for the significance of period differences after controlling for seasonal and long term patterns.

Data sources: Commercially maintained data on advertising in US magazines and on magazine readership by age.

Key measures: Monthly cigarette ad expenditures in magazines with 15%+ youth readership, and monthly proportion of ad expenditures in 15%+ youth magazines.

Results: Cigarette advertising expenditures in magazines with 15%+ youth readership increased dramatically after MSA implementation and fell dramatically after public pressure. The percentage allocation of expenditures to 15%+ magazines fell significantly in both periods. Results differ somewhat by company.

Conclusions: The tobacco industry response to the MSA was at best modest, reducing proportional allocations of advertising to youth magazines but increasing the absolute amount of such advertising. The value of public pressure was seen in substantial reductions in both absolute and proportional spending on youth magazines, although not by all companies.

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The landmark Master Settlement Agreement (MSA) between tobacco companies and states' attorneys general prohibits the companies from targeting youth in tobacco advertising. This study examines cigarette magazine advertising expenditures in three periods: January 1998 to the adoption of the MSA in November 1998; December 1998 to June 2000, at which point public attention was drawn to post-MSA increases in magazine advertising to youth; and July 2000 through November 2001.

Research has shown that tobacco marketing differentially targets youth,[1–3] particularly those 12–17 years of age.[4 5] Tobacco manufacturers insist publicly that their advertising and promotional strategies aim to affect current smokers' brand preference: " . . .cigarette advertising is not designed to induce people to start smoking, kids or anybody else. Its objective is to promote brand identification and brand loyalty among people who already smoke."[6] Internal industry documents suggest otherwise, however. "The teenage years are [also] important because those are the years during which most smokers begin to smoke, the years in which initial brand selections are made, and the period of the life-cycle in which conformity to peer-group norms is the greatest."[7] Several studies have documented the relationship between tobacco marketing practices and the initiation of smoking among youth in the United States.[1 4 8–10] Youths' awareness of cigarette advertising and ownership of promotional items are associated with smoking and various measures of susceptibility to smoking.[11–13] A study of California youth found that exposure to tobacco promotional and advertising activities precedes youth attitudes indicating susceptibility to smoking, increasing the likelihood of future smoking among those who have not done so previously.[14] Tobacco marketing specifically targeted toward youth is estimated to have resulted in 4.7 million new established smokers between 1988 and 1998.[15]

Total tobacco industry expenditures for cigarette advertising and promotion were growing in the years leading up to the MSA. According to the Federal Trade Commission's annual report to Congress, cigarette advertising and promotional expenditures were $6.7 billion in 1998, up 33% from their level two years earlier.[16] Magazine advertising expenditures were $281 million or 4% of the total, a proportion that had been constant or declining since 1994.

On 23 November 1998, the states' attorneys general settled their lawsuits against participating tobacco manufacturers (including Brown & Williamson, Lorillard, Philip Morris, and RJ Reynolds) for smoking related health costs incurred by their state Medicaid programme with the multi-state Master Settlement Agreement (MSA). The MSA broadly forbids youth targeting in the following language:

> "No Participating Manufacturer may take any action, directly or indirectly, to target Youth within any Settling State in the advertising, promotion or marketing of Tobacco Products, or take any action the primary purpose of which is to initiate, maintain or increase the incidence of Youth smoking within any Settling State."

The MSA also prohibits some specific advertising practices, including billboard and other specified types of outdoor advertising. It contains no specific provision regarding magazine advertising.[17]

Eighteen months after the MSA took effect, the Massachusetts Department of Public Health (MDPH) released analysis showing that cigarette advertising in magazines with substantial youth readership had increased sharply.[18] The information

Table 1 Monthly expenditures for cigarette advertising in 19 magazines with 15%+ youth readership

	Brown & Williamson	Lorillard	Philip Morris	RJ Reynolds	Total
Average monthly estimated expenditures, in thousands					
January 1998–November 1998	$1334	$399	$5000	$4638	$11371
December 1998–June 2000	$1921	$422	$6267	$4953	$13563
July 2000–November 2001	$645	$368	$862	$2191	$4066
Estimated expenditures in magazines with 15%+ youth readership as a percentage of total estimated magazine advertising expenditures					
January 1998–November 1998	52%	44%	32%	47%	39%
December 1998–June 2000	32%	35%	31%	42%	34%
July 2000–November 2001	26%	19%	8%	40%	20%

was heavily publicised by the Campaign for Tobacco-Free Kids, a national advocacy organisation, and received extensive news media coverage.[19 20] MDPH publicly announced that it had requested each of the four major manufacturers to eliminate cigarette ads in "magazines popular with youth (those with youth readership of greater than 15% or two million)".[21]

Philip Morris announced three weeks later that the company would not advertise in magazines with more than 15% readership or two million readers under age 18 and would suspend advertising in 40–50 magazines.[22 23] The company detailed its position in a letter to MDPH.[24] RJ Reynolds declined to adopt a similar policy while stating its commitment to avoid youth targeting.[25 26] Brown & Williamson stated that it already had a policy of not advertising in magazines with more than 15% youth readership but provided little detail.[27]

METHODS

Design

We compared cigarette advertising expenditures in three periods: January to November 1998 (pre-MSA), December 1998 to June 2000 (MSA only), and July 2000 to November 2000 (MSA with pressure). The analysis is limited to the four major tobacco companies that participated in the settlement, who thereby committed to avoid directly or indirectly targeting youth.

We first examine *absolute* advertising expenditures in magazines with at least 15% youth readership, the threshold in a proposed 1995 Food and Drug Administration regulation[28] and used in the May 2000 analysis. We also examine the *proportion* of total magazine advertising that is allocated to magazines with 15%+ youth readership.

Data sources

Estimated quarterly cigarette expenditures for magazine advertising were obtained from Competitive Media Reporting (CMR), a commercial vendor of data on product advertising that routinely monitors all major magazines published in the USA.[29] The data cover all cigarette brands with recorded magazine advertising in 1998–2001. Cigarette advertising expenditures by the four studied companies were observed in 161 different magazines over the period (two were excluded because of incomplete data).

CMR estimates magazine expenditures by applying magazine specific price schedules to observed published advertisements. Actual expenditures differ from estimated expenditures to the extent that advertisers negotiate prices other than the listed price. Estimated expenditures, which are not influenced by major advertisers' ability to negotiate special deals, are useful for comparing the volume of advertising by different companies. Estimated expenditures are adjusted using the consumer price index (CPI-U, adjusted to January 2001). We excluded expenditures for public service, corporate image, and sponsored event advertising, which may not directly promote smoking.

Data on the extent of youth readership were obtained from Simmons Market Research Bureau, Inc. Youth readership and adult readership are estimated based on large, nationally representative consumer surveys conducted by Simmons in 1998. The data identify 29 magazines with youth readership of 5% or greater, 19 of which have 15% or more youth readership.[30 31] The survey does not cover all magazines, so the extent of youth readership is not known for magazines beyond the 29. The 29 magazines accounted for 53% of all estimated cigarette advertising expenditures in 1998–2001.

Analysis

Because differences between time periods might simply reflect seasonal patterns or longer term secular trends, we test for the statistical significance of the differences in time periods using OLS regression models. The unit of observation is the magazine month. Models are estimated for each of the four companies separately and for the four combined. The models include fixed effects for companies, magazines, and calendar months. We corrected for autocorrelation of the residuals by first estimating each model using OLS, calculating the autocorrelation parameter ρ from the OLS residuals (assuming a common value of ρ across all magazines), and then re-estimating the model with all variables transformed to remove the autocorrelation.

The first model, considering absolute expenditures, is limited to magazines with 15%+ youth readership. Key predictors are variables representing the post-MSA (December 1998 to November 2001) and post-pressure (July 2000 to November 2001) periods. Key covariates are calendar month, a linear time trend variable (coded as month 1-47), and the magazine's list price for a standard four colour bleed advertisement, which may be seen as a proxy for circulation. The price for the standard ad was not observed for every month for every magazine; values were imputed to missing months based on ratios between ad categories (for example, black and white to four colour) and means for time periods.

In the second analysis, which includes all magazines, the dependent variable is the proportion of estimated advertising expenditures for company I in month j allocated to magazine k. In addition to the covariates above, the model includes a term for whether the magazine is known to have 15%+ youth readership. Key predictors are variables interacting youth readership with the time period variables described above.

RESULTS

Expenditures

After the MSA took effect, the four major tobacco companies' combined advertising expenditures increased in the 19 magazines with 15%+ youth readership. Average monthly spending

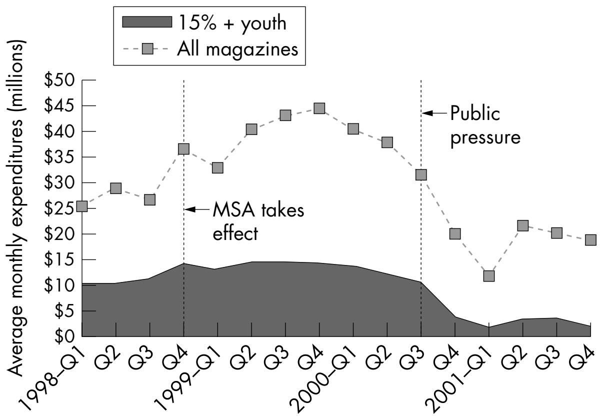

Figure 1 Estimated monthly expenditures for cigarette advertising in magazines, 1998–2000.

rose from \$11.4 million in January to November 1998 to \$13.6 million in December 1998 to June 2000 (table 1). Following the public pressure in May-June 2000, average monthly expenditures fell dramatically, to \$4.1 million in July 2000 to November 2002 (fig 1).

All four of the major tobacco companies participating in the MSA increased their expenditures after the agreement took effect. The extent of the increase varied from less than 10% for RJ Reynolds and Lorillard to more than 25% for Brown & Williamson and Philip Morris. The increases are significant in multivariate analysis for Brown & Williamson ($p = 0.02$), Lorillard ($p = 0.03$), and RJ Reynolds ($p = 0.01$) (table 2). Positive but non-significant coefficients are estimated for Philip Morris ($p = 0.95$) and for the four companies combined ($p = 0.21$).

Proportion of spending in magazines with 15%+ youth readership

The proportion of advertising expenditures directed to magazines with 15%+ youth readership declined somewhat after the MSA took effect, from 39% to 34% (table 1). It fell much farther, to 20%, after public pressure was applied. Both effects are significant after controlling for seasonal and long term trends ($p < 0.001$) (table 3).

Post-MSA reductions were observed for Brown & Williamson (52% to 32%), Lorillard (44% to 35%), and RJ Reynolds (47% to 42%). All three changes were significant in the multivariate models ($p < 0.01$). Philip Morris' percentage was lowest before the MSA but fell barely perceptibly afterwards, from 32% to 31% (multivariate $p = 0.12$).

Following the public pressure in May 2000, Philip Morris expenditures in magazines with 15%+ youth readership fell precipitously, to 8% for the period as a whole and near zero in 2001 (multivariate $p < 0.001$). Significant reductions also occurred for Lorillard to 19% (multivariate $p < 0.001$) and for Brown & Williamson to 26% (multivariate $p = 0.04$). RJ Reynolds continued to allocate 40% of its budget to the 19 magazines, a non-significant change from the 42% in the prior period (multivariate $p = 0.58$).

DISCUSSION

Total cigarette advertising expenditures in magazines with 15%+ youth readership rose after the MSA took effect. This implies an increase in youth exposure to such advertising, an implication confirmed in other research.[32] But even as expenditures on these magazines increased, the share of total magazine

Table 2 Regression estimates of expenditure changes in 15%+ youth magazines in post-MSA and post-pressure periods

	Brown & Williamson	Lorillard	Philip Morris	RJ Reynolds	Total
Post MSA					
Coefficient	50.34	16.06	3.28	112.03	29.95
SE	22.22	7.60	52.54	45.87	23.82
Post pressure					
Coefficient	–5.47	12.99	–265.81	–19.00	– 61.45
SE	22.37	7.84	53.99	47.95	24.04
R^2	0.21	0.25	0.34	0.49	0.18
Observations	893	893	893	893	3,572

Dependent variable = transformed monthly expenditures (in thousands) on cigarette advertising in magazine *k*, including only magazines with 15% youth readership.
SE, standard error.

Table 3 Regression estimates of changes in expenditure allocation in post-MSA and post-pressure periods

	Brown & Williamson	Lorillard	Philip Morris	RJ Reynolds	Total
Post-MSA* 15%+ youth readership					
Coefficient	–1.05	–0.71	–0.19	–0.40	–0.57
SE	0.20	0.24	0.12	0.15	0.11
Post-pressure* 15%+ youth readership					
Coefficient	–0.38	–0.98	–1.24	0.07	–0.61
SE	0.18	0.21	0.11	0.13	0.10
R^2	0.25	0.32	0.37	0.51	0.22
Observations	7473	7473	7473	7473	29892

Dependent variable = transformed proportion of monthly magazine advertising expenditures (in percentage points) allocated to magazine *k*, including all magazines.
SE, standard error.

advertising dollars allocated to the 15%+ magazines declined for three of the four companies and for the four companies combined. This suggests that the three companies were responding—but only modestly—to their MSA commitment not to target youth.

Two factors may help account for this mixed early response to the MSA. Firstly, the MSA prohibition of most outdoor and transit advertising may have freed up advertising dollars to be spent elsewhere. Federal Trade Commission figures show that total tobacco industry expenditures for outdoor and transit advertising fell by $276 million from 1998 to 1999, which may have funded the $119 million increase for magazines and newspapers.[16] Secondly, while the MSA broadly prohibits direct or indirect targeting of youth, its language is not specific with respect to magazine advertising. The companies may have felt the increase in 15%+ magazines was defensible on the grounds that they had slightly reduced those magazines' role in their advertising and that most readers of even those magazines are not under age 18. Whatever the reasoning, the industry behaviour had a precedent in the prohibition of television advertising in 1971 and subsequent dramatic increase in magazine and newspaper advertising expenditures.[16]

The actions of Massachusetts, the Campaign for Tobacco-Free Kids, and the popular press in May-June 2000 brought further changes in expenditure patterns. For the four companies combined, significant reductions occurred in both absolute and proportional expenditures in magazines with 15%+ youth readership. Philip Morris drove much of the overall result, cutting its advertising expenditures in these magazines to near zero within a few months of announcing its intention to do so. Absolute expenditures fell for the other three companies as well, and both Brown & Williamson and Lorillard significantly reduced proportional expenditures on these magazines. RJ Reynolds ignored the public pressure, however, making no significant change in its proportional expenditures.

Factors beyond the public pressure probably contributed to these patterns. Magazine advertising expenditures in general returned to levels more like those seen before the post-MSA expansion. Thus youth exposure to magazine advertising declined, just as it had previously increased, partly because of a general change in cigarette advertising levels in magazines. Nonetheless, the public pressure had an obvious effect. Philip Morris announced an explicit plan to remove advertising from magazines with 15%+ youth readership, and by 2001 it had virtually no advertising recorded in the 19 magazines we tracked. The other three companies did not announce explicit plans. But the data suggest that Brown & Williamson and Lorillard followed the Phillip Morris lead: their combined 2001 expenditures in the 19 magazines were 18% of their total magazine advertising expenditures in 2001, compared to 32% in December 1998 to June 2000. The companies might not admit to being influenced by pressure, but the data suggest that public pressure, applied on the foundation laid by the MSA, had a substantial effect.

The findings illustrate the weakness of a broad prohibition of youth targeting without specific reference to particular forms of advertising. They also illustrate the value of reinforcing the principles of a tobacco industry requirement through systematic and very public monitoring of industry behaviour.

Several limitations of the analysis should be noted. We focus on a single indicator of youth targeting, but the industry may find ways to increase youth targeting while improving its standing on commonly used targeting measures, as suggested in other research.[33] The four year time frame is relatively short, making it difficult to isolate effects of the MSA and public pressure from longer term trends in magazine advertising. Other magazines beyond the 19 identified may have 15%+ youth readership. Expenditures are estimated based on magazine price schedules, which may be higher than the actual price paid. Companies' choices of magazines for advertising are influenced by additional factors not included in our models. Overcoming these limitations would be desirable but would seem unlikely to yield substantially different conclusions, given the strong patterns in the data.

What this paper adds

Studies have shown that, although tobacco companies committed in the Master Settlement Agreement (MSA) to avoid direct or indirect targeting of youth, cigarette advertising increased in magazines with high youth readership during the year after the MSA (1999) and then declined during 2000. Analysing monthly cigarette advertising expenditures through 2001, this paper suggests that the industry responded modestly to the MSA, and responded further to public pressure brought later by the Massachusetts Department of Public health, the Campaign for Tobacco-Free Kids, and the popular press. The proportion of cigarette advertising expenditures in magazines with at least 15% youth readership declined somewhat after the MSA was implemented, and somewhat more after public pressure was applied. The study illustrates the need for careful wording of provisions intended to govern tobacco industry actions and close public scrutiny of subsequent industry behaviour.

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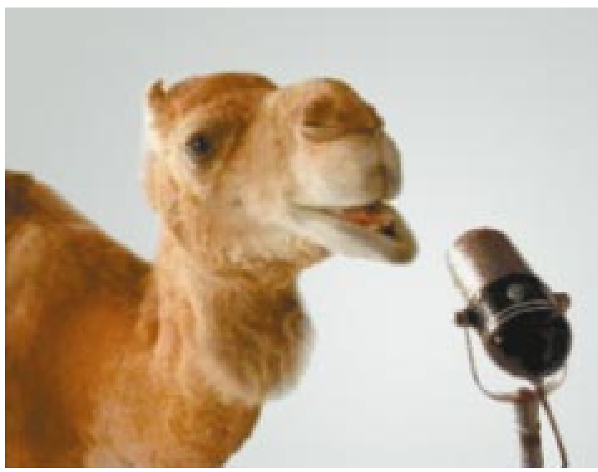

A rebuttal TV ad features a talking camel who is disgusted that his likeness is used to sell cigarettes.