Finessing the Political System: The Cigarette Advertising Ban*

MARK L. MITCHELL
J. HAROLD MULHERIN
Clemson University
Clemson, South Carolina

> A prohibition of cigarette advertising would have serious implications for many industries as well as the mass media. We urge the committee to reject the views of extremists in this area.[1]

> "Hang me des ez high as you please, Brer Fox" sez Brer Rabbit, sezee, "but fer de Lord's sake don't fling me in dat brier-patch," sezee [8, 18].

I. Introduction

Success in various competitive venues—athletics, card games, politics, war—often comes not from one's direct actions, but from the induced behavior of one's opponent. In bridge, for example, a finesse cannot work unless the opponent falls for the ruse. But when successful, the finesse adroitly turns the opponent into an unwitting partner.

In this vein, consider recent proposals in Congress concerning cigarette advertising. Bills such as the "Health Protection Act of 1986" seek to complete the ban on the advertising of tobacco that began with the removal of such ads from TV and radio in 1970. The proponents of the legislation apparently believe that the total banishment of cigarette advertising will lessen the demand for tobacco, thereby improving the health of the citizenry.[2]

Using developments from modern regulation theory, we posit instead that the current proposals to broaden the advertising restrictions are prime evidence of finesse within the regulatory system. Constraints on advertising can be expected to limit brand entry in the cigarette industry.[3] The ultimate result of the cards currently being played by the anti-smoking activists, therefore, will be higher profits for their opponents, the tobacco companies.

To test our position, we analyze the stock returns of the major tobacco firms. Our finding of positive, abnormal returns around the period of the 1970 TV and radio advertising ban is consistent with the view that the ban limited brand entry and decreased competition in the industry.

855

Furthermore, all evidence indicates that the systematic risk of the major tobacco firms declined during the institution of the ban and remained at the lower level thereafter, providing additional empirical support for modern regulatory theory. These results forebode the effects of an expanded restriction of cigarette ads. The findings may also be relevant to proposed advertising restrictions of other products such as alcoholic beverages.

II. Cigarette Advertising/Demand Literature

The cigarette-health controversy and, in particular, the 1970 advertising ban have been the focus of substantial prior research in the United States [1; 6; 7; 10; 15]. In contrast to the assumptions of the anti-smoking coalition, this literature has found that advertising does not increase overall cigarette demand. Rather, advertising spurs inter-brand competition and is integral in introducing new brands.

Further, the studies have concluded that the 1970 advertising ban in the U.S. did not reduce cigarette consumption.[4] Indeed, Schneider, Klein and Murphy found that the ban actually increased consumption due to the reduced number of anti-smoking messages stemming from the inoperation of the Fairness Doctrine subsequent to the advertising ban [15].[5] These authors also found that the ban slowed the introduction of new brands, namely those low in tar [15].[6]

III. Modeling the Cigarette Advertising Ban

The Theory of Regulation

A regulation supported by industry opponents that increases consumption and reduces brand entry implies wealth gains for existing tobacco firms, thus illustrating the finesse involved in a world of bootleggers and Baptists [22], a variant of the universe envisioned by the modern theory of regulation [13; 18]. The theories of these authors predict that the interests of diverse components of the political spectrum will coalesce (perhaps implicitly and unintentionally) in the promotion and passage of legislation. Yet, only a select sub-group of the coalition may reap the rents resulting from the regulation.

As to the cigarette advertising ban, the efforts of the anti-smoking activists to restrict advertising can be expected to have actually impeded brand competition, ironically increasing the wealth of the firms in the tobacco industry.[7] Moreover, the fact that cigarette demand did not fall after the ban indicates that the anti-smoking lobby's efforts aided the tobacco industry without any compensating gains.

4. These results are robust to other countries that have imposed bans. For a review, see Johnson [9].

5. The Fairness Doctrine provides for equal broadcasting treatment of both sides of a controversial issue. On June 5, 1967, the Federal Communications Commission (FCC) ruled that, due to the controversial nature of the smoking/health issue, radio and TV stations that ran cigarette ads were obligated to provide free time to the anti-smoking position. On December 15, 1970, the FCC ruled that once the advertising ban was in force, the Fairness Doctrine would no longer apply to cigarette smoking and anti-smoking messages would no longer be mandatory.

6. Calfee reports a similar reduction in the introduction of brands after the negotiation by the Federal Trade Commission of an industry-wide ban on tar and nicotine claims in 1960 [3].

7. See Maloney and McCormick for a similar regulatory event. They analyzed the entry-restricting environmental standards of the 1970 cotton dust rulings and found that the rulings increased the wealth of the then existing textile firms [11].

Peltzman has also posited that regulation buffers firms against demand and cost changes, thereby reducing stock price variability [13]. In conjunction with Peltzman's buffering hypothesis, the advertising restrictions would be expected to reduce the risk of the tobacco firms.

We aim to test these propositions of the theory of regulation through an analysis of the stock returns of a portfolio of the major cigarette firms.

Regulatory Background

The major events regarding the cigarette advertising ban evolved over a two and a half year time period.[8] The first major event occurred in July 1968 when both the Federal Trade Commission (FTC) and the Department of Health, Education and Welfare (HEW) called for a ban of cigarette ads on radio and TV. This was followed in February 1969 by a similar proposal by the Federal Communications Commission (FCC).

Congress responded in the middle of 1969. The House was first to hold hearings. As expected, given the strength of southern representatives, the House bill passed in June 1969 was relatively mild and made no mention of a ban.

The Senate had a much stronger anti-smoking sentiment and was expected to propose a ban. In October 1969, the Senate Commerce Committee made such a proposal; it was approved by the full Senate in December 1969.

The bill was approved in conference in March 1970 and was signed into law on April 1, 1970. The effective date of the ban was January 2, 1971. In an equally important decision in December 1970, the FCC ruled that the Fairness Doctrine would cease to apply to cigarette advertising once the ban was effective.

Development of Tests

We have chosen the period from the July 1968 FTC/HEW proposal to the December 1970 FCC ruling on the Fairness Doctrine as the event window. While the noise created by using such a lengthy time frame may bias the estimates of the effects of the regulation toward zero, the entire period is analyzed because we have no prior beliefs about which actions contributed the most information about the likelihood of implementation and the actual nature of the ban. We expect the firms in the tobacco industry to have attained positive abnormal returns and to have experienced a decrease in systematic risk over this period. After testing for abnormal returns over the full period, we perform additional tests to discern exactly when the abnormal returns were reaped.

Over the time period of study, indeed throughout the better part of this century, six firms have dominated the cigarette industry: R.J. Reynolds, American Tobacco, Philip Morris, Brown & Williamson, Liggett & Myers, and Lorillard. In the analysis below, we concentrate on a four-firm portfolio comprised of Reynolds, American Tobacco, Philip Morris, and Liggett & Myers (roughly 75 percent to 80 percent of the industry over the period of study).

The other two major firms have not been included in the analysis due to data problems. Lorillard has been excluded because it was bought by Loews in October 1968, right at the beginning of the event period. Brown & Williamson has been excluded because it is owned by British American Tobacco Company, a British company. While British American Tobacco has

---

8. In our analysis of the major events, we examined over 200 newspaper, magazine and tobacco trade journal articles pertaining to the cigarette advertising ban. This examination indicated that the regulatory proposals and actions related to the cigarette advertising ban were the most significant factors impinging upon the tobacco industry in the late 1960s and the early 1970s.

some bearer and registered shares traded on the American Stock Exchange, the shares change hands infrequently.

IV. Financial Market Event Analysis

Financial market event analysis is a technique frequently used to test for the effects of regulation on an industry [16]. The analysis entails the identification of an event that causes investors to change their expectations concerning the future cash flows associated with a stock. The analysis is based on the theory of efficient markets, which assumes that the price of any stock incorporates at any instant all currently available information and adjusts to new information as soon as it is available to investors.

Modified Market Model

One procedure is to estimate the following modified market model:

$$r_{pt} = \alpha_p + \beta_p r_{mt} + \gamma_p D_t + \epsilon_{pt}$$

where

r_{pt} is the return of portfolio p in month t

r_{mt} is the overall market return in month t

D_t takes a value of 1 during the event period (July 1968 to December 1970) and a value of 0 otherwise.

$\epsilon_{pt} \sim N(0, \sigma^2)$

We ran this model over the time period of January 1956 to December 1970 using an equally weighted, four firm portfolio. The central hypothesis stemming from modern regulatory theory is that the dummy coefficient, γ, will be positive and significant. The results are shown in column (1) of Table I. Using a one-tailed test, the dummy coefficient is significant at the 6 percent level. The results support the proposition that the advertising ban benefitted the cigarette industry.[9]

We also regressed the modified market model using a four firm portfolio in which the returns of the individual firms were weighted by market share.[10] As shown in column (3) of Table I, the results are not dramatically different than those of the equally weighted portfolio.[11]

Regulatory Risk Buffering

To test Peltzman's buffering hypothesis, we regressed the following extension of the modified market model:

$$r_{pt} = \alpha_p + \beta_p r_{mt} + \gamma_p D_t + \delta_p (D_t r_{mt}) + \epsilon_{pt}.$$

---

9. Since the time period of the evolution of the advertising ban entailed no other major events that might have produced such gains, the selection of the relatively long event window (30 months) biases against finding a statistically significant dummy coefficient, as the noise included in the lengthy period increases the variance of the coefficient.

10. The market share data were obtained from [2].

11. Comparable results, available from the authors upon request, were also attained by substituting the natural log of $(1 + r_{pt})$ and the natural log of $(1 + r_{mt})$ into the market model. The natural logs give the rate of return with continuous compounding. See Cantrell, Maloney and Mitchell for a discussion of the relative merits of estimating the market model in a linear versus a logarithmic form [4].

Table I. Estimates of Effects of Advertising Ban on the Tobacco Portfolio $[r_{pt} = \alpha_p + \beta_p r_{mt} + \gamma_p D_t + \delta_p (D_t r_{mt})]$

| | Coefficient/(t-statistic) | | | |
| | Equally Weighted | | Weighted by Market Share | |
Variable	(1)	(2)	(3)	(4)
Intercept	.0045	.0030	.0044	.0027
	(1.33)	(.89)	(1.18)	(.75)
Market Return	.56***	.69***	.59***	.72***
	(8.24)	(8.54)	(7.87)	(8.12)
Event Dummy	.0129*	.0137**	.0130*	.0140*
	(1.60)	(1.73)	(1.45)	(1.59)
Slope Shift	—	−.39***	—	−.42***
		(−2.70)		(−2.67)
F	34.11***	25.99***	31.12***	23.84***
R^2	.278	.307	.260	.289
DW	1.928	1.926	1.936	1.922
N	180	180	180	180

Source—Center for Research in Securities Prices, monthly returns tape 1956–1970 (University of Chicago).
***Significant at the 1 percent level for a one-tailed test.
**Significant at the 5 percent level for a one-tailed test.
*Significant at the 10 percent level for a one-tailed test.

The coefficient δ tests whether or not β, the systematic risk of the tobacco industry, shifts during the event period. The buffering hypothesis posits that the increasing regulation of the cigarette industry should lessen the systematic risk of the firms in the industry; hence the slope shift dummy coefficient, δ, should have a negative sign. This proposition was tested with the equally weighted and the market-share weighted four firm portfolio. The results are shown in columns (2) and (4) of Table I. As predicted by Peltzman, the negative and significant value for δ implies that the systematic risk of the firms in the cigarette industry did fall with the increasing regulation.[12] Including the slope shift dummy also increases the significance of the event dummy coefficient.

To further test Peltzman's buffering hypothesis, we analyzed the beta coefficient of the equally weighted portfolio prior to (January 1956–June 1968) and after (January 1971–June 1983) the regulatory event window. The pre-event beta was .69 (s.e. = .075, n = 150); the post-event beta was .54 (s.e. = .052, n = 150). Using a means test, the difference is significant at the 1 percent level, lending further support to Peltzman's hypothesis.[13] Note that the movement of beta away from 1 is the opposite that one would expect from the increasing diversification that occurred in the cigarette industry in the post-event period.[14]

12. These results concur with the findings of Peltzman [14] showing a reduction in the risk of a portfolio of drug firms around the time of the 1962 Amendments to the Food, Drug and Cosmetic Act and of Chen and Merville [5] showing an increase in the systematic risk of AT&T during the breakup of that entity.

13. The difference was also significant at the 1 percent level using the beta coefficients from the market share weighted portfolio. To provide further insight regarding the effect of regulation on systematic risk, we computed betas for the 270 60-month sub-periods entailed in the January 1956 to June 1983 time frame. The moving average betas indicate that the decrease in beta did occur around the June 1968 to December 1970 regulatory event window.

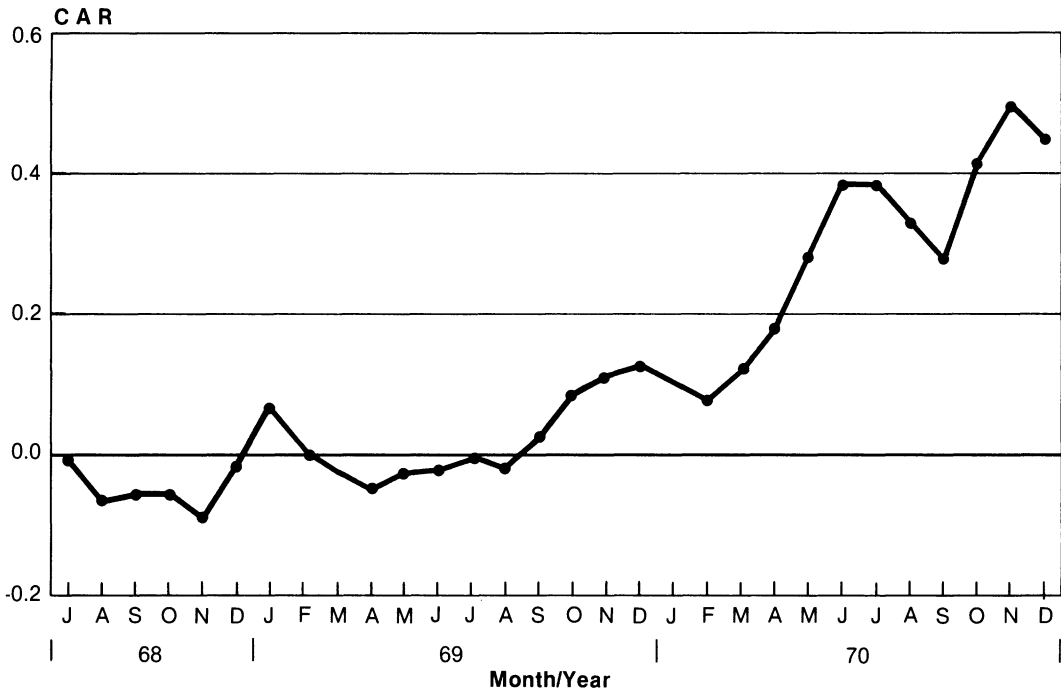14. Overton provides a discussion of this diversification [12].

Figure 1. CAR for the Cigarette Industry

Cumulative Abnormal Returns

While the long event window (30 months) is practical for this particular study due to the longevity of the event, it does not facilitate the identification of exactly when the abnormal wealth gains accrued to the shareholders of the four major tobacco firms in our analysis. To get a more precise idea of when such gains were reaped, we estimated the market model

$$r_{pt} = \alpha_p + \beta_p r_{mt} + \epsilon_{pt}$$

over the period from January 1956 to June 1968 (150 months).[15] The estimates of the coefficients α and β were then used to forecast the monthly abnormal returns

$$AR_{pt} = r_{pt} - \hat{\alpha}_p - \hat{\beta} r_{mt}$$

over the period from July 1968 through December 1970. These monthly abnormal returns were then cumulated over the same period

$$CAR_p = \sum AR_{pt}.$$

The CAR_p is plotted in Figure 1. As can be seen, the cumulative abnormal returns are never significantly negative over the event window, and turn positive after September 1969.[16] This

---

15. This resulted in the following estimate values: $\hat{\alpha} = .00301$ ($t = 0.96$) and $\hat{\beta} = .685$ ($t = 9.08$), $F = 82.37$, $R^2 = .358$, DW = 2.03.

16. For the entire period, the cumulative abnormal return is 44.8 percent, with a t-statistic of 2.03. The CAR approach to calculating abnormal returns is approximate to the modified market model technique; the primary difference

indicates that the early proposals by the cabinet agencies provided no major information about the likelihood of a ban, but instead that the market formed an expectation of a ban only after the Senate began to act.[17] Moreover, the persistence of positive cumulative abnormal returns through 1970 suggests that FCC decision at the end of that year regarding the inapplicability of the Fairness Doctrine did indeed benefit the cigarette companies.

V. Concluding Comments

The findings of positive abnormal returns for the cigarette industry during the period over which the radio and TV ad ban evolved supports the predictions derived from the theory of regulation and confirms conjectures made by the authors of studies on cigarette demand. The ad ban increased the wealth of the major tobacco firms apparently by lessening brand entry and by rendering the Fairness Doctrine inoperable. The finding of a decrease in systematic risk after the increase in regulation supports Peltzman's buffering hypothesis.

These results are directly relevant to the current proposals to institute a complete ban on cigarette ads. Passage of such legislation would be expected to create additional benefits for the established cigarette firms. As noted by Bishop and Yoo, real total cigarette ad expenditures initially fell after the 1970 ban, but later rose above 1970 levels [1]. Congressional testimony indicates that the increase stemmed from the advertising of new brands [20]. Removing the ability to promote new brands would certainly add to the entry limitations in the industry, thereby aiding the current tobacco firms.

---

is that the CAR approach allows one to judge the movement of the abnormal returns over the event window. The data backing Figure 1 are available from the authors upon request.

17. The market response to the Senate rather than the administrative agencies reflects the 1964–65 regulatory enactment of a health warning on cigarette packages in which the Senate overruled previously announced rules of the FTC.

References

1. Bishop, John A. and Jang H. Yoo, " 'Health Scare,' Excise Taxes and Advertising Ban in the Cigarette Demand and Supply." *Southern Economic Journal*, October 1985, 402–11.

2. *Business Week*. December editions, 1956–70.

3. Calfee, John E., "The Ghost of Cigarette Advertising Past." *Regulation*, November/December 1986, 35–45.

4. Cantrell, Steve, Michael T. Maloney, and Mark Mitchell. "On Estimating the Variance of Abnormal Stock Market Performance." Mimeo. Clemson University, January 1987.

5. Chen, Andrew H. and Larry J. Merville, "An Analysis of Divestiture Effects Resulting from Deregulation." *Journal of Finance*, December 1986, 997–1004.

6. Grabowski, Henry G., "The Effects of Advertising On the Interindustry Distribution of Demand." *Explorations in Economic Research*, 1976, 21–75.

7. Hamilton, James L., "The Demand for Cigarettes: Advertising, the Health Scare, and the Cigarette Advertising Ban." *Review of Economics and Statistics*, November 1972, 401–11.

8. Harris, Joel Chandler. *Uncle Remus: His Songs and His Sayings*. New York: Appleton-Century Company, Inc., 1921.

9. Johnson, Lester W. "Advertising Expenditure and Aggregate Demand for Cigarettes in Australia." Mimeo. Macquarie University, June 1985.

10. Lewit, Eugene M., Douglas Coate, and Michael Grossman, "The Effects of Government Regulation on Teenage Smoking." *Journal of Law and Economics*, December 1981, 545–69.

11. Maloney, Michael T. and Robert E. McCormick, "A Positive Theory of Environmental Quality Regulation." *Journal of Law and Economics*, April 1982, 99–123.

12. Overton, James. "Diversification and International Expansion: The Future of the American Tobacco Manufacturing Industry with Corporate Profiles of the 'Big Six'," in *The Tobacco Industry in Transition*, edited by William R. Finger. Lexington, Mass.: Lexington Books, 1981, pp. 159–95.

13. Peltzman, Sam, "Toward a More General Theory of Regulation." *Journal of Law and Economics*, August 1976, 211–41.

14. ———. "The Benefits and Costs of New Drug Regulation," in *Regulating New Drugs*, edited by Richard L. Landau. Chicago: The University of Chicago Center for Policy Studies, 1973, pp. 113–211.

15. Schneider, Lynne, Benjamin Klein, and Kevin Murphy, "Government Regulation of Cigarette Health Information." *Journal of Law and Economics*, December 1981, 572–612.

16. Schwert, G. William, "Using Financial Data to Measure the Effects of Regulation." *Journal of Law and Economics*, April 1981, 121–58.

17. "Smoking Ads Don't Get People Hooked." *Wall Street Journal*, November 21, 1986, p. 34.

18. Stigler, George J., "The Theory of Economic Regulation." *The Bell Journal of Economics and Management Science*, April 1971, 3–21.

19. Telser, Lester G., "Advertising and Competition." *Journal of Political Economy*, December 1964, 537–62.

20. U.S. Congress. House. Committee on Energy and Commerce. *Comprehensive Smoking Prevention Education Act. Appendix to Hearings before the Subcommittee on Health and Environment of the Committee on Energy and Commerce.* 97th Cong., 1st Sess., 1982, pp. 384–87.

21. U.S. Congress. House. Committee on Interstate and Foreign Commerce. *Cigarette Labeling and Advertising —1969. Hearings before the Committee on Interstate and Foreign Commerce.* 91st Cong., 1st Sess., 1969.

22. Yandle, Bruce, "Intertwined Interests, Rent Seeking, and Regulation." *Social Science Quarterly*, December 1984, 1002–12.