



Columbia University

*Department of Economics
Discussion Paper Series*

The Economic Analysis of Advertising

Kyle Bagwell

Discussion Paper No.: 0506-01

*Department of Economics
Columbia University
New York, NY 10027*

August 2005

The Economic Analysis of Advertising
by Kyle Bagwell
This version: August 2005

1. Introduction (pages 1-6)
2. Views on Advertising (pages 6-25)
 - 2.1. Setting the Stage
 - 2.2. The Persuasive View
 - 2.3. The Informative View
 - 2.4. The Complementary View
 - 2.5. Summary
3. Empirical Regularities (pages 25-54)
 - 3.1. The Direct Effects of Advertising
 - 3.1.1. Sales
 - 3.1.2. Brand Loyalty and Market-Share Stability
 - 3.1.3. Advertising Scale Economies
 - 3.2. The Indirect Effects of Advertising
 - 3.2.1. Concentration
 - 3.2.2. Profit
 - 3.2.3. Entry
 - 3.2.4. Price
 - 3.2.5. Quality
 - 3.3. Summary
4. Monopoly Advertising (pages 54-69)
 - 4.1. The Positive Theory of Monopoly Advertising
 - 4.1.1. The Dorfman-Steiner Model
 - 4.1.2. Two Examples
 - 4.2. The Normative Theory of Monopoly Advertising
 - 4.2.1. The Persuasive View
 - 4.2.2. An Alternative Approach
 - 4.2.3. Price-Maintaining and Price-Decreasing Monopoly Advertising
 - 4.2.4. Price-Increasing Monopoly Advertising
 - 4.3. Summary
5. Advertising and Price (pages 69-83)
 - 5.1. Homogenous Products
 - 5.2. Differentiated Products
 - 5.3. Non-Price Advertising
 - 5.4. Loss Leaders
 - 5.5. Summary
6. Advertising and Quality (pages 84-104)
 - 6.1. Signaling-Efficiency Effect

- 6.2. Repeat-Business Effect
- 6.3. Match-Products-to-Buyers Effect
- 6.4. Quality-Guarantee Effect
- 6.5. Summary

- 7. Advertising and Entry Deterrence (pages 104-118)
 - 7.1. Advertising and Goodwill
 - 7.2. Advertising and Signaling
 - 7.3. Summary

- 8. Empirical Analyses (pages 118-130)
 - 8.1. Advertising and the Household
 - 8.2. Advertising and Firm Conduct
 - 8.3. Summary

- 9. Sunk Costs and Market Structure (pages 130-139)
 - 9.1. Main Ideas
 - 9.2. Econometric Tests and Industry Histories
 - 9.3. Related Work
 - 9.4. Summary

- 10. New Directions and Other Topics (pages 139-147)
 - 10.1 Advertising and Media Markets
 - 10.2 Advertising, Behavioral Economics and Neuroeconomics
 - 10.3 Other Topics
 - 10.4 Summary

- 11. Conclusion (page 147)

- 12. References (pages 148-176)

Figures 1-3b

The Economic Analysis of Advertising

Kyle Bagwell*

This version: August 2005

“What makes the advertising issue fascinating...is that it is fundamentally an issue in how to establish truth in economics.” (Phillip Nelson, 1974a)

1. Introduction

By its very nature, advertising is a prominent feature of economic life. Advertising reaches consumers through their TV sets, radios, newspapers, magazines, mailboxes, computers and more. Not surprisingly, the associated advertising expenditures can be huge. For example, *Advertising Age* (2005) reports that, in 2003 in the U.S., General Motors spent \$3.43 billion to advertise its cars and trucks; Procter and Gamble devoted \$3.32 billion to the advertisement of its detergents and cosmetics; and Pfizer incurred a \$2.84 billion dollar advertising expense for its drugs. Advertising is big business indeed.

From the current perspective, it is thus surprising to learn that the major economists of the 19th century and before paid little attention to advertising. The economic analysis of advertising is almost entirely a 20th-century project. Why didn't 19th-century economists analyze advertising? Two reasons stand out.

First, 19th-century economic research is devoted largely to the development of the theory of perfect competition, and this theory does not immediately suggest a

*Columbia University (Kelvin J. Lancaster Professor of Economic Theory in the Department of Economics, and Professor of Finance and Economics in the Graduate School of Business). I thank Susan Athey, Alberto Martin, Martin Peitz, Per Baltzer Overgaard, Michael Riordan, Victor Tremblay, Ting Wu and especially Mark Armstrong and Rob Porter for helpful comments. Discussions with Andrew Pyo and Laura Silverman are also gratefully acknowledged.

role for advertising. As Pigou (1924, pp. 173-4) remarks, “Under simple competition there is no purpose in this advertisement, because, *ex hypothesi*, the market will take, at the market price, as much as any one small seller wants to sell.” Of course, whether a firm is competitive (i.e., price-taking) or not, it might advertise if it were thereby able to shift its demand curve upward so that a higher price could be obtained. But here a more basic problem arises: under the conventional assumptions that consumers have fixed preferences over products and perfect information with regard to prices and qualities, there is no reason for consumers to respond to advertising, and so the posited demand shift is unjustified.¹

Second, while advertising has long been used by merchants, its transition to “big business” is more modern. In the late 19th and early 20th centuries, following significant advances in transportation (railroads) and communication (telegraph) networks, manufacturers were motivated to pursue innovations in the machinery of production and distribution, so that economies of scale could be reaped. These economies, however, could be achieved only if demand were appropriately stimulated. The turn-of-the-century technological innovations that are associated with mass production and distribution thus gave significant encouragement to large-scale brand advertising and mass marketing activities.²

At the beginning of the 20th century, advertising was thus a ripe topic for economic research. The economic analysis of advertising begins with Marshall (1890, 1919), who offers some insightful distinctions, and then gathers momentum with Chamberlin’s (1933) integration of selling costs into economic theory. Over the second half of the century, the economic analysis of advertising has advanced at a furious pace. Now, following the close of the 20th century, a substantial literature has emerged. My purpose here is to survey this literature.

In so doing, I hope to accomplish two objectives. A first objective is to organize the literature in a manner that clarifies *what* is known.³ Of course, it is impossible

¹As Braithwaite (1928, p. 28) explains: “Under conditions of perfect competition producers would gain nothing by spending money on advertisement, for those conditions assume two things - (1) that the demand curve is fixed and cannot be altered directly by producers, and (2) that since producers can sell all that they can produce at the market price, none of them could produce (at a given moment) more at that price than they are already doing.”

²The emergence of large-scale advertising is also attributable to income growth, printing and literacy advances, and urbanization. See also Borden (1942), Chandler (1990), Harris and Seldon (1962), Pope (1983), Simon (1970) and Wood (1958).

³Surprisingly, there does not appear to exist another contemporary and comprehensive survey of the economic analysis of advertising. Various portions on the literature are treated in other work. For example, Ekelund and Saurman (1988) offer an interesting discussion of early views

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.