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A Critical Review and Synthesis of Research on Advertising in a Recession

Gerard J. Tellis and Kethan Tellis

April 16, 2009

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Gerard J. Tellis is Professor of Marketing, Director of Center for Global Innovation, and Neely Chair in American Enterprise, and Kethan Tellis is a student at the USC Marshall School of Business. This study was sponsored by Fox Sports. This study benefitted from the comments of David Aaker and the Marketing Science Institute. The report does not contain any opinion, recommendation, or feedback from the sponsor. The authors are solely responsible for the research and conclusions.

Introduction

Periodically, recessions afflict the U.S. and world economies. At such time, firms face declining revenues and shortages of cash. Their natural tendency is to cut back on seemingly discretionary expenditures such as R&D, marketing, and advertising. What has perplexed managers and analysts is whether such cutbacks are wise or self-defeating, either in the short term or long term. Over the decades, a number of studies have examined this issue in the context of advertising. This paper critically reviews the literature on the effectiveness of advertising in a recession and synthesizes the major conclusions from this review.

A narrow definition of a recession is two successive quarters of negative growth in gross domestic product (GDP). The advertising literature reviewed here has often used the term narrowly as in the above definition and sometimes broadly to mean a contraction in the economy (decline in GDP) over a whole year, as opposed to an expansion. Thus we will use the term recession broadly to mean economic contraction.

Appendix 1 shows the recessions (narrowly defined) in the last hundred years, the duration of the recession, and estimated changes in GDP and advertising expenditures. Three observations can be drawn from the table. First, over this time period, recessions have been getting shorter while expansions have been getting longer. Second, there has been a slight decline in the frequency of recessions in recent decades. Third, ad expenditures are quite sensitive to changes in GDP. However, the exact sensitivity cannot be estimated without a formal analysis, because the recession occurs within and across years while the estimated changes are on an annual basis. One such formal analysis (reviewed subsequently) suggests that the estimated elasticity of advertising expenditures to GDP is quite high, in the order of 1.5.

Our search of the literature followed four steps. First, we did a search of the words “advertising” and “recession” in three major electronic databases, Google, JSTOR, and ABI/Inform. Second, we carried out a search of recent issues of major advertising journals in the electronic library at USC. Third, we posted an announcement on ELMAR, the primary academic electronic bulletin board, requesting all articles and working papers on the topic. Fourth, we did a bibliographic ancestral search, scanning the reference list of reports on hand for reports not yet identified. Each of these step revealed articles on the topic that were not obtained from the other approaches. Our search yielded over 40 reports on the topic (see Primary and Secondary References at end of this document).

We grouped the 40 reports into five main types: (1) primary empirical studies that quantitatively assessed the relationships of advertising to economic variables or firm variables. (2) Theoretical reports that provided reasonable arguments for why advertising may or may not be effective in a recession. (3) Primary reports of case studies of successful advertising in a recession. (4) Secondary reports consisting of reviews or summaries of the primary empirical studies. (5) Reports consisting solely of opinions for why advertising may be effective in a recession without any original empirical data or good arguments. We did not find it necessary to review the last two groupings of reports.

The rest of the report is divided into five parts. The first part provides a synthesis of the findings from the literature of advertising in a recession. The second part contains a critical review of the primary empirical studies of advertising in a recession. The third part provides a summary of the theory against and for advertising in a recession. The fourth part describes case studies of successful advertising in a recession. The fifth part draws conclusions about the methods and results of the primary studies.

Synthesis of Findings

This report reviews the effectiveness of advertising in a recession based on a survey of the literature on the topic. An extensive search of the literature yielded over 40 reports, most of which were published. Of these reports, 10 were primary empirical studies and the rest were secondary studies, consisting of theoretical reports, opinions, or reviews of the empirical studies. These 10 studies span huge time periods (1926 to the current date) and cover a wide variety of recessions (from 1920 to 2005). They also cover a variety of countries and contexts, focus on a variety of independent and dependent variables, and use a rich variety of research methods to arrive at their conclusions. Yet, there is remarkable consistency in the findings as can be ascertained from this Executive Summary and the Conclusions towards the end of this document.

Almost half the empirical studies use rigorous statistical methods to analyze the data, while the rest use relatively simple methods. Some of the latter studies were conducted or sponsored by media firms or advertising agencies as indicated in the detailed summary of these studies later in the paper. As such, there may be a conflict of interest in the findings as the sponsorship may have desired though not required a certain kind of result. However, there is no self-evident flaw, bias, or weakness in the data or design in any of the empirical studies that would automatically invalidate their conclusions. The empirical studies can be classified into two broad groups. The first group focuses on the effect of economic cycles on aggregate advertising (and private-label share) in one or more countries. The second group focuses on the effects of individual firm's advertising on the firm's sales, market share, or profitability. The main findings of the studies are summarized below.

One large-scale, rigorous study on advertising and economic cycles suggests the following major conclusions. Advertising is strongly related to economic cycles. This pattern is evident across major world economies. However, the pattern is stronger in countries whose culture exhibits a tendency towards short term orientation and avoidance of uncertainty and whose corporate managers may suffer pressure from investors. The sensitivity of magazine and newspaper advertising to changes in the economy is higher than that of TV. Advertising's average co-movement elasticity with GDP across 37 countries of the world is 1.4. That is a 1% change in GDP results in a 1.4% change in advertising expenditures in the same direction.

Two rigorous studies on advertising and private-label share during economic cycles suggest the following conclusions. The share of private-label brands (relative to national brands) behaves counter-cyclically, increasing during an economic contraction and expanding during an economic expansion. Most firms adjust their behavior in response to recessions by cutting back on advertising, decreasing price promotions, and increasing non-price promotions such as

features and displays. This behavior is partly responsible for the increase in private-label share. The share movement of private-labels in economic cycles is asymmetric. Shares of private-labels increase more during a recession than they decrease during an expansion. Moreover, some of the private-label gains during a contraction are permanent, lasting beyond the recession.

Seven empirical studies analyzed the effect of firm advertising on sales or market share. A review of these empirical studies suggest that there is strong and consistent evidence that cutting back on advertising during a recession can hurt sales during and after the recession, without generating any substantial increase in profits. Such cutbacks can result in a loss in capitalization. On the other hand, not cutting back on advertising during a recession could increase sales during and after the recession. Moreover, firms that increased advertising during a recession experienced higher sales, market share, or earnings during or after the recession. Most of the studies consistently showed that the strategy adopted for advertising during a recession had effects that persisted for several years after the recession.

Five studies analyzed the effect of advertising on various measures of profitability. Two studies showed that cutting back on advertising during a recession did not increase profits. On the other hand, one study showed that not cutting back on advertising during a recession caused substantial growth in net income in those and subsequent years. Moreover, one study showed that increasing advertising led to increases in earnings that were higher if the increase was in a recession than in an expansion. However, two studies indicate that increasing advertising during a recession did not increase the return on investment.

A review of the literature shows a large number of reasons for and against advertising during a recession. Many of the reasons for not advertising can be easily refuted. On the other hand, many of the reasons for advertising during a recession are not compelling. The single most compelling reason to cutback advertising during a recession is the following. Sales during a recession are likely to be lower than during an expansion. If the firm were advertising optimally during the prior expansion then the optimal level of advertising may well be lower in the subsequent recession because sales are lower.

The most compelling reason to increase advertising during a recession is the following: Most firms tend to cut back on advertising during a recession. This behavior reduces noise and increases the effectiveness of advertising of any single firm that advertises. Thus, the firm that increases advertising in this environment can enjoy higher sales and market share. When the economy expands, all firms tend to increase advertising. At that point, no firm gains much. However, the gains of the firms that maintained or increased advertising during a recession persist. This theory is also the most reasonable explanation for all the empirical effects of GDP on advertising and of advertising on sales, market share, and profitability. It is also a simple but strong refutation of the theory for cutting back on advertising during a recession.

There are four important avenues for future research. First, whether or not firms should increase, hold constant, or decrease their advertising budget in a recession, depends on whether advertising elasticity differs between recessionary and non-recessionary periods. No study has analyzed the differences in advertising elasticity between recessionary and non-recessionary periods. This seems to be the most important omission in the current literature. It remains the

subject of most benefit for future research. Second, current recommendations about what a single firm should do, assume that all other firms keep their strategy constant, which currently implies they cut their advertising budget in a recession, as most do. However, if all firms increase or do not cut their advertising budget in a recession, would advertising in a recession still be as impactful as past research has found? This topic has not been studied and remains a very important one for future research. Third, a number of studies separated out firms based on whether they increased, maintained, or decreased advertising in a recession. The assumption was that firms choose to do this irrespective of their prior position. However, it may well be that stronger firms chose to increase advertising while weaker firms chose to decrease advertising. In other words, there may be a self-selection bias in the choice of strategies. Only three of the studies in this survey controlled for such a bias by using 3-year sales growth. Future studies need to control for such self-selection biases. Fourth, statistical analysis of the effects of advertising has advanced greatly, especially in the last three decades. These advanced methods are just beginning to be applied to the study of the effects of advertising in a recession. So far, they have been applied primarily to aggregate relations of advertising with the economy and much less to the specific effects of a single firm's advertising. Thus, there is a compelling need for future research to scientifically address the effectiveness of advertising in a recession using the latest statistical advances.

Critical Review of Primary Empirical Studies

Our extensive review of the literature, yielded ten empirical studies that analyzed the relationships of advertising with other variables, in a recession. Table 1 summarizes the main features of these studies. These studies span huge time periods (1926 to the current date) and cover a wide variety of recessions (from 1920 to 2005). They also cover a variety of countries and contexts, focus on a variety of independent and dependent variables, and use a rich variety of research methods to arrive at their conclusions. Yet, there is remarkable consistency in the findings as can be ascertained from the Synthesis, at the start of this document, and the Conclusions towards the end of this document.

Table 1: Summary of Primary Empirical Studies

Author	Published	Years Covered	Level of Analysis	Effect on Ad of	Ad Impact On
Vaile	1926	1920-1924	250 firms in U.S.	None	Sales
Meldrum & Fewsmith	1979	1974-1975	143 firms in U.S.	None	Sales, Net Income
Kijewski	1982	1981-1982	1000 + businesses in U.S.	None	Market share, ROI
McGraw-Hill	1985	1981-1987	600 firms in U.S.	None	Sales, Net Income
Biel & King	1990	1981-1982	749 businesses in U.S.	None	Market share, ROI
Kamber	2002	1990-1996	822 firms in U.S.	None	Sales
Frankenberger & Graham	2003	1971-2000	2662 firms in U.S.	None	Earnings
Deleersnyder et al	2007	1980 to 2005	37 countries	GDP	None
Lamey et al	2007	1975-2002	3 countries	GDP	None

Lamey et al	2008	1985-2005	92 categories in U.S.	GDP	None
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All the studies measured advertising as dollars of expenditure in a year or as the advertising to sales ratio. Three of these studies analyzed the relationship between aggregate advertising in the economy and economic cycles measured by gross domestic product (GDP). Three of the rest of the studies analyzed the effect of a firm's advertising on one of three dependent variables: sales, market share, or profitability. Sales refer to the revenues generated by a firm in a given period, typically a year, in these reports. Market share is percentage of the total available market serviced by a particular firm measured by a ratio of sales revenue of that firm to the sales revenue of the market. Market share may be abbreviated SOM (Share of Market). Profitability may be measured by return on investment, net income, or market capitalization. Return on investment (ROI) refers to the firm's internal ratio of revenue minus costs over a given period divided by investment. Net income is defined to be the difference between revenues and costs. Market capitalization is the price of the stock of the advertiser multiplied by its outstanding share. Some reports also used various indices to compare figures across years. Sales or market share indices refer to ratios of a given year's sales or market share to a base year, respectively. Percentage change or point change in these measures both refer to percentage changes over a given year.

We next review the empirical studies, grouping them by their focus on A) economic cycles, B) market share, C) sales, or D) profitability. The review of each study briefly describes the study, explains the analysis, summarizes the results, and evaluates its strengths and weaknesses.

A. Economic Cycles, Advertising, and Private-Label Share

This section summarizes the three primary studies that analyze the relationship between economic cycles, advertising, and share of private-labels: Deleersnyder et al 2007, Lamey et al 2007, and Lamey et al 2008

Deleersnyder et al 2007

Barbara Deleersnyder and her colleagues analyzed the relationships between advertising and economic cycles across 37 developed and developing countries that accounted for 84% of the world's advertising spending in 2004. Most of their data cover a time period of 25 years from 1980 to 2005. Within advertising, they looked at the impact of the economy on four advertising media separately: TV, magazine, newspaper, and print. They measure a country's economic cycles by the changes in the respective GDPs. Both advertising and GDP variables are corrected for inflation in each of the respective countries. The countries covered are 16 Western European, 3 North American, and 12 Asian countries plus Australia, New Zealand and South Africa.

To analyze the data, the authors first extracted the cyclical components in advertising and GDP for each country using the Hodrick and Prescott (1977) filter. This filter decomposed each of the times series (advertising and GDP) into a trend and the cyclical fluctuations around that trend. To estimate the elasticity of advertising to the economy, the authors modeled the co-movement of the cyclical components of advertising and GDP. The authors then estimated the variation of the sensitivity of advertising to GDP across countries as a function of various country characteristics.

The authors found that advertising is very sensitive to economic cycles measured by changes in GDP. Advertising's average co-movement elasticity with GDP across 37 countries of the world is 1.4. That is a 1% change in GDP results in a 1.4% change in advertising expenditures in the same direction. However, the pattern varies substantially across countries. Some of that variation can be explained by characteristics of the country. Thus, the sensitivity of advertising to the economy is stronger in countries whose culture exhibits short term orientation and a tendency to avoid uncertainty and whose corporate managers may suffer pressure from investors. The sensitivity of magazine and newspaper advertising to changes in the economy is higher than that of TV and much higher than that of radio.

This study has the following strengths:

- It covers a large cross section of countries and a large number of time periods
- It breaks down the effect of advertising into separate media.
- It estimates the sensitivity of advertising to the economy through rigorous statistical methods
- It further explains the variation in the sensitivity by characteristics of the countries.

The study has two limitations:

- It does not include some major world economies such as Russia, China, and Eastern Europe.
- It does not break down results by industry.

However, the strengths of the study far outweigh these limitations.

Lamey et al 2007

Lien Lamey and his colleagues studied the impact of economic cycles on the share of private-labels. They had data for three countries (for 20 to 30 years): UK (1980-2003), USA (1971-2003), and Germany (1975-2002).

To analyze the data, the authors first extracted the cyclical components in GDP and share of private-labels for each country using the Hodrick and Prescott (1977) filter, as in Deleersnyder et al 2007. To estimate the sensitivity of the share of private-labels to the economy, the authors then modeled the cyclical components of that share as a function of the cyclical components of GDP in each country. They also tested for asymmetries in the response of private-label share to expansions and contractions.

The authors found that a country's share of private-labels increases in economic contractions and decreases in economic expansions. However, private-label share increases more rapidly in contractions than it shrinks in expansions. Moreover, economic contractions have permanent positive effects on the share of private-labels.

The strengths of this study are the following:

- The study covers three countries and fairly long time series
- The study does a rigorous time series analysis of the data
- The study confirms a long-standing belief that private-labels' share varies with economic expansions and contractions

- The study also identifies asymmetries and permanent effects in this relationship.

The limitations of the study are the following:

- The study is limited to three countries
- The study does not examine variation by industries or categories
- The study does not examine the effect of advertising or other marketing variables on the share of private-labels.

However, the strengths of the study far outweigh these limitations.

Lamey et al 2008

Lien Lamey and his colleagues also studied the variation of marketing efforts and the share of private-labels by economic cycles and the extent to which marketing efforts affect the share of private-labels. Their data covers 92 different packaged consumer good categories. They have data for 20 years from 1985 to 2005 for the U.S. The key variables they analyze are share of private-labels, GDP, advertising, price-promotion, feature, display, and new product activity. The term feature refers to advertising by retailers in local newspapers, inserts, and mailed flyers. The term display refers to in-store displays. The term price promotion refers to temporary discounts in price.

To analyze the data, the authors first extracted the cyclical components in GDP and share of private-labels for each category using the Hodrick and Prescott (1977) filter, as in the Deleersnyder et al 2007. To estimate the sensitivity of the share of private-labels to the economy, the authors then modeled the cyclical components of that share as a function of the cyclical components of GDP. They also tested for asymmetries in the response of private-label share to expansions and contractions.

The authors found that across categories, private-labels' share of market exhibits countercyclical behavior. That is, it increases in economic contractions and decreases in economic expansions. Firms adjust their behavior with business cycles. During economic contractions, firms reduce advertising budgets, price-promotions, and new product activity. Advertising expenditures in all four media types (newspapers, radio, magazines, and TV) exhibit procyclical behavior. This advertising behavior is partly responsible for the counter-cyclical pattern in private-labels share. Part of the increase in private-label share during economic contractions is permanent, lasting beyond the contraction.

The strengths of this study are the following:

- The study covers a large cross section of industries over a fairly long time series
- The study does a rigorous time series analysis of the data
- The study analyzes a rich set of marketing efforts such as advertising, price promotion, feature, display, and new product activity.
- The study confirms a long-standing suspicion that advertising and promotion strategies affect the share of private-labels during expansions and contractions
- The study also identifies asymmetries and permanent effects in this relationship.

The limitations of the study are the following:

- The study is limited to one country
- The study does not measure the marketing and other activity of retailers.

However, the strengths of the study far outweigh these limitations.

B. Impact of Advertising on Sales

This section summarizes four primary studies of the effectiveness of advertising on sales. The studies, in chronological order are: Vaile (1926), Meldrum & Fewsmith (1979), McGraw-Hill (1985), and Kamber (2002).

Vaile (1926)

Roland S. Vaile (1926) conducted an analysis of the effect of advertising on sales from 1920 to 1924, a period that encompasses the 1921 recession. The study published in the *Harvard Business Reviews*, reported no support or sponsorship by any party with vested interests in the results. The analysis included 250 firms, whose sales were taken from Poor's *Manual of Industrials* (1926). In cases where data were not available for some firms, Vaile supplemented missing data from this source by a survey of firms under a promise of confidentiality.

The author compared the sales of firms that increased their advertising, to those that decreased their advertising, and those that did no advertising. All advertising referred to magazine advertising expenditures. The study then tracked the sales indices associated with each category over the five year period, 1920-24. This measure was further broken down by industrial categories including personal items, house furnishings, clothing, automobile equipment, automobiles, groceries, and building materials. He also monitored the sales associated with each subcategory as indices relative to the base year (1920). Vaile dropped firms that did not have a consistent pattern of increasing or decreasing advertising over the 4 years.

The study found that across all industry groups, increasing advertising was associated with increasing sales for each of the four years (see Table 2). In contrast, decreasing advertising was associated with decreasing sales for each of the four years. Firms that did no advertising had steady sales, a better scenario than those that had positive but decreasing advertising over those years.

Table 2: Movement of Sales Indices by Advertising Policy

	1920	1921	1922	1923	1924
Increased advertising	100	110	116	121	121
No advertising	100	100	100	100	100
Decreased Advertising	100	95	96	98	97

The analysis of the subcategories exhibited the same results (see Figure 1). For each category, the firms that increased advertising outperformed firms that did not advertise, which outperformed firms that decreased advertising. The results were stronger for personal items and clothing, categories where sales seem more responsive to advertising. This analysis has one

exception: the automobile category had higher sales for no advertising than for advertising increases or decreases. Vaile attributed that difference due to the increased sales of Ford automobiles during that period, because Ford automobiles appealed to consumers during a recession because of its low prices.

Figure 1: Sales Indices in Response to Advertising Strategy by Category

Industry	1920	1921	1922	1923	1924	Points Spread Between Firms Which Increased or Decreased Advertising			
						1921	1922	1923	1924
Personal items									
Increased advertising.....	100	116	129	125	127				
No advertising.....	100	100	100	100	100	25	30	25	28
Decreased advertising.....	100	91	99	100	99				
Clothing									
Increased advertising.....	100	118	117	118	111				
No advertising.....	100	100	100	100	100	28	30	35	28
Decreased advertising.....	100	90	77	73	73				
House furnishings									
Increased advertising.....	100	118	125	115	115				
No advertising.....	100	100	100	100	100	16	23	18	20
Decreased advertising.....	100	102	102	97	95				
Automobile Equipment									
Increased advertising.....	100	115	112	109	109				
No advertising.....	100	100	100	100	100	8	19	15	18
Decreased advertising.....	100	107	93	94	91				
Automobiles									
Increased advertising.....	100	80	109	98	95				
No advertising.....	100	100	100	100	100	3	11	13	7
Decreased advertising.....	100	77	98	85	88				
Groceries									
Increased advertising.....	100	102	96	100	104				
No advertising.....	100	100	100	100	100	12	9	9	15
Decreased advertising.....	100	90	87	91	89				
Building materials									
Increased advertising.....	100	108	103	98	107				
No advertising.....	100	100	100	100	100	4	-2	2	5
Decreased advertising.....	100	104	105	96	102				

The results suggest that increasing advertising during a recession results in increasing sales. On the other hand, decreasing advertising during a recession seems to result in decreasing sales, more so than for categories that did no advertising at all. The pattern generally holds across categories, though seems to be stronger for categories that are more responsive to advertising.

This study has the following advantages:

- It covered a moderately large cross section of 250 firms
- It used hard market data rather than self-reports from firms.
- It covered a time period of 5 years.
- It adopted a fairly creative design, contrasting sales of firms that increased advertising from those that did not advertise or those that decreased advertising over a five year period.
- It analyzed patterns across 7 industry groups

The study has the following disadvantages:

- It did not control for self-selection bias that could have occurred because a firm's prior performance affected which advertising strategy it adopted.
- It did not analyze the relationships between advertising and sales as continuous variables
- It did not control for other factors that could affect sales and thus, does not allow for strong claims of causality
- It analyzed the effect of only magazine advertising

Meldrum and Fewsmith , Inc. (1979)

Meldrum and Fewsmith, Inc (1979) conducted a survey of managers in firms to examine the effectiveness of advertising on sales during the 1974-1975 recession. The study was sponsored by Associated Business Publications, now American Business Press (ABP). The study surveyed managers in 4786 firms via a primary mailing followed by a reminder mailing to those who did not respond. The authors got 177 responses from which 143 firms had complete data. The authors then analyzed the impact on sales in 5 subsequent years in response to whether firms cut or maintained their advertising expenditures in 1974 and 1975.

The study broke down the firms into 4 groups, depending on whether they advertised less in 1974, less in 1975, or less in both years. They then calculated sales indices in each year with reference to 1972 as the base year for each group of firms. The results are in Table 3 and Figure 2

Table 3: Sales By Year In Response to Cuts in Advertising

	Did not cut in 1974 or 1975	Cut in both 1974 and 1975	Cut in 1974 but not in 1975	Cut in 1975 but not in 1974
	Average Index	Average Index	Average Index	Average Index
1972	100	100	100	100
1973	131	119	116	122
1974	168	131	141	143
1975	192	128	155	135
1976	220	147	172	155
1977	250	167	193	185
n =	64	13	26	40

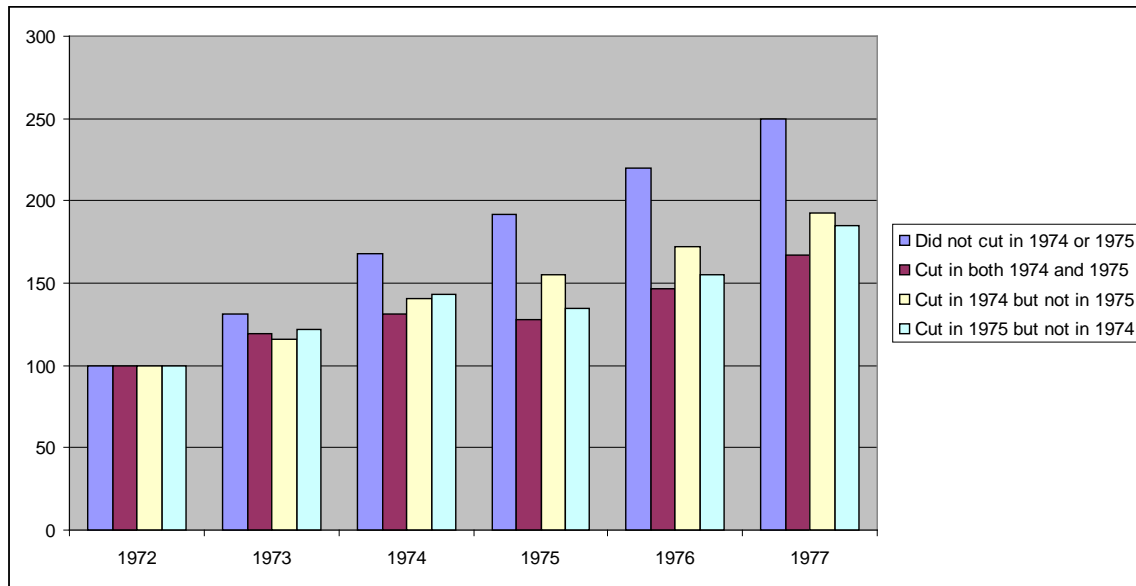
Figure 2: Sales Indices Following 1974-75 Recession

Figure 2 shows a strong impact on market share of maintaining advertising expenditure. In the years that followed the recession, firms which did not cut advertising expenditures experienced higher sales than those companies that cut advertising expenditures in 1974, or 1975, or both. Moreover, the sales of the former firms kept growing for up to 4 years after recession.

This study has the following advantages:

- It pooled information from a cross-section of 143 firms
- It tracked sales for four years after the end of the recession
- It analyzed four types of advertising strategies
- The study controlled for self-selection bias by monitoring performance two years prior to the start of the recession.

This study suffers from some limitations:

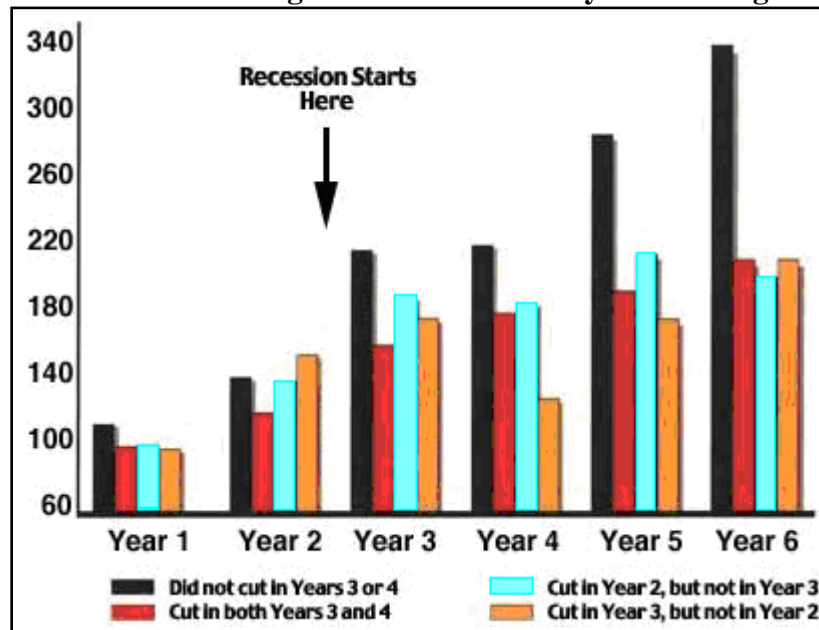
- Sales of firms that did not cut advertising in both years of the recession seem to increase prior to the start of the recession. This effect suggests that prior performance may have affected which advertising strategy the firm chose and performance following the recession.
- The study did not control for other factors and thus does not allow for strong claims of causality
- The study did not examine the effect of increasing advertising during recessions.
- This study is based on “soft” data or that collected through surveys via self-reports of firms. Such surveys may suffer from self-report or demand bias, if the respondent knew the goal or sponsor of the study
- The response rate of the survey was only 3.7% (177 of 4,786 surveyed)
- The study does not analyze the relationships between advertising and sales as continuous variables.
- The study is sponsored by American Business Press, which could reflect a conflict of interest

McGraw-Hill (1985)

McGraw-Hill Research's Laboratory of Advertising Performance studied the effect of advertising and sales during the 1981-82 recession. The study analyzed the performance of 600 manufacturing firms with market data obtained using Standard and Poor's Compustat data. Compustat is a large database containing historical financial records from as far back as 1950, containing information on 75,000 securities. CompUSA's data is self-reported by companies, though it is rigorously validated. The study tracked these firms over a six year period.

The study grouped firms by whether they decreased, increased, or maintained their advertising expenditures during the recession. The study computed the corresponding sales indices in regards to 1981 as a base year, for each of 5 subsequent years, for each group of firms. Figure 2 shows the results.

Figure 3: Sales Following 1981-82 Recession by Advertising Strategy



The figure shows that all firms increased sales for up to 6 years following the first year of the recession. However, firms that did not cut their advertising over both years of the recession, had sales that grew to almost 340% by year six. In comparison, firms that cut advertising in either one or both years, had much more modest increases in sales that grew to a little over 200% by year 6. These results provide strong evidence that not cutting advertising during a recession helps to keep sales growth at a high level.

The strengths of this study are the following:

- It tracked advertising and sales over a 6 year period
- It used the respected data base of S&P's Compustat data
- It targeted a large cross section of firms
- It clearly divided firms into four groups based on their advertising strategy
- The study controlled for self-selection bias by monitoring performance prior to the start of the recession.

This study suffers from the following limitations:

- Performance of firms that did not cut advertising in both years of the recession seem to be higher prior to the recession. Thus, better performance may have affected the choice of advertising strategy during the recession and its subsequent performance.
- The analysis did not control for other variables and so does not permit any strong conclusions of causality
- The study did not examine variation of effects across industries
- The study did not analyze the relationship between advertising and sales as continuous variables
- The study was conducted by McGraw Hill which may have a vested interest in the results.

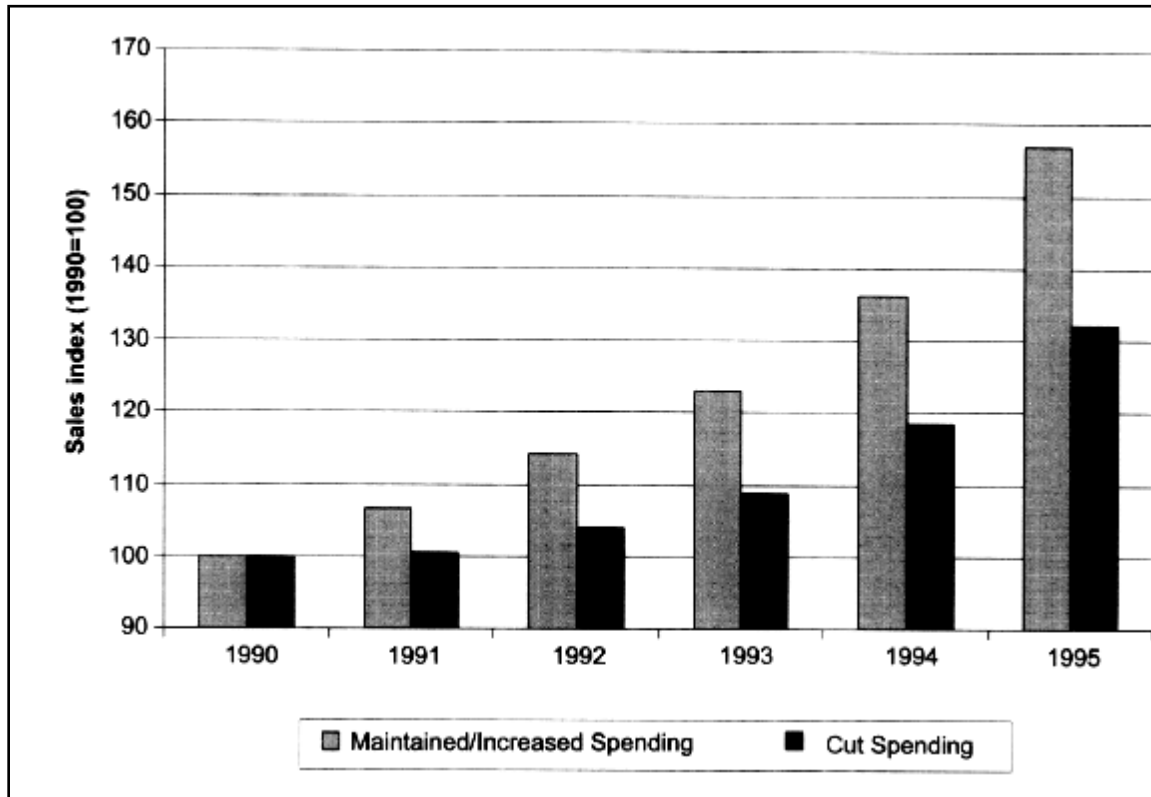
Kamber (2002)

Thomas Kamber (2002) conducted a study on the effect of advertising on sales over a 6-year period that encompassed the 1990-91 recession. The study was published in the *Journal of Brand Management*. It did not report any support or sponsorship from any party with a vested interest in the results.

Kamber studied the performance of 822 firms, using Compustat financial data and the Adspender database from Competitive Media Reporting (CMR, acquired by Taylor Nelson Sofres). The Adspender database contains the historical advertising expenditures of more than 60,000 firms, of which 822 could be matched to the Compustat financial database. Kamber used four methods to analyze the data.

Kamber's first method involved splitting the data into two groups, the first comprised of companies that decreased their advertising expenditures during the recession and the second comprised of those that maintained or increased their advertising expenditures during the recession, following the method used in the prior two studies. The mean sales indices were calculated for each group and then plotted over the six-year time interval. The results are in Figure 4. The figure shows that the group of companies that maintained or increased their adspend had larger sales growth than those that cut their advertising. Those that maintained or increased advertising had 7% annual growth in sales in 1991 compared to non-existent growth for the companies that decreased their advertising expenditures. This gap in sales growth between the two groups widened to 25 % by 1995.

Figure 4: Sales Indices for 1990-91 Recession



The second method that Kamber used to analyze advertising effectiveness involved bivariate correlation between change in adspend during the recession and growth in sales in each subsequent year. This method allowed one to assess the impact of advertising on sales continuously rather than coalescing the data into groups. Table 4 shows that the correlation between increase in adspend during a recession and growth in sales was statistically significant for each year following the recession.

Table 4: Correlation Between Increase in Adspend in a Recession and Growth in Sales in Subsequent Years

	Year 1	Year 2	Year 3	Year 4	Year 5
Correlation Coefficient	0.217	0.193	0.187	0.173	0.148
p-value	0	0	0	0	0.003
N	430	429	428	424	403

The third method Kamber used to analyze the advertising effectiveness was a multivariate regression model. The model analyzed the percentage change in sales for a 1% change in adspend after controlling for several other independent variables. These included:

- Total Market Value
- Stock Price Earnings (P/E) ratio
- Stock Volatility (beta)
- Total 1990 net sales

- The S&P credit rating
- Three-years sales growth prior to the recession
- Industry Sector (Using dummy variables)

Figure 5: Multivariate Regression Coefficients

Variable	Unstandardised Regression Coefficient			
	1991	1994	1997	2000
Pct. Change in Adspend	0.022**	0.002	0.006**	0.047**
Market Value	0.001**	0.000	0.000	0.000**
Stock Beta	2.012**	0.171	0.978	-0.294
Base Year Sales	-0.001**	0.000	0.000	0.000
3-Year Sales Growth	0.038**	0.154**	0.123**	0.032
R-squared	0.216	0.371	0.218	0.262
Listwise N	292	304	330	338

**Significant at the 0.01 level (two-tailed). *Significant at the 0.05 level.

The results of the multivariate analysis are in Figure 5. The results show that adspend was significant in explaining sales growth after controlling for the other independent variables. The standardized coefficient of the percent change in adspend to percent change in growth of sales was statistically significant with a value of 0.022 in 1991, the year of the recession. Indeed, it was higher in that year than in any of 3 of 8 years following that recession. The whole multivariate model could explain 20% of the variation in sales growth.

One final assessment conducted by Kamber was to observe the effect of adspend during non-recessionary years. Using the same methods as described above, Kamber found adspend not to have a significant impact on sales growth in 1994, and 1997. While statistically significant, the relationship was a third of that during the recession. Only in 2000 during the dot com bubble did adspend have a significant impact on par with that measured in 1991.

Kamber's study has the following strengths :

- The study used hard market data
- The study used a large sample of 822 firms
- The analysis used multiple methods
- The study analyzed the relationship between ad expenditure and sales as continuous variables
- The analysis controlled for multiple independent variables in addition to advertising and carried out the analysis via multivariate models
- By using 3-year growth, the study controlled for self-selection bias that could have occurred because a firm's prior performance affected which advertising strategy it adopted.
- The study did not seem to be sponsored by any media or advertising agency

The study has the following limitation:

- The study did not analyze the effects of advertising by industry.

Kamber's study provides very strong and robust support for the premise that increasing advertising during a recession helps to increase sales.

C. Impact of Advertising on Market Share

This section summarizes two primary studies of the effectiveness of advertising on market share. The studies, in chronological order are: Kijewski (1982) and Biel and King (1990).

Kijewski (1982)

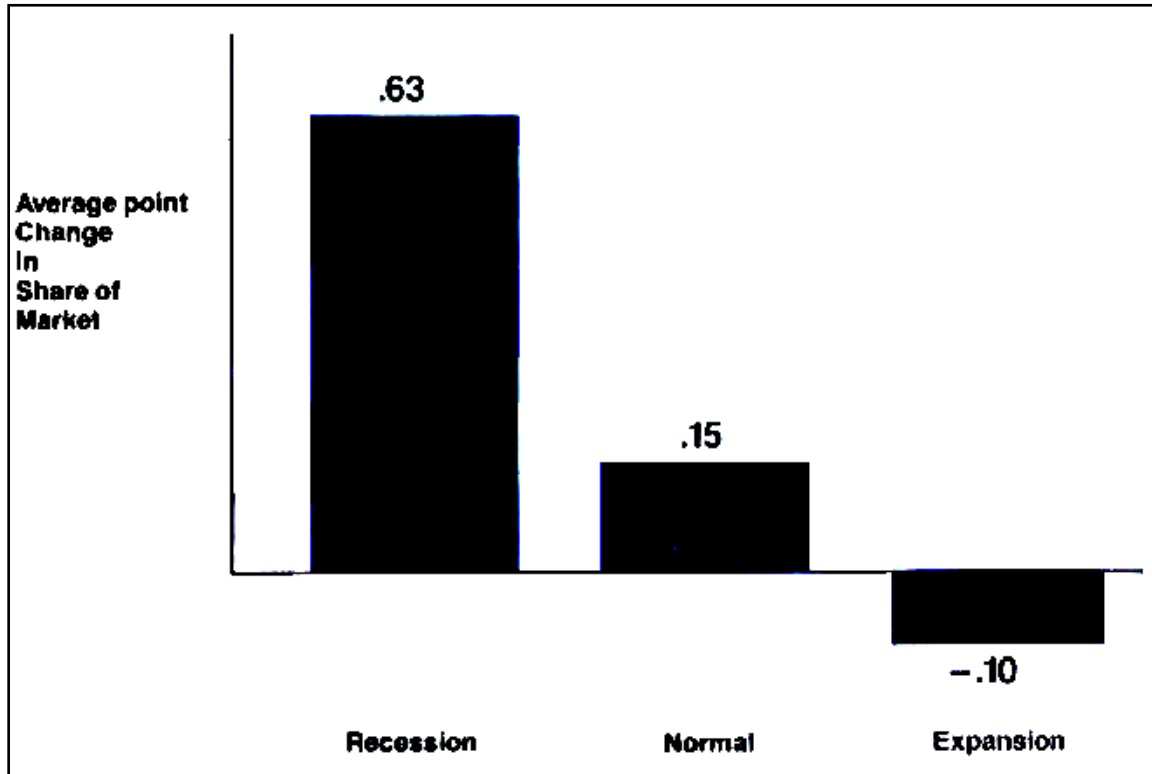
Valerie Kijewski (1982) of the University of Massachusetts, Lowell, carried out a study of the effect of advertising during a period that may have included the 1981-82 recession. She used the data from the Profit Impact of Marketing Strategies (PIMS) project of the Strategic Planning Institute (SPI). The study was published by the Strategic Planning Institute and Cahners Publishing Inc.

The PIMS database is a large longitudinal data base, originally developed at GE in the 1960s, to track the profitability of various marketing strategies at firms' business unit level. By the 1980s, the study accumulated and pooled data on thousands of business units over a large cross section of industries. The PIMS data is based on self-reports by business units on a standard form provided by SPI. Kijewski examined over 1000 business units in this sample.

While Kijewski's study may have included the 1981-82 recession, she had a unique definition of a recession and expansion. She defined a recession as a time period in which the business unit's served market was growing 4% points slower than the long term market growth rate. She defined an expansion as a period in which the business unit's served market was growing at a rate more than 4% points faster than the long-term growth rate. The remaining period she defined as "normal" periods.

Kijewski first tracked the market share performance of the business units during recessionary, stable, and expansionary periods defined above. She then computed the percent change in market share over each of these periods. Figure 6 shows that market share change varied substantially by these three periods. Market share increased by 0.63% during a recession and by 0.15% during normal periods and declined by 0.10% during expansionary periods. Kijewski argued that the average point change in market share increased during recessions because business units, especially marginal ones, were less willing or able to defend against the aggressive business units. In periods of expansion, average point change in market share decreased due to new business units entering the market.

Figure 6: Change in Market Share By Economic Condition



How does advertising affect this response? To answer this question, Kijewski further divided the sample into three groups, based on how business units changed their advertising: decreased, increased by a modest amount, or increased by a huge amount. The study found that the effect of change in advertising on market share was quite asymmetric, as shown in Table 5.

Table 5: Change in Market Share for Changes in Advertising by Market Condition

Market Condition	Percent Change in Market Share		
	For Decrease in Ad Expenditure	For Increase in Ad Expenditure up to 28%	For Increase in ad expenditure by 28 – 50%
Recession	.2	.5	1.5
Normal	.2	.2	.2
Expansion	-1.0	.2	.2

The table shows that increases in advertising expenditure are effective, but especially during a recession. During a recession, few business units increase advertising. If the increase in advertising was up to 28%, market share went up by .5% during a recession. However, if the increase in advertising was 28% to 50%, market share went up by 1.5%. On the other hand, decreases in advertising were deleterious only in an expansion, causing a decline of 1% in

market share. An increase in advertising during an expansion led to no special increase in market share. Similarly, decreases of advertising during a recession caused no unusual harm to market share.

What can explain this unusual response pattern? Kijewski argued that it was due to the fact that a business unit was adopting an advertising strategy that differed from what most competitors were doing. Thus, increases in advertising during an expansion were not particularly effective because most business units (80%) were doing that. Conversely, cutting back on advertising in a recession was not particularly harmful because most business units were doing that (75%). The big payoff came from increasing advertising in a recession. Only 25% of business units were doing that. The big harm came from decreasing advertising during an expansion.

In conclusion, Kijewski's study shows that business units can gain market share over their rivals, by large increases in advertising during recessionary periods.

This study enjoys the following strengths:

- It is based on a very large sample of over 1000 business units
- It covered a cross section of businesses across many industries
- It used a longitudinal data base covering many time periods
- It used the PIMS data. Even though the original PIMS data base is based on survey data, that data was not collected to study the effect of advertising in a recession. Thus it is unlikely to suffer from demand bias.
- It adopted a creative design, examining increases and decreases in advertising during recessionary, stable, and expansionary periods.
- It employed a balanced design, fully crossing 3 levels of economic conditions with three types of changes in advertising expenditures.

This study suffers from some limitations:

- The study did not control for self-selection bias that could have occurred because a firm's prior performance affected which advertising strategy it adopted.
- The study did not control for other factors and thus does not allow for strong claims of causality
- The study did not analyze the variation of effects across industries.
- The study defined recession and expansion based on each business unit's market growth
- The study did not analyze the relationships between ad and sales as continuous variables.

None of these limitations necessarily invalidate the basic findings of the study.

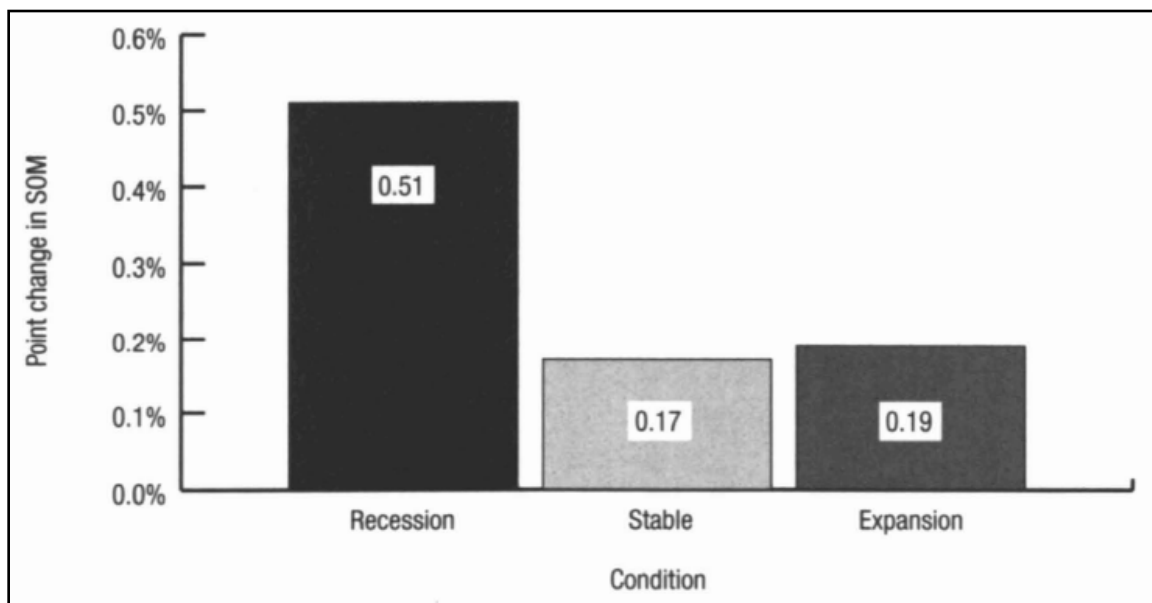
Biel and King (1990)

Alex Biel and Stephen King (1990) conducted a study using the data available in the PIMS database (as explained in the prior subsection). The study was published by the WPP Group's Center for Research and Development in collaboration with the Strategic Planning Institute. The study covered a four year time period which included the 1980-81 recession.

Biel and King used the same definition of a recessionary, normal, and expansionary period as did Kijewski (1982). A recession was a period in which the served market's short term was slower than its long term growth by 4% or more. An expansion was a period in which a served market's short term growth was more than its long term growth by 4% or more. The rest of the business units were defined to be in a stable market. Following these definitions Biel and King analyzed 749 businesses units, of which, 339 reported experiencing a recessionary period.

Biel and King divided the sample of 749 business units into those that fell into recessionary, stable, and expansionary periods, as defined above. Figure 7 gives the average market share of business units in each of these three market conditions. As Kijewski found, market share increased during a recession by as much as .51% while in stable or expansionary periods it increased by only .17 or .19% respectively. Biel and King attributed this to the fact that weak business units are likely to fail during recessions, enabling those that survive to increase market share more than at non-recessionary periods.

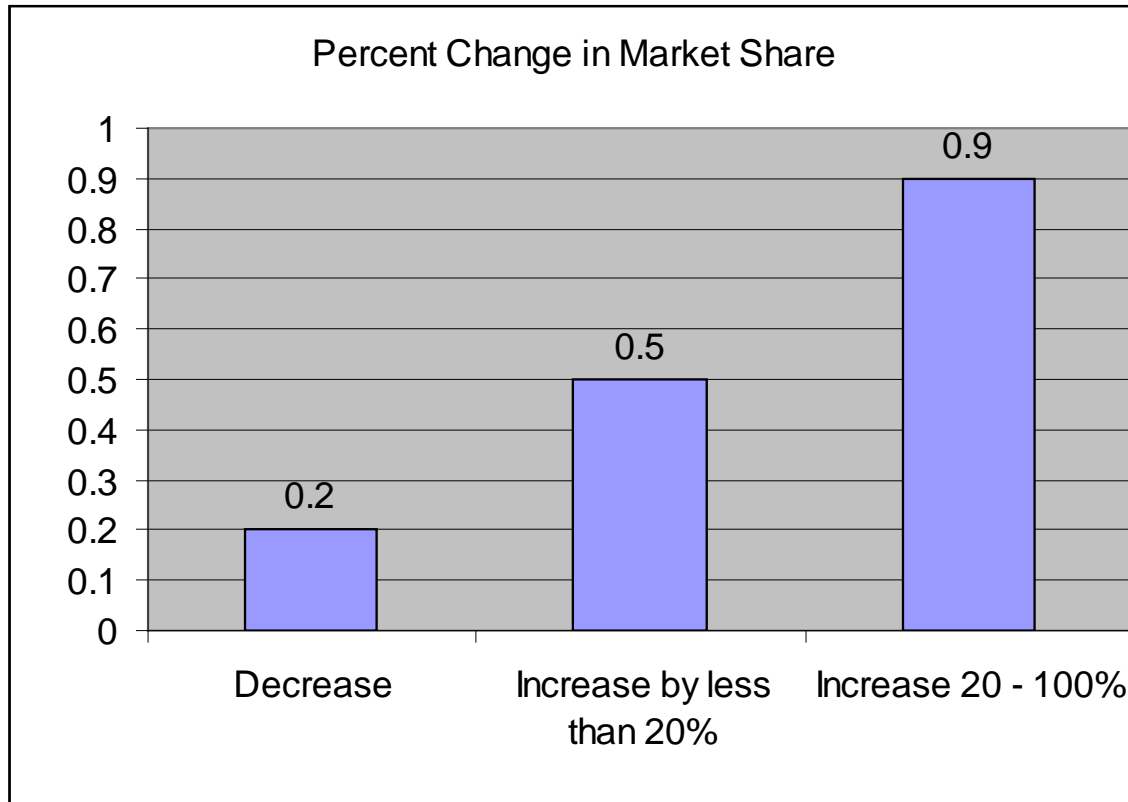
Figure 7: Point Change in Share of Market (SOM) by Market Condition



How do changes in advertising affect changes in market share? Biel and King divided the 339 firms that experienced a recession into whether they decreased advertising, increased it by up to 20%, or increased it from 20% to 100%. The results are in Figure 8. The figure shows that on average market share of firms in the sample increased. However, increasing advertising expenditure during a recession by up to 20% increased market share by .5% versus an increase of only .2% for decreases in advertising. Moreover, increases in advertising from 20% to 100% led to an increase in market share of .9%. Moreover, the market share response to increases in advertising during a recession are much higher than the corresponding response during expansion.

In conclusion, this study uses slightly different data and design to that of Kijewski (1982) but arrives at similar conclusions. During a recession, increases in advertising are more productive than decreases in advertising. Moreover, during a recession, big increases in advertising are much more productive than modest increases in advertising. Also, increases in advertising are more productive during a recession than during an expansion.

Figure 8: Point Change in Share of Market (SOM) by Advertising During a Recession



This study enjoys the following strengths:

- It is based on a large sample of business units: (339 to 749)
- It covered a cross section of business units across many industries
- It used a longitudinal data base covering many time periods
- It used the PIMS data. Even though the original PIMS data base is based on survey data, those data were not collected to study the effect of advertising in a recession. Thus, they are unlikely to suffer from demand bias
- It adopted a creative design, examining increases and decreases in advertising during recessionary, stable, and expansionary periods

This study suffers from some limitations:

- The study did not control for self-selection bias that could have occurred because a firm's prior performance affected which advertising strategy it adopted.
- The study did not control for other factors and thus does not allow for strong claims of causality
- The study did not analyze the variation of effects across industries

- The study defined recession and expansion based on each business unit's market growth
- The study did not analyze the relationships between ad and sales as continuous variables

None of these limitations necessarily invalidate the basic findings of the study.

D. Impact of Advertising on Profitability

This section summarizes the findings of 5 primary studies of the effectiveness of advertising on profits. One study examines the effect of advertising on earnings: Frankenberger and Graham (2003). Two studies examine the effect of advertising on return on investment (ROI). The studies, in chronological order are: Kijewski (1982) and Biel and King (1990). Another two studies examine the effect of advertising on net income. The studies, in chronological order are: Meldrum and Fewsmith, Inc. (1979), McGraw-Hill (1985).

Frankenberger and Graham (2003)

Kristina Frankenberger and Roger Graham analyzed the effects of advertising in a recession on current, one year ahead and two year ahead earnings. The authors focused on a large sample: 2662 firms covering the years 1971 to 2000, for a total of 16,147 firm-years. The sample covered 994 firms selling consumer products, 1334 firms in B2B products and 334 firms in services. The authors used annual accounting and stock market data came from Compustat tapes.

For the analysis, the authors examined the effect of current and lagged advertising on current earnings after controlling for the effect of R&D, assets, industry advertising, and total liabilities using a time series regression model. The authors separated out the effects of advertising based on whether there was an increase or decrease and whether it occurred in an expansion or a recession.

The authors found that increases in advertising resulted in significant increases in earnings that were greater when advertising increase occurs in recessions than in expansions. This effect is statistically significant in consumer and B2B products but not for services. The increase in earnings extended for one year after the recession. Also, the increase in earnings caused by advertising exceeded the increased cost of the advertising. B2B firms that decrease their advertising during a recession suffered erosion in earnings. However, aside from this current year effect for B2B firms, cuts in advertising in a recession have no negative or positive effects on current or future earnings for consumer or service firms. The authors found that neither increases nor decreases in advertising during recessions had effects beyond two years. Firms in the service sector neither benefited from increases in advertising nor were they harmed by decreases in advertising during a recession.

The strengths of the study are the following:

- It covers a very large cross sections of firms in three sectors of the economy
- It covers a reasonably long time series
- It adopts a reasonably sound regression model with adequate control variables
- It uses only market data that is reasonably objective

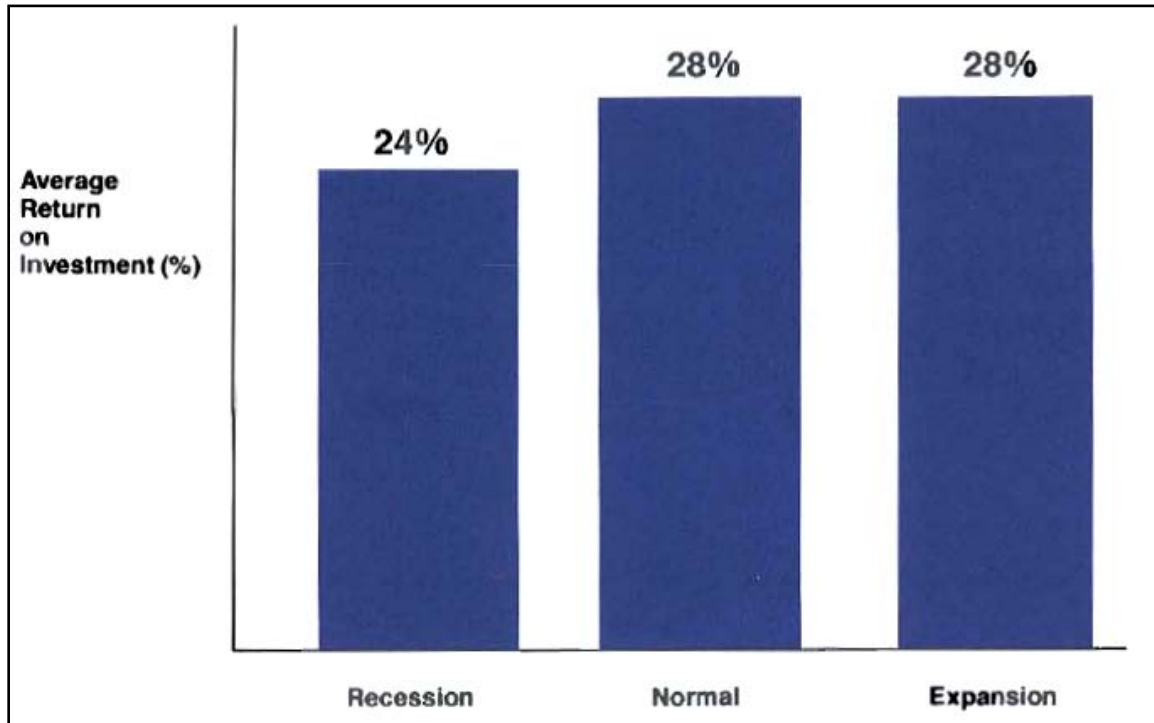
The study does not have any major limitations.

Kijewski (1982)

See the description of the Kijewski's study in the earlier section.

Kijewski examined ROI during recessionary, normal, and expansionary periods. She found that recessionary periods experienced slightly less average ROI, as show in Figure 9.

Figure 9: Average Return on Investment Under Varying Market Conditions



She next analyzed the impact on ROI for varying levels of advertising expenditure. Surprisingly, she found that decreases in advertising during a recession did not lead to any increase in profit (see top left box in Table 5). Similarly, even big increases in advertising during a recession did not cause any major loss in ROI.

In conclusion, while all business units suffered some loss in ROI during a recession relative to normal or expansionary times cutting back on advertising did not seem to reduce this loss.

See the earlier subsection on Kijewski for a discussion of the strengths and limitations of this study.

Table 5: Effect of Advertising on ROI by Market Condition

		Percentage Change in Media Advertising Expenditures		
		Decrease	up to 28%	28-80%
Market Conditions	Recession	24	24	25
	Normal	27	25	31
	Expansion	29	29	27
		0%	28%	

Biel and King (1990)

See the description of Biel and King in the earlier subsection.

Alex Biel and Stephen King compared the ROI of 339 business units during recessionary, normal, and expansionary periods. The results are in Figure 10. The figure shows that expansions seemed to result in an increase in ROI of 2% while recession seemed to result in a loss of ROI of 1.9%. In stable periods, ROI increases by .4%.

Biel and King next examined the impact of changes in advertising on profitability for business units that decreased, modestly increased, or substantially increased advertising. The results are in Table 6. The table shows that those business units that substantially increased their advertising experienced the largest drop in ROI of 2.7%. In contrast, those that modestly increased their advertising (up to 10%) suffered a loss in ROI (of 1.7%) that is not much more than those who decreased their advertising (ROI loss of 1.6%).

In conclusion, this study shows that all business units suffered losses in recession. However, those that cut back on advertising did not seem to reduce these losses relative to those that modestly increased their advertising.

See the earlier subsection on Biel and King for a discussion of the strengths and limitations of this study.

Figure 10: Change in ROI Over the 1990-91 recession

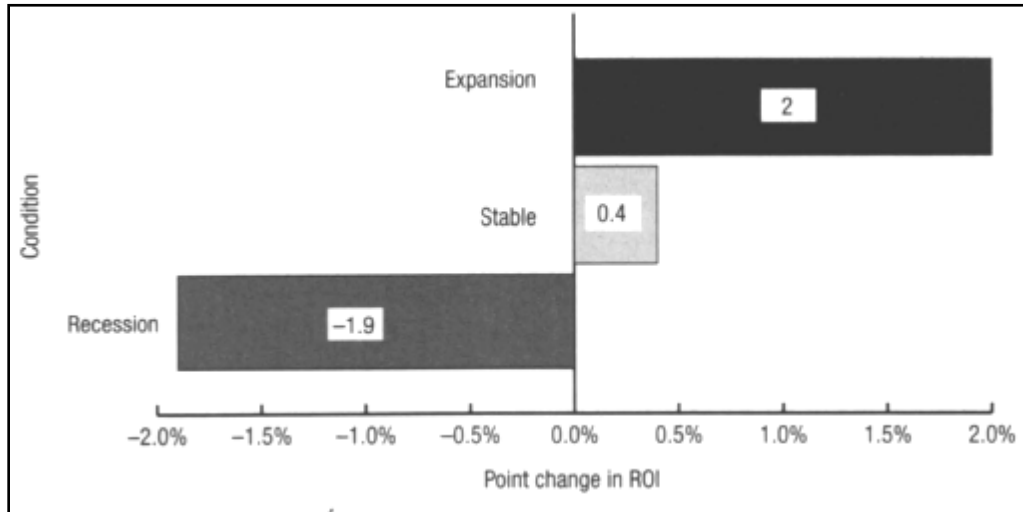


Table 6: Change in ROI by Percent Change Advertising

Spending	Changes in ROI
Decreased (ave -11%)	-1.6%
Modest increase (ave +10%)	-1.7%
Substantial increase (ave +49%)	-2.7%
Average change – all businesses (see Figure 1: Recession)	-1.9%

Meldrum and Fewsmith , Inc. (1979)

Meldrum and Fewsmith (1979) conducted a survey of managers in firms to examine the effectiveness of advertising on net income change during the 1974-1975 recession. American Business Press Inc. (ABP) sponsored the study.

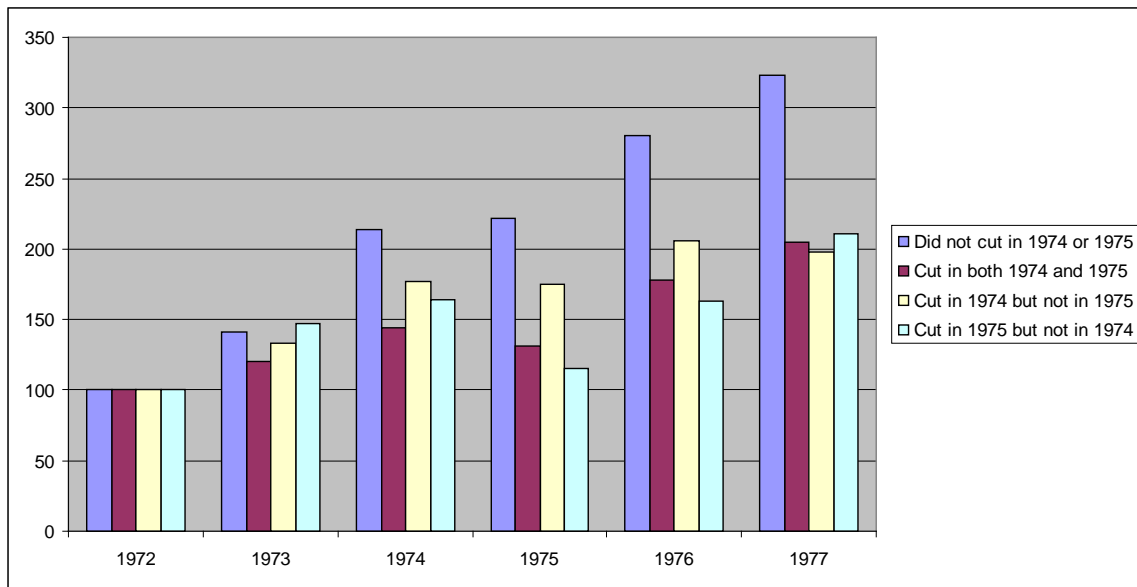
See the earlier subsection on Meldrum and Fewsmith for a description of the study. Meldrum and Fewsmith compared the growth in net income for each of four levels of advertising: no cut in advertising in both years of the recession, cut in either year of the recession, and cut in both years of the recession. They used 1972 as a base year and analyzed net income for 5 subsequent years. Table 7 and Figure 11 show the impact of advertising strategy on net income.

Table 7: Net Income Response (indices) to Advertising Cuts by Year

Results In Year	Did not cut in 1974 or 1975	Cut in both 1974 and 1975	Cut in 1974 but not in 1975	Cut in 1975 but not in 1974
1972	100	100	100	100
1973	141	120	133	147
1974	214	144	177	164
1975	222	131	175	115
1976	280	178	206	163
1977	323	205	198	211
observations	60	11	26	36

Source: Meldrum and Fewsmith, Inc. and ABP(1979)

Figure 11: Net Income Indices Following the 1974-75 recession.



The results of the study show a strong impact on net income of maintaining advertising expenditure during a recession. In the years that followed the recession, firms which did not cut advertising expenditures experienced higher net income than those companies that cut advertising expenditures in 1974, or 1975, or both. Moreover, the net income of the former firms grew to over 300% by the 6th year of the study. In comparison, the net income of the firms that cut advertising in one or both years grew to only 200% by the 6th year of the study.

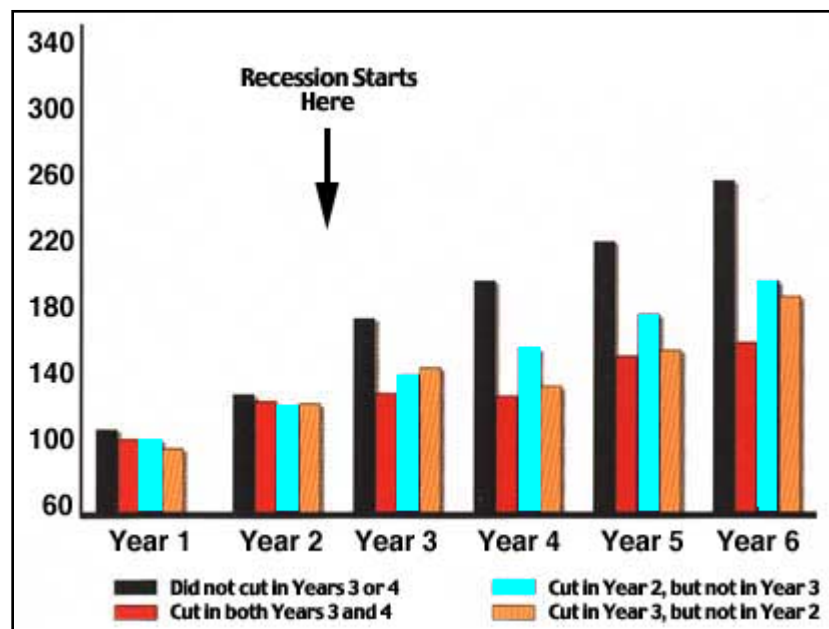
This study has the same strengths, and weaknesses as listed for the Meldrum and Fewsmith study in the previous subsection.

McGraw-Hill (1985)

See prior section for background method of this study.

McGraw-Hill analyzed Net Income by advertising expenditure over six years, using 1981 as a base year. They did the analysis by four groups of firms: those that cut advertising in both years of the recession, those that cut in either of one year, and those that did not cut advertising. The results are in Figure 12.

Figure 12: Net Income Indices Following The 1981-82 Recession



At the end of 1985, McGraw-Hill reported that firms that did not cut their advertising expenditures during the recession had a larger growth in net income than those firms that cut their advertising expenditures in one or both years of the recession.

This study has the strengths, and weaknesses as listed before for the McGraw Hill study.

Theories of Advertising Effectiveness in a Recession

Many reports explore theories for why a firm should or should not advertise during a recession. Most theories or reasons in favor of cutting back on advertising during a recession can be easily refuted (e.g., see Table 8). Likewise, most theories or reasons in favor of increasing advertising during a recession can be easily refuted. However, here we summarize the most persuasive theory against and for advertising during a recession.

Table 8: Claims and Rebuttals for Not Advertising in a Recession

<p>Claim 1: "Consumers have less disposable income during recessions"</p> <p>Rebuttal: Since 1940, the labor force may not have declined by more than 2% ¹. Similarly, consumers' disposable income has not declined by a large amount. However, advertising expenditures seem to decline more than the GDP or personal disposable income (Deleersnyder et al 2007).</p>
<p>Claim 2: "Firms can cut back on advertising if competitors do too"</p> <p>Rebuttal: Firms could also take advantage of the opportunity to seize market share from their competitors who are cutting back on advertising.²</p>
<p>Claim 3: "Money can be reallocated to pay dividends."</p> <p>Rebuttal: By cutting back on advertising, sales may decline during a recession. Alternatively, there may be a lost opportunity to build sales by advertising during a recession. These real or opportunity losses may be more in absolute value than the value to shareholders by paying out dividends. Money may be better invested in building sales and market share during a recession than in building investor faith in stocks.</p>
<p>Claim 4: "Resources could be better allocated to product development or R&D, which would later turn greater profits during market expansions."</p> <p>Rebuttal: In a declining market, sales response may be greater to advertising than to new products. Moreover, the cost of introducing new products may make that activity more profitable during expansion than during a recession.</p>

Source: Adapted from Advertising During a Recession. *Direct Marketing* Sept 1991

Theory For Decreasing Advertising During a Recession

Consider a stable market. We measure the advertising as a percentage of sales. There exists some level of advertising to sales for any given firm, such that advertising more would not be cost effective, while advertising less would generate less sales. We call this level of advertising the optimal level (Tellis 2004).

If we assume that during a recession the effectiveness of advertising does not change, that is to say that consumers equally respond to advertising during a recession as they do during a stable or expansionary market, then the optimal strategy (advertising as a percentage of sales) should not change. Since sales are likely to decline during a recession, the new optimal advertising during a recession is lower advertising as a percentage of sales relative to a stable market. Thus, the new optimal strategy for firms is to lower advertising during a recession relative to stable times.

¹ Advertising During a Recession. *Direct Marketing* Sept 1991.

² Advertising During a Recession. *Direct Marketing* Sept 1991.

Theory For Increasing Advertising During a Recession

However, substantial empirical evidence (reviewed above) suggests that increasing advertising during a recession leads to increases in market share and sales. Moreover, that effect seems to last beyond the recession. What could cause such a result given the above reasoning? *The only possible explanation is that response to advertising during a recession may be higher than that during stable times.* What could be the cause for this hypothesis?

The probable reason is the following. Many, if not most firms, adopt the reasoning outlined above, and cut back on advertising during a recession. Alternatively, many first budget for advertising on a percentage of sales. During a recession, they forecast lower sales, and so have a lower advertising budget. As a result, the total level of advertising drops during a recession. This drop may be greater than the drop in GDP or personal disposable income (Deleersnyder et al 2007). As a result, the total level of “noise” from advertising in the media decreases. Thus, the probability of any single ad being noticed, observed, and persuading consumers, increases. Moreover, because competitive advertising is lower, the advertising of any single ad would have less competition and greater effectiveness. Thus, for either of these two reasons, the responsiveness of advertising during a recession could well be higher than during a stable market. Under such a situation, it would be optimal for a single firm to advertise more during a recession than during a stable market.

This result holds so long as all firms do not advertise more during a recession than during stable times. If they do, then the conditions for optimality would reverse. However, because of uncertainty, the prevalence of the starting assumptions, and the possibility of declining sales, many, if not most firms, are likely to cut back more than the optimal level of advertising during a recession.

Case Studies of Successful Advertising in a Recession

The following cases are examples of firms that advertised during recessionary periods and reported rises in market share and sales. The examples listed have two limitations. First, we were not able to ascertain the validity of the original study. Second, published reports cover only successful cases and not a random sampling of firms that advertised during a recession. As such they suffer from potential survivor bias, meaning that unsuccessful cases may not have been reported. The first six case studies were reported in Barwise (1999) while the next four are from Ryan (1991).

Chandy and Thursby (1992)

In 1992, Caroline Chandy and Douglas Thursby analyzed the 1991 launch of the Clio by Renault during the 1990-91 recession. Their work “Renault Cli: Adding Value during a Recession,” demonstrated how a successful advertising strategy with set sales and marketing objectives allowed the Clio to gain 7.7% of the market for small-cars in the U.K. despite the recession. The study reported that Clio advertising reached a peak awareness of 56% and a Millward Brown Awareness Index rating of 7, well above the average of 3-4 for all car advertising. These results suggested that advertising may have played an important role in the success of the launch.

Clift (1992)

In 1992, Cathy Clift analyzed the advertising strategy of Whipsnade Wild Animal Park in their effort to reverse a 30-year decline in attendance. Her report “Whipsnade Wild Animal Park: How TV Advertising Helped Reverse a 30-year Decline,” detailed how their television-based advertising strategy based on the slogan “A walk on the wild side,” helped reverse the attendance trend despite being in a recessionary period (1990-91). Figures 13 and 14 demonstrate the changes in attendance by year and the park’s attendance against their competitors, respectively.

Figure 13: Annual Park Visitors

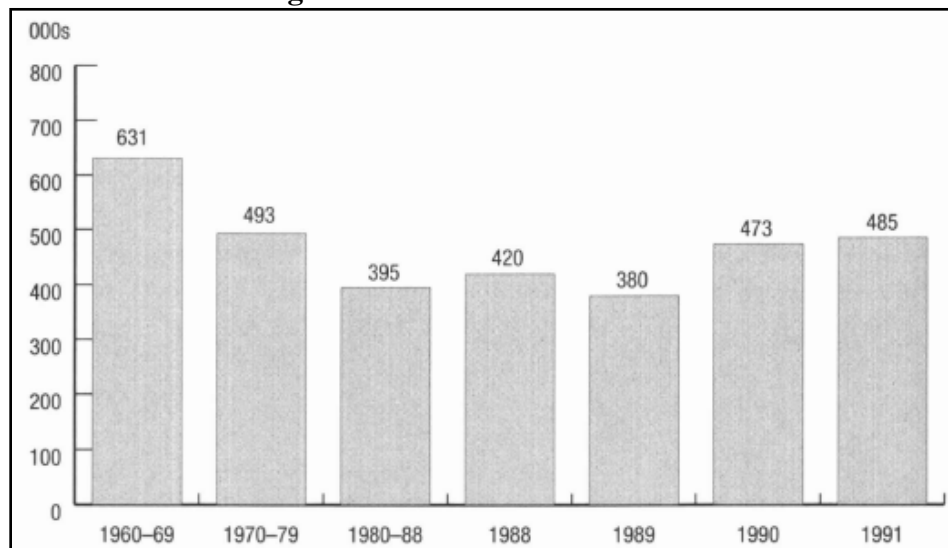


Figure 14: Index of Attendance of Leading U.K. Animal Reserves

	Whipsnade	Chessington	Windsor	Thorpe Park
1989	100	100	100	100
1990	125	122	97	76
1991	128	115	82	72

Baskin (1996)

Merry Baskin analyzed the advertising strategy of diamond giant De Beers in the case “De Beers – ‘Hard Times: Selling Diamonds’: How a Great British Idea Worked Across Europe and Beyond.” Baskin’s analysis showed that GDP and diamond sales were closely correlated with a correlation of .979 and that the diamond market was hit hard by a U.K. recession in 1988-89, but De Beers managed to retain sales using an effective advertising strategy that grew developing markets by penetrating countries such as Thailand and Mexico and also by encouraging consumers to “trade up” to more expensive pieces in mature markets.

Carter (1992)

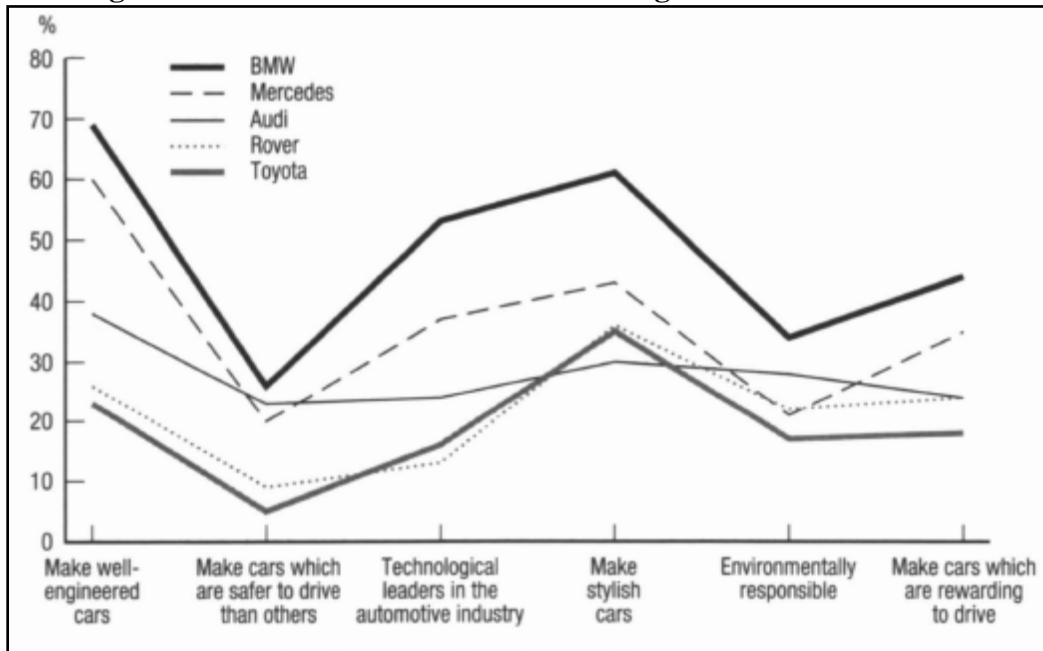
Sarah Carter reported in “Barclaycard: How a Bungling Secret Agent did More Than You’d Credit,” how Barclaycard’s advertising strategy was able to increase profitability in 1989, during a recession. Barclaycard which issued credit cards needed to increase cardholders’ turnover and interest income. It was able to achieve this by television advertising. The pre-advertising level of new cardholders was 10% but increased to 15% after the advertising. First-ever credit cardholders also increased from 15% to 26%.

Flint (1996)

In 1996 Colin Flint analyzed the advertising strategy of Nestle in marketing their Gold Blend premium coffee in “Love Over Gold: The Untold True Story of TV’s Greatest Romance.” Brand share had peaked at 7.8% in 1969 but had fallen to 6.5% in the mid 1980’s. Despite the recession in 1998-89, Nestle remarketed the Gold Blend brand with a successful ad campaign centered on the coffee meant for sophisticated individuals. The campaign was so successful that people also bought copies of ads on video, CDs, and books. Following the advertising campaign the sales of the brand grew by over 60% and Gold Blend took 13% of the market at the time the paper was published.

Broadbent (1994)

In 1994, Tim Broadbent analyzed the advertising strategy of BMW in “BMW: How 15 Years of Consistent Advertising Helped BMW Treble Sales Without Losing Prestige.” After the advertising campaign, BMW had better overall image.

Figure 15: Index of Attendance of Leading U.K. Animal Reserves

In addition the advertising campaign also increased the worth of the brand, with one consumer saying “You pay 8000 for the car and 5000 for the name.”

Ryan (1991)

- During the Great Depression, Kellogg maintained their level of advertising while Post decreased theirs leaving Kellogg domination of the cereal industry for decades.
- Ryan quotes analyst Jane Gilday of Faherty & Faherty, who said “If anything, the companies I follow, such as P&G, Philip Morris, and Revlon, are becoming more aggressive in their advertising...they’d spend more promotional and ad dollars to gain a little more market share,” in reference to the 1970’s recession.
- Connecticut’s Stanley Works, a tools manufacturer, experienced fewer sales in the 1974 recession and increased advertising to consumers allowing their hand tool industry to grow by 8% annually.
- During the 1970’s recession, Chevrolet dropped their strategy of pegging advertising as a percentage of sales and increased their advertising while Ford decreased their advertising by 14%. In the subsequent year Chevy increased their market share by 2%, while Ford lost theirs.

Conclusions

After analyzing the studies, we can draw the following conclusions on methods used and the findings about cyclicalities and the effectiveness of advertising during a recession.

Methods Used to Study the Effects of Advertising

We identified ten primary empirical studies of the effects of advertising in a recession. The following summary describes the methods of analysis used to derive the conclusions in the next subsection.

- Five studies used market data obtained from independent sources not related to any media or advertising agency. Market data has the advantage that it reflects the behavior of actual firms, consumers, and economies and is thus as close to reality as the researcher can get. Also, the sources had not collected these data to study the effects of advertising in recession. As such, the data are free from any investigator bias that might slant the results in any particular direction. Another two studies used survey data obtained for purposes other than to study the effects of advertising on sales. Such studies may also not suffer from demand bias. Three studies used survey methods to obtain data from firms. Such methods are prone to demand bias. This bias arises if the respondent guesses the motive of the researchers and consciously or unknowingly biases answers to please the researcher. One study used a mix of market and survey data.
- Six studies were done by independent researchers, who reported no sponsorship by media or advertising companies. As such they would be free from any conflict of interest. On the other hand, four studies were sponsored by a media or advertising company. Such sponsorship may cause a conflict of interest, in that the sponsor wishes the study to show that advertising is effective in a recession. However, there were no major systematic differences in findings across studies that were sponsored by media or ad agencies and those that were independent of such sponsorship.
- Only three studies were published in academic journals where they have had the benefit of peer review. Another three studies are rigorous working papers that are likely to be published in peer reviewed journal. Four studies were published by media firms or advertising agencies apparently without the benefit of peer review.
- Five studies used multivariate models to analyze the effect of advertising after controlling for other variables. Such studies allow for stronger inferences of causality than available by simple bivariate analyses. Three of these five studies used advanced time series analysis to ascertain the elasticities of advertising or private-label share to economic contractions and expansions. Such approaches allow for even stronger inference about causality. Five studies analyzed the effect of advertising on sales, market share, or profits using bivariate methods that do not control for other variables. Such an approach does not permit strong inference about causality.

The Cyclicalities of Advertising

With GDP

- One large scale empirical study found that advertising is very sensitive to economic cycles measured by changes in GDP. Advertising's average co-movement elasticity with GDP across 37 countries of the world is 1.4. The pattern varies substantially across countries. The sensitivity of advertising to the economy is stronger in countries whose culture exhibits short term orientation and a tendency to avoid uncertainty and whose corporate managers may suffer pressure from investors. The sensitivity of magazine and newspaper advertising to changes in the economic is higher than that of TV and much higher than that of radio.

With Private-label Share

- One rigorous empirical study found that a country's share of private-labels increases in economic contractions and decreases in economic expansions. However, private-label share increases more rapidly in contractions than it shrinks in expansions. Moreover, economic contractions have permanent positive effects on the share of private-labels.
- One rigorous empirical study found that across categories, private-labels' share of market exhibits countercyclical behavior. That is, it increases in economic contractions and decreases in economic expansions. Firms adjust their behavior with business cycles. During economic contractions, firms reduce advertising budgets, price-promotions, and new product activity. Advertising expenditures, in all four major media types, exhibit procyclical behavior. This advertising behavior is partly responsible for the countercyclical pattern in private-labels share.

The Effect of Advertising

On Sales

- Four studies found that firms, which cut back on advertising during a recession, experienced lower sales during and after the recession.
- Two studies found that firms that maintain advertising during both years of a recession have higher sales in subsequent years than those firms that maintain advertising in only one year and cut back in the other year or those that cut back on advertising in both years of a recession.
- Two studies showed that firms that increased advertising during a recession experienced higher sales during and after the recession than those that maintained advertising or cut back on advertising during the recession. One of these studies found that this result held across categories but was stronger for those categories that relied more on advertising.
- One study showed a significant positive correlation between increase in adspend during a recession and growth in sales for each year following the recession. This correlation is highest during the first year and diminishes in the following years.
- One study showed that the percentage change in adspend was a significant predictor of the percentage change in sales during a recession, after controlling for other independent variables. This effect was the strongest in the year of recession than in years following a recession. In the year of recession, change in ad spend was a stronger predictor of change

in sales than prior sales growth, stock volatility, credit rating or stock market price to earnings ratio. Thus, change in adspend is the most powerful indicator of sales growth during recessions, although it does not predict as well during stable or expansionary periods.

On Market Share

- Two studies showed that market share increases more during a recession than during stable times or expansions. The probable reason is that weak firms fail or lose share during a recession. Market share decreases more or increases less during an expansion than during a recession. The probable reason is that expansion attracts entry by new firms, which causes all firms to lose share.
- Two studies showed that a large increase in advertising causes an increase in market share that is larger during a recession than during stable times or an expansion. During a recession, increases in market share are larger as advertising increases. The probable reason for both these results is that most rivals cut back on advertising during a recession.

On Profitability

- Two studies showed that profits are lower during recessionary markets than during stable or expansionary markets.
- Three studies showed that decreases in advertising during a recession are not associated with any increase in profits. Further, one study showed that a decrease in advertising in a recession led to an erosion in earnings for B2B firms.
- Two studies showed that firms that did not cut advertising in both years of a recession had higher net income than those that cut advertising in one year of a recession; the latter firms in turn had higher net income than those firms that cut advertising in both years of a recession.
- One study showed that consumer and B2B firms that increased advertising during a recession had higher increase in earnings than those that did so in an expansion. Moreover, this effect persisted for one year after a recession.

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Appendix 1*

Recessions of the 20th Century (Tentative)

Date	Duration Months	Est Change in GDP per yr For last year	Est Change in Advertising Per yr
Sept. 1902-Aug. 1904	23	NA	NA
May 1907-June 1908	13	NA	NA
Jan. 1910-Jan. 1912	24	NA	NA
Jan. 1913-Dec. 1914	23	NA	NA
Aug. 1918-March 1919	7	NA	NA
Jan. 1920-July 1921	18	-17%	-22%
May 1923-July 1924	14	2%	3%
Oct. 1926-Nov. 1927	13	-2%	1%
Aug. 1929-March 1933	43	-4%	-18%
May 1937-June 1938	13	-6%	-9%
Feb. 1945-Oct. 1945	8	2%	5%
Nov. 1948-Oct. 1949	11	-1%	7%
July 1953-May 1954	10	0%	5%
Aug. 1957-April 1958	8	1%	0%
April 1960-Feb. 1961	10	3%	-1%
Dec. 1969-Nov. 1970	11	5%	1%
Nov. 1973-March 1975	16	9%	5%
Jan. 1980-July 1980	6	9%	10%
July 1981-Nov. 1982	16	4%	10%
July 1990-March 1991	8	3%	-2%
March 2001-Nov. 2001	8	3%	-5%

source: NBER and author estimates

* Tentative: numbers still being researched