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Abstract

The higher rates charged by newspapers for national advertising
than for residential (local) advertising have been the subject of
several previous studies. Previous studies have identified some causes
for the rate differential but they have not identified all causes. The
central argument of this study is that cooperative advertising and
a companion arrangement known as "double billing" are important factors
affecting the rate differential.

Multiple regression analysis is used for the statistical tests and
the results show that Federal Trade Commission enforcement against
illegal double billing practices caused significant changes on the
newspaper rate differential; therefore, the central argument is upheld.

THE EFFECT OF DOUBLE BILLING ON
THE NEWSPAPER RATE DIFFERENTIAL

By Walter J. Primeaux, Jr.*

The higher rates charged by newspapers for national advertising
than for retail (local) advertising have been the subject of several
previous studies. Ferguson was the first to make a systematic analy-
sis. After carefully examining seven facts or conditions as possible
causes of the newspaper rate differential, he finally rejected all but
the joint product hypothesis which was found to be the only explanation
of the difference. His findings are that newspapers set lower retail
rates relative to national rates to attract local advertising which
stimulates circulation; this effect, then, attracts more national
advertising.[1]

Simon found strong evidence that the demand for retail advertising
was higher than the demand for national advertising. His study argued
that the price discrimination explanation, previously dismissed as un-
important by Ferguson, is at least a partial explanation of the dif-
ference between retail and national newspaper rates.[2]

[1]James M. Ferguson, The Advertising Rate Structure in the Daily
Newspaper Industry (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963).

[2]Julian L. Simon, "The Cause of the Newspaper Rate Differential:
A Subjective Demand Curve Analysis," Journal of Political Economy 73,
No. 5 (October 1965): 536.

In a later study, I reported data which indicated that "double billing" explained movements in the newspaper rate differential.[3]

Bogart rejected my explanation that double billing was an important determinant of the newspaper rate differential with the following statement.

> Explanations for the waxing and waning of the
> differential since World War II might better be
> sought in the communications revolution of the
> period rather than in the area of illegal and
> unethical practices. As television came along
> in the 1950's, competition among advertising media
> changed. Television, with initially high rates,
> gained a steadily larger share of national budgets.
> Radio lost much of its national billings and offered
> comparatively lower rates because of the growing
> competition among an increasing number of stations.
> It became predominantly a local advertising medium,
> competing more actively with newspapers for retail
> business.[4]

My earlier study only presented data showing movements of the rate differential related to activities of the Federal Trade Commission in its effort to eliminate double billing; however, the study did not employ rigorous statistical analysis, so the conclusions were somewhat limited. Bogart's criticism was similarly unsupported by any rigorous statistical analysis and was based upon what he thought to be true about the newspaper advertising market.

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[3]Walter J. Primeaux, Jr., "The Newspaper Rate Differential: Another Element in the Explanation," Journal of Business of the University of Chicago, 48, No. 4 (October 1975): 492-99. Cooperative advertising and double billing are explained in some detail later in this paper.

[4]Leo Bogart, "The Newspaper Rate Differential: Another Element in the Explanation--Comment," The Journal of Business of the University of Chicago, 50, No. 1, January 1977.

The purposes of this additional study are: first, to examine again the newspaper rate differential question and second, to test more rigorously the effects of double billing on that difference. One important distinction between this effort and my previous work is that multiple regression analysis is used here, so the data are subjected to more rigorous examination than in the previous research.

THE THEORY

Double billing depends upon cooperative advertising for its existence. Cooperative advertising is partly paid for by the retailer and partly paid for by the producer of a product. Whenever double billing is employed, media accept manufacturers' ad copy from retailers at the (lower) retail rate (local rate) and the manufacturer is billed at the (higher) national rate.[5]

> Such an arrangement causes the retailer to pay something
> less than the percentage specified by the cooperative
> advertising plan. This outcome occurs because the
> retailer pays the total bill owed the medium at the
> local rate and is reimbursed by the manufacturer at the
> national rate. Since the national rate is usually higher
> than the retail rate, the retailer reaps the benefit from
> double billing.[6]

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[5]Double billing and the cooperative advertising arrangements are discussed in a number of references including Vertical Cooperative Advertising Report of the Committee on Cooperative Advertising (New York: Association of the National Advertisers, n.d.). This publication is not dated but the text shows that it was published sometime immediately after the end of WWII. Cooperative advertising allowances are also discussed in Leverette S. Lyon, Advertising Allowances (Washington, D.C.: Brookings Institution, 1932). The dates on the above sources show that abuses of cooperative advertising are rather long standing institutions. For a more up-to-date discussion see: "Lawyer's Advice: Co-op Linage Hurt by Double Billing," Editor and Publisher (March 30, 1963), p. 123.

[6]Primeaux, op. cit., p. 493.

Cooperative advertising plans vary but one common arrangement is that the retailer agrees to pay 50 percent of the cost of an ad and the manufacturer agrees to pay the remaining 50 percent. From this discussion it is clear that whenever double billing is used, the retailer pays less than the agreed portion of the advertising charge. Large firms with monopsony power may get much better than a 50-50 plan; so these firms may even make profits from cooperative advertising and double billing.[7]

It is impossible to assess accurately the total dollar amount of cooperative advertising within the economy; however, there are estimates that it accounts for as much as 25-35 percent of store advertising expenditures.[8] Obviously, any change which dramatically affects cooperative advertising practices would have a significant impact on both the advertising industry and the rates charged within the industry; the FTC action to curb double billing practices was such a change.

For double billing to "work" a rate differential must exist between the national and local rate. Local media compete with one another and if one medium uses double billing and another does not, the one providing that option to retail advertisers will gain an edge over its

[7]"Big Stores, Chains Are Chief Culprits in Co-op Ad Abuses Senate Unit Told," Advertising Age (August 17, 1964), p. 75.

[8]Harold H. Bennett, "Newspapers Have a Stake: The Retailer's Case for Co-op Ad Funds," Editor and Publisher (August 11, 1962), p. 15. In this article, the author points out that it is doubtful whether anyone really knows the total dollar amount of cooperative advertising. See also "Cooperative Ad Plan Benefits Described," Editor and Publisher (September 21, 1963), p. 22. Numerous telephone calls during the summer of 1982 to various trade associations, as well as another thorough review of trade and scholarly literature, failed to uncover the amount of cooperative advertising within the economy. Thus, Bennett's statement is upheld.

competitor. Newspapers can obviously sell more local advertising if retailers are actually relieved of the cost of paying for ads because double billing is used.[9] Consequently, advertising media have a real stake in having a national and local advertising rate to facilitate the double billing practice; moreover, they also have a stake in being willing to facilitate the practice by furnishing a double bill. One billing being for the real charge to the retailer, at the local rate net of quantity discounts earned by his advertising volume through the year. A second billing being at the national rate which is higher and really fictitious. The retailer pays the bill for the lower local charge and sends the higher bill with the national charge in to the manufacturer to claim his share of the cooperative advertising refund. If the local rate is 50 percent of the national rate and if the dealer has a 50-50 sharing agreement with the manufacturer, he would receive advertising without cost; this would occur because his claim would be for 50 percent of the national rate which is twice as high as the local rate, so his proceeds would equal the amount of the real bill he received for advertising.

In fact, the practices described above have existed over a long period of time. Consequently, one would expect the following to be true. First, double billing and cooperative advertising work together. Double billing cannot exist without cooperative advertising. Second, media which employ double billing really view the national rate as fictitious and they are actually willing to sell advertising at the

[9] Although the focus of attention here is upon double billing by newspapers, it is important to mention that it also occurs in the other media.

local rate. From the above discussion, one would expect that any ex-
ternal pressure on the practice of double billing would affect the
newspaper rate differential.

An extensive discussion of the role of the Federal Trade Commission
and its intense effort to eliminate abuses of cooperative advertising
and double billing can be found in my original article.[10] Data and
references show that in 1963 a turning point occurred in FTC enforce-
ment of the Robinson-Patman Act which seriously changed advertising
plans and cooperative advertising. This change also had a profound
effect on double billing which was explicitly ruled to be illegal by
the FTC; nevertheless, the practice has not been totally eliminated.
The impact of the FTC's crackdown on double billing abuses fell most
heavily upon newspapers.[11]

PROCEDURE

As mentioned earlier, the procedure involved the use of multiple
regression analysis to examine the variables thought to be important
in affecting the newspaper rate differential. The regression model is
based on the theory mentioned above as well as the criticism of my
earlier rate differential work by Bogart.

The ordinary least squares regression equation is in the form:

$$RDIF = A_1 + B_1 LNEW + B_2 LRAD + B_3 LTV + B_4 LCIR + B_5 DBILL$$
$$+ B_6 TREND$$

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[10] Primeaux, op. cit., pp. 493-496.

[11] "Co-op Advertising Dead?" Broadcasting (October 3, 1962), p. 51.

where:

RDIF = The newspaper advertising rate differential (a percent
      difference between the national and local rates)

LNEW = Log total newspaper advertising expenditures as a percent
      of total advertising expenditures

LRAD = Log total radio advertising expenditures as a percent
      of total advertising expenditures

LTV = Log total television advertising expenditures as a percent
      of total advertising expenditures

LCIR = Log total circulation of daily newspapers (in million issues)

DBILL = A dummy variable taking a value of 0 before 1964 and a
      value of 1 thereafter

TREND = A time trend variable.

Data sources, raw and transformed data, and a graph of the rate dif-
ferential through time are presented in the appendix.

All monetary values are expressed as percentages so it was not
necessary to deflate the data to remove the effects of inflation.

The data consists of time series observations for 1950 through 1979
(thirty years), essentially consisting of all data since WWII.

The model incorporates the circulation variable found to be impor-
tant by Ferguson[12] and the television and radio advertising levels said
to be important by Bogart. Moreover, the DBILL variable is used to
determine the impact of more rigorous enforcement of the Robinson-Patman
Act by the Federal Trade Commission as it attempted to curb double
billing abuses; this clearly happened according to the business liter-
ature in 1963.[13] This variable would capture the effects of double
billing on the newspaper rate differential.

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[12] Ferguson, op. cit.

[13] Primeaux, op. cit.

Attempts to obtain data to also provide an additional test of Simon's results were unsuccessful.

A time trend variable was also incorporated into the model to attempt to determine whether there have been any trend movements in the differential through time.

EMPIRICAL RESULTS

Table 1 presents the equation developed from the model discussed above. Statistics indicate that the equation explains 91 percent of the movement in the newspaper rate differential, when the coefficient of multiple determination is adjusted for degrees of freedom (and 93 percent before that adjustment). The results are quite robust with all partial regression coefficients, except the TREND variable, statistically significant at the one percent level. The TREND variable is significant at the five percent level. The Durbin-Watson test reveals that autocorrelation did not affect the results.[14]

The most important results from the equation is that the DBILL variable is, indeed, important in explaining a large part of changes in the rate differential. The results show that rigorous enforcement of the Robinson-Patman Act provisions against double billing caused the newspaper rate differential to decline by nearly four and one half percent. This is clearly a significant impact, indicating that double

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[14]If the trend variable is omitted from the equation, the Durbin-Watson statistic is adversely affected; it declines to 1.58976. However, the DBILL effect increases to -4.706. Signs on the other variables are unaffected. Because of the statistical significance of the trend variable, as well as the effect of its removal on the Durbin-Watson statistic, the equation in Table 1 was used.

TABLE 1

REGRESSION EQUATION

Variable	Partial Regression Coefficient	Standard Error	Beta
LNEW	-229.886	27.354[a]	-1.57419
LRAD	-58.685	12.253[a]	- .93223
LTV	-35.787	7.108[a]	-1.68642
LCIR	-175.075	47.406[a]	- .93267
DBILL	-4.404	1.193[a]	- .54432
TREND	.265	.121[b]	.56722

Summary Statistic

N (degrees of freedom plus number of variables) 30

R^2 .9266

$\overline{R}^2$ .9075

D.W. 2.18514

Constant 145.433[b]

F Statistic 48.417[a]

[a]Significant at 1 percent level.

[b]Significant at 5 percent level.

billing is in fact another element in the explanation in the newspaper rate differential.[15] Interaction variables were also used for each variable in the model interacting with the DBILL variable. The interaction variables were all statistically insignificant, so they were not included in the final equation.

The equation also shows that the newspaper rate differential is affected by growth of advertising in the newspaper media, as well as growth in advertising of radio and television media as asserted by Bogart.[16] The equation clearly shows that percentage increases in radio and television advertising tend to cause declines in the newspaper rate differential. This is clearly an effect of competition. The results show that advertising share loss to other media forces a newspaper to make rate adjustments. If the national market is threatened, the newspaper will lower national rates, relative to local rates, causing its rate differential decline. If, instead, the local market is threatened, the newspaper will lower local rates, relative to national rates, causing the rate differential to increase. These results are quite consistent with Bogart's suggestions mentioned earlier. Newspapers have been subjected to intense competition from radio and television since WWII.

The equation also shows that newspapers tended to decrease the rate differential as their share of total advertising increased. Combined with the above results, this means that if a newspaper's share

[15]Primeaux, op. cit.

[16]Bogart, op. cit.

of total advertising increases, because of a relative increase in its
sales of local advertising, it is inclined to reduce the rate differ-
ential. That is, it may be more inclined to raise its local rate rel-
ative to its national rate, thus causing the rate differential to de-
cline. All-in-all the "media" coefficients are all consistent with
one another.

The circulation variable does not seem to support the Ferguson
joint product hypothesis. The equation shows that there is an inverse
relationship between the newspaper rate differential and total news-
paper circulation, indicating that the rate differential declines as
circulation increases. Ferguson's theory would expect a direct rela-
tionship; that is, he said that the lower the local rate the higher
circulation would be; although the direction was different in his
model, the sign on the coefficient should have been identical, if
these results would be consistent with his. Of course, Ferguson's
study was cross sectional and this one is time series; this difference
would cause some variance in results.

The beta coefficients presented in Table 1 indicate the relative
importance of the variables in the equation in affecting the rate dif-
ferential. The coefficients show that the percentage increase in TV
advertising exerted the greatest relative amount of downward pressure
on the rate differential while the DBILL variable exerted the smallest
amount. The other variables demonstrated intermediate effects. This
merely indicates that the other variables were more important than
double billing; however, it does not diminish the fact that the double
billing effects were quite significant in affecting the decline in the
rate differential.

CONCLUSIONS

Competition from other media, as well as the relative growth of the level of newspaper advertising, significantly affect the newspaper rate differential but they do not provide an adequate explanation of its existence. The need for higher "fictitious" national rates to facilitate the double billing process is apparently a significant factor affecting the existence of the newspaper rate differential.[17] Rigorous enforcement of the Robinson-Patman Act to help curb double billing abuses decreased the need for such a wide difference between the local and national rates. This occurred because the interest in the double billing practice declined after the action by the FTC began in 1963.[18]

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[17] A more thorough discussion of the fictitious nature of the newspaper national advertising rate when double billing is used is presented in Primeaux, op. cit., p. 497.

[18] As mentioned earlier, indications are that double billing has declined since 1963, although it does continue to exist.
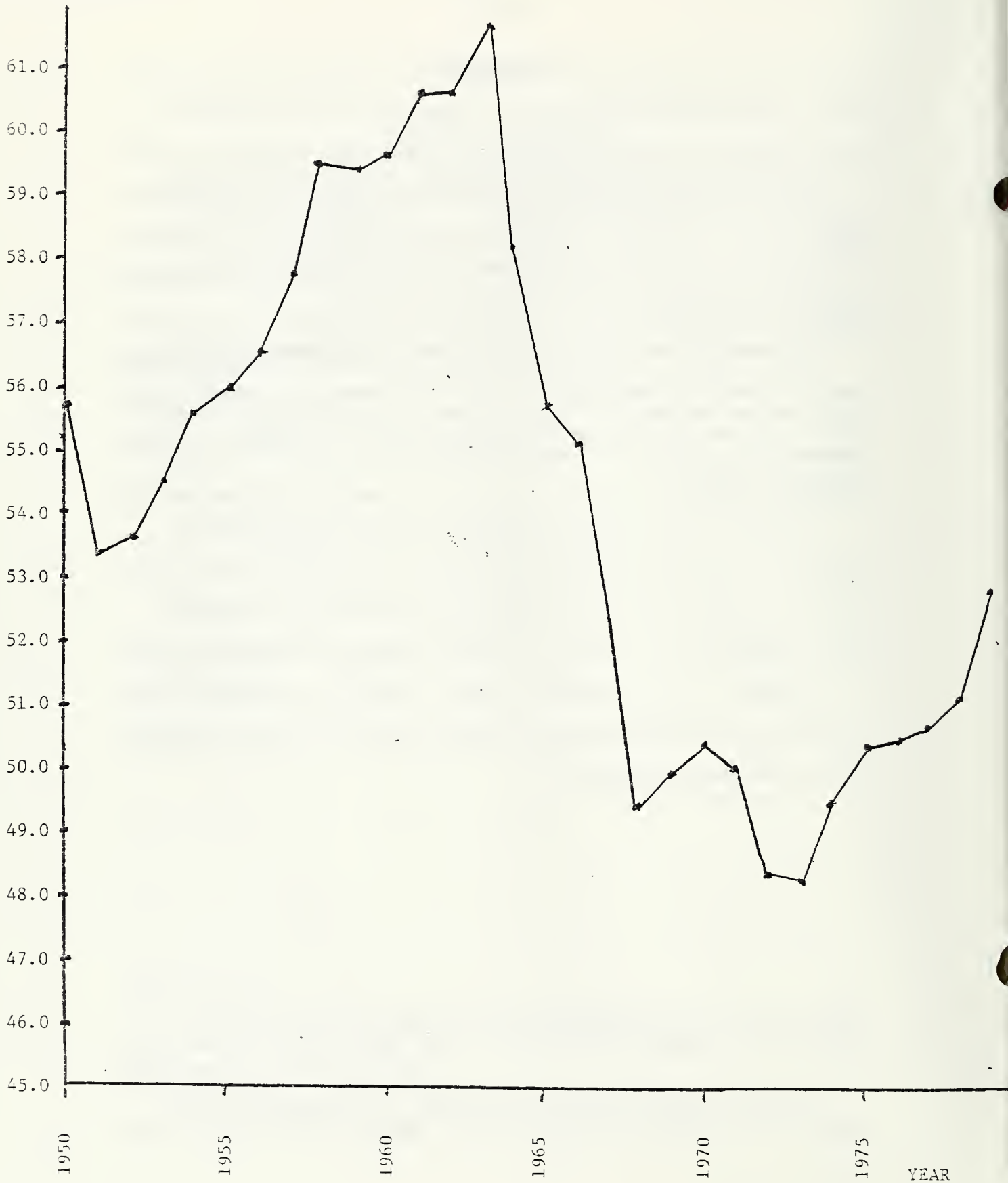
APPENDIX

The Data and Sources

Data for total advertising expenditures, newspaper advertising expenditures, total radio advertising, total television advertising expenditures and total daily newspaper circulation are all from The U.S. Statistical Abstract for the years 1949 through 1980.

The newspaper rate differential is computed by the American Association of Advertising Agencies, Inc. It was necessary to interpolate to obtain a few missing data points not developed by the agency. See the attached raw data.

The DBILL dummy variable for double billing was established by reference to business periodicals where it was determined that a turning point occurred in 1963 with respect to enforcement of Robinson-Patman regulations. At that time, double billing was explicitly ruled to be illegal, but it continues to exist. Moreover, cooperative advertising plans and regulations were carefully modified by many firms when strict enforcement took place.

Rate Differentials
(1950-1979)

Rate Differential

Year	Rate Differential RDIF	Total* Newspaper Advertising	Total* Radio Advertising	Total* TV Advertising	Total** Circulation (newspaper)	DBILL	TREND	Total* Advertising Expenditures
1979	52.9	14493	3385	10195	62.2	1	30	49720
1978	51.1	12707	3052	8979	62.0	1	29	43970
1977	50.6	11132	2634	7612	61.5	1	28	37920
1976	50.5	9910	2330	6721	61.0	1	27	33720
1975	50.3	8442	1980	5263	60.7	1	26	28230
1974	49.5	8001	1837	4851	61.9	1	25	26780
1973	48.2	7595	1448	4460	63.1	1	24	25080
1972	48.3	6960	1530	4110	62.5	1	23	23060
1971	50.0	6215	1380	3520	62.2	1	22	20500
1970	50.4	5745	1308	3596	62.1	1	21	19600
1969	49.9	5753	1264	3585	62.1	1	20	19482
1968	49.4	5265	1190	3231	62.5	1	19	18127
1967	52.3	4942	1032	2909	61.6	1	18	16866
1966	55.2	4895	1010	2824	61.4	1	17	16670
1965	55.7	4457	917	2515	60.4	1	16	15255
1964	58.1	4148	846	2289	60.4	1	15	14155
1963	61.7	3804	789	2032	58.9	0	14	13107
1962	60.6	3681	736	1897	59.8	0	13	12381
1961	60.6	3623	683	1691	59.3	0	12	11845
1960	59.5	3703	692	1590	58.9	0	11	11932
1959	59.4	3546	656	1494	58.3	0	10	11255
1958	59.5	3193	616	1354	57.6	0	9	10302
1957	57.7	3283	618	1265	58.0	0	8	10311
1956	56.5	3236	567	1207	57.3	0	7	9905
1955	55.9	3088	545	1025	56.1	0	6	9194
1954	55.6	2695	559	809	55.1	0	5	8164
1953	54.5	2645	629	606	54.5	0	4	7809
1952	51.6	2473	624	454	54.0	0	3	7156
1951	53.4	2258	606	332	54.0	0	2	6426
1950	55.7	2076	605	171	53.8	0	1	5710

Sources: Rate Differential data are from the American Association of Advertising Agencies, Inc.
Other data from the U.S. Statistical Abstracts

*in million dollars
**in million issues
Rate differential for 1967 and 1969 have not been compiled. Data used for these years were inter-
polated by arithmetic averages of the years immediately preceeding and following.

Transformed Data--Regression Analysis
(Not logged)

Year	Newspaper Advertising Total Advertising	TV Advertising Total Advertising	Radio Advertising Total Advertising
1950	36.36%	2.99%	10.60%
1951	35.14	5.17	9.43
1952	34.56	6.34	8.72
1953	33.87	7.76	8.05
1954	33.01	9.91	6.85
1955	33.59	11.15	5.93
1956	32.67	12.19	5.72
1957	31.84	12.27	5.99
1958	30.99	13.14	5.98
1959	31.51	13.27	5.83
1960	31.03	13.33	5.80
1961	30.59	14.28	5.77
1962	29.73	15.32	5.94
1963	29.02	15.50	6.02
1964	29.30	16.17	5.98
1965	29.22	16.49	6.01
1966	29.36	16.94	6.06
1967	29.30	17.25	6.12
1968	29.05	17.82	6.56
1969	29.53	18.40	6.49
1970	29.31	18.35	6.67
1971	30.32	17.17	6.73
1972	30.18	17.82	6.63
1973	30.28	17.78	5.77
1974	29.88	18.11	6.86
1975	29.90	18.64	7.01
1976	29.39	19.93	6.91
1977	29.36	20.07	6.95
1978	28.90	20.42	6.94
1979	29.15	20.50	6.81