These results, moreover, provide additional evidence of the stability of the coefficients for these two advertising variables. They also point to the joint significance of technical barriers to entry and of concentration, but the collinearity among these variables prevents precise measurement of the separate effects of each of these variables.

THE PROBLEM OF CAUSALITY

We have found that the inter-industry variation in profit rates can be explained quite well by a model incorporating the rate of growth of demand, some measure of advertising intensity, and variables reflecting the importance of concentration and technical barriers to entry. The relationship between profits and either of the advertising variables introduced into the equations is quite robust. Throughout this paper, we have assumed that the direction of causality is from the independent variables to profit rates. Could the reverse be the case?

A plausible case can be made that a significant feedback exists from profits to advertising expenditures, since advertising reflects the discretionary behavior of firms as well as the extent of product differentiation. Indeed, we should not be surprised if a time-series analysis, which emphasizes short-run effects, revealed that changes in profits preceded, rather than followed, changes in advertising expenditures.

There are a number of factors, however, which suggest that the causality of the observed relationships runs largely from advertising expenditures to profits. A cross-sectional study tends to emphasize the long-run differences between industries, and this in turn is more likely to reflect the structural rather than the behavioral aspects of advertising. Profit levels cannot influence those market and product characteristics which permit product differentiation via advertising. Firms with high profit rates will not have higher *optimum* advertising expenditures than firms with low profit rates in the same market situation. The pursuit of profits will hence limit the extent to which profits will be "spent" on advertising, especially over a period of several years.

TABLE 10.—*Weighted regressions with high advertising barrier*

	Intercept	High advertising barrier	Capital requirements (logs)	Economies of scale (logs)	Growth of demand (logs)	Concentration ratio	Regional industry dummy variable	R^2	Corrected R^2
(1) a. All industries	0.052	**0.035 (2.9)	**0.0080 (2.5)	----------	0.012 (1.5)	----------	*0.027 (1.9)	**0.78	**0.75
b. Motor vehicles excluded	0.055	**0.032 (2.7)	*0.0064 (1.8)	----------	0.012 (1.5)	----------	0.025 (1.7)	**0.65	**0.59
(2) a. All industries	0.090	**0.037 (3.1)	0.0034 (1.0)	*0.0073 (1.7)	0.013 (1.6)	----------	----------	**0.78	**0.75
b. Motor vehicles excluded	0.097	**0.032 (2.7)	0.0010 (0.3)	*0.0080* (1.9)	*0.014 (1.8)	----------	----------	**0.65	**0.60
(3) a. All industries	0.053	**0.035 (2.9)	0.0093 (1.6)	----------	0.011 (1.3)	−0.00010 (0.3)	*0.028 (1.9)	**0.78	**0.75
b. Motor vehicles excluded	0.057	**0.031 (2.4)	0.0085 (1.5)	----------	0.011 (1.3)	−0.00016 (0.4)	*0.027 (1.8)	**0.65	**0.58

*Indicates coefficient is statistically significant at the 95-percent level.
**Indicates coefficient is statistically significant at the 99-percent level.

Figures in parentheses are t values.

In addition, if high profits lead to high advertising expenditures, we should expect that industries which have high profits for reasons other than product differentiation (e.g., concentration or technical entry barriers) would tend to have high advertising expenditures as well. Yet, as we noted above, advertising is only weakly correlated with the other dimensions of market structure.

CONCLUDING COMMENTS

On the basis of these empirical findings, it is evident that for industries where products are differentiable, investment in advertising is a highly profitable activity. Industries with high advertising outlays earn, on average at a profit rate which exceeds that of other industries by nearly four percentage points. This