

Interpreting Rising Concentration: The Case of Beer*

I. Introduction

Despite considerable long-term progress in distinguishing conceptually between the fact of market power and the calculation of market concentration,¹ antitrust claimants—the Department of Justice, the Federal Trade Commission (FTC), and private litigants—continue to place substantial emphasis on defining a “market,” computing market shares, and calculating measures of concentration. The operating supposition is virtually always that monopoly or market power is positively associated with concentration. Whether other, offsetting characteristics are also associated with high concentration ordinarily receives less, if any, consideration.

The most often-cited consideration weighing against an automatic condemnation of increased concentration (say, through horizontal merger) is that costs, market power, and concentration may all be jointly related. Economic analysis suggests that if higher concentration brings with it (is caused by or causes) lower industry costs, then it may also bring positive total benefits even if

Antitrust concern with industry concentration focuses on market power—the ability of firms to restrict output and raise price. The brewing industry, among others, has been a major target of this concern because of its high and rising concentration. This paper sketches two alternative explanations for this change in industry structure: competitive expansion by the more efficient brewers and anticompetitive exclusion of equally efficient but smaller brewers. Empirical analysis indicates that competition is the better hypothesis in explaining changes in the structure of the beer market.

* I thank Robert S. Weinberg for helpful insights into the brewing industry, Sam Peltzman and a referee for thoughtful comments on an earlier draft, and Sarah Lamphere and Laurence Levin for excellent research assistance. Errors and omissions are my responsibility alone.

1. The pertinent literature includes Stigler (1964), Brozen (1970, 1981), Kwoka (1979), Landes and Posner (1981), and Weston (1982).

(*Journal of Business*, 1984, vol. 57, no. 1, pt. 1)

© 1984 by The University of Chicago. All rights reserved.
0021-9398/84/5701-0001\$01.50

price is somewhat higher as a result; the gains to producers might outweigh the costs to consumers (Williamson 1968). If the associated cost reduction is great enough, consumers as well as producers may benefit by such a change in market structure. That is, if cost changes dominate in explaining rising concentration, consumers benefit; if collusion effects dominate, they do not.²

This prospect punctures any general presumption favoring the wholesale deconcentration of industry. To the extent that mergers are a means to spread cost reduction more rapidly throughout an industry than *de novo* expansion would permit, it also undermines the general case for prohibiting horizontal mergers. But undermining the general case is not the same as disproving every case; it is not impossible, in principle, that some mergers would produce too much concentration, and save too little cost, to be beneficial to the industry's customers. It is presumably this possibility that provides the rationale for case-by-case scrutiny of proposed mergers by the Department of Justice and the FTC.

A number of relatively recent proposed horizontal mergers have in fact been prevented by this scrutiny (often aided or superseded by complaints from the competitors of willing merger partners or by the management of the "target" firm where merger is attempted through a tender offer). Recent examples of frustrated merger have occurred in, for example, airframes, retailing, gasoline, and beer.³ The general theme, adjusted in each instance to fit the circumstances, has been that concentration is undesirable, that the proposed merger would increase concentration, and that offsetting cost savings or other efficiencies could not be proved obviously.

The beer industry provides a particularly interesting example, because the growth in its concentration has been both substantial and persistent.⁴ In 1960 there were over 150 brewers in the United States. In 1980 there were about 40, and the largest five accounted for about 75% of total domestic production. It is also in some respects a difficult industry to analyze conventionally. For one thing, beer is not a strictly homogeneous commodity (Greer 1971, 1981); the trade press recog-

2. Peltzman's comprehensive study (1977) found that, on balance, rising concentration was in fact accompanied by lower costs, lower prices, and higher profits. While finding some evidence of more collusion at higher levels of concentration, it indicates that the cost effects are generally so dominant that the net effect of rising concentration is to reduce price.

3. Respectively, the attempted acquisition by tender offer of Grumman Aircraft by LTV, of Marshall Field by Carter-Hawley-Hale, of Conoco and then Marathon Oil by Mobil Oil (all defeated by target management with the help of the court, in part on antitrust grounds), and the attempted merger of G. Heileman Brewing with Jos. Schlitz Brewing and later with Pabst Brewing (stopped by the Department of Justice, citing in part concern with the growth in market concentration).

4. Economic analyses of the brewing industry include Elzinga (1971, 1973), Greer (1971, 1981), Norman (1975), Keithahn (1978), and Ornstein (1981).

nizes, for example, "popular," "premium," and "super-premium" classes of beer, much like (if less obvious in its basis) the gasoline market. And for another, many brewers are regional while others sell throughout the United States (Greer 1971, 1981). The variation in each brewer's share of sales from state to state is substantial and is no doubt dependent in part on the geographic proximity of its (and competitors') brewing plants.

In this analysis I outline two explanations for rising concentration in brewing, each of which has different empirical implications and distinctly different implications for antitrust policy. Those implications are then tested with the available data on the pattern of brewers' sales, with due attention to the problems of regional differences and product variety. I find that recent increases in national concentration in brewing have been beneficial, rather than harmful, to consumers, and that local concentration within "state markets" is irrelevant.

II. Competition and Monopolization in Brewing

Two hypotheses about rivalry in brewing can be advanced to predict growing industry concentration. The first is that it is simply a normal consequence of the competitive process in which some competitors prove more efficient than others. (See McGee 1971; Demsetz 1973; Peltzman 1977.) For a product like beer, effective competition depends on product taste and quality, packaging, and promotion, all in addition to price. Those that deliver a better product—say through lower prices or a taste more people prefer—will grow, and they will do so in part by displacing the sales of less effective brewers. If firm-specific superiority tends to persist over time, concentration of sales toward these firms will grow over time, limited ultimately by any upper bound on efficient firm size.

This evolution will be accelerated if, as is likely the case here, many firms are below the minimum size now required for efficient operation. If the minimum scale required for long-term survival rises, not all firms can grow to optimal scale; some must exit. Ordinarily this will occur gradually, as firm-specific (and brewing-specific) capital is used up and not replaced. Concentration will rise as this capacity reconfiguration takes place. Since the average size of a new brewing *plant* now exceeds the size of some still-operating brewing *firms* (Elzinga 1973, p. 106), it is evident that this process is also part of the competition-concentration growth explanation.

An alternative explanation of rising concentration denies the competitive significance of scale-related economies or of genuine consumer preference for one brewer's beer over another. Rather, the alternative hypothesis is one of exclusion of competitors from the market, with small brewers more vulnerable than large to this form of warfare. The

"classic" tool of exclusion, predatory pricing, does not fit plausibly into this hypothesis. (See McGee 1980; Easterbrook 1981.) The predatory pricing story requires first a period of growing concentration and losses, followed by a recoupment period of stable (or falling) concentration and profits. If this were the explanation for rising concentration, it would imply a predation campaign now over 40 years in duration, with recoupment not yet in sight. This seems rather long for a credible predatory pricing explanation. The fact that the larger brewers were generally profitable while they would have to have been pricing predatorily also fits uncomfortably with that explanation.

Instead, the exclusion hypothesis in beer necessarily turns to the "foreclosure" theme of vertical relations. (Singer 1981, pp. 93-95.) Literal vertical integration is not a part of the explanation; with trivial exceptions, beer producers, wholesalers, and retailers are independent operations. Other restraints may be embedded in the chain of distribution, however. It is common to observe beer wholesalers dealing exclusively in one brewer's product line. At the retail level, "on-premises" sellers (e.g., restaurants, taverns, sports arenas) sometimes sell only one brewer's beer, and even "off-premises" sellers (e.g., supermarkets, liquor stores) limit the number of brands they will handle. Although it is somewhat mechanical to identify this as "exclusion," particularly since exclusive dealing and vertical restraints in general can have procompetitive effect (Telser 1960; Posner 1977, 1981), economists and courts have on occasion found an "unreasonable restraint of trade" in this area.⁵ Suppose that retailers would prefer to handle all brands, but if forced to choose would rather handle only the major brewers' brands than only the minor brewers' brands. Then a concerted boycott threat by major brewers (and their wholesalers)—"If you carry theirs, we won't sell you ours"—might impede smaller brewers' access to the market. At sufficiently high levels of local concentration the threat becomes credible (i.e., dropping the low-share brewers' product is more profitable to retailers than being dropped by the large-share firms), and its implementation raises concentration still further. This, in essence, is the "monopolization by exclusion" hypothesis.

In the competition hypothesis, large brewers tend to gain share by expanding output, thereby lowering price and reducing (though by less than their own expansion) smaller brewers' output. In effect, industry supply expands. In the exclusion hypothesis, the large brewers gain share by blocking small brewers' access to the market. In effect, indus-

5. Antitrust decisions and commentary include *Eastern States Retail Lumber Dealers' Ass'n. v. United States* (1914), *Fashion Originators' Guild of America v. FTC* (1941), *Standard Oil Co. of California v. United States* (1949), *Walker Distributing Co. v. Lucky Lager Brewing Co.* (1963), *Comanor* (1968), *Larner* (1977), and *Katz* (1978).

try supply contracts. Since these two alternative explanations are analytically equivalent to shifts in industry supply (and in opposing directions), they are empirically distinguishable. If competition is the better explanation, an increase in concentration should be associated with a drop in price and an increase in output. If exclusion, price should rise and output should fall.

There are some analytical problems with the price implication when product quality is a dimension of competition, as it is in beer. Suppose that a brewer introduces a packaging innovation—say, aluminum cans which are lighter and chill faster than glass bottles—and that it costs and is priced at a penny more per can but all consumers value the improvement at a nickel a can. By any sensible standard this is a cost reduction (i.e., per unit of value), yet it registers as a rise in price (and output) rather than a fall. (See Peltzman 1979; Scherer 1979.)

Worse yet, an array of product qualities and prices muddies the water even for simple price cuts, with all product qualities held constant. Suppose, to illustrate, that a “premium” beer (say) \$10 per case is reduced to \$9, forcing matching competitive price reductions in other premium beers and a reduction in the price of “popular” beers from (say) \$5 per case to \$4.50. Suppose also that at the old prices 40% of beer consumers drank premium, but at the new prices 60% drink premium. By hypothesis all prices in the market have *fallen*, yet the simple average price paid will have *risen* (from \$7.00 to \$7.20).

Even if detailed average market price data were available, it is apparent that their interpretation would be clouded by ambiguity. No comparable ambiguity hampers the additional empirical implication, quantity. For that reason I test the explanatory hypotheses by seeing whether growth in concentration is accomplished through an expansion or a contraction of output.⁶ If the former, the competition hypothesis prevails; if the latter, exclusion.

III. Methodology

The output data for this study are derived from a detailed compilation of annual beer sales by state, for 38 states over 1974–80.⁷ For each observation, the barrel sales of the state’s major sellers—at least four brewers but usually fewer than eight—are reported by brewer. The rest of the state’s total sales is reported as “all others.” Of the (approximately) 40 U.S. brewers, about 20 do not sell enough beer in any single state to ever rise from the “all others” category. Each of the

6. This is similar to the “output test” proposed in a different context by Posner (1981).

7. The source is *Beer Statistics News* (various issues), which has reported since 1974 shipment figures by brewer for those states in which the regulatory authorities make the data available. Prior years’ data were not compiled at the commencement of the series.

four nationally largest brewers is always reported individually, even though in some states they have relatively low shares.⁸ These data provide total state beer shipments and brewers' "state shares." (I assume in the work below that in each state there are five brewers buried in the "all others" category.) Total domestic beer sales for the 12 largest U.S. brewers, and the total for all U.S. brewers, is available from a different trade source (*Modern Brewery Age*, various issues). This provides brewers' "national shares." There are the basic data on output and market structure used in the analysis.

The objective is to explain state beer consumption (barrels per thousand adults),⁹ which is determined by the level of demand and by local conditions of supply. In abstract reduced form, the model is

$$Q_{jt} = f(Y_{jt}, S_{jt}, \mathbf{X}_{jt}), \quad (1)$$

where Q_{jt} is beer consumption per adult in state j during year t , Y is per capita income (a potential determinant of demand), S is some measure of market or industry structure (explained below), and $\mathbf{X}$ represents other factors of demand and supply that may differ by state (e.g., excise taxes) and that may evolve over time (e.g., the supply of wine).

The degree to which each state is supplied by large rather than small brewers is the primary focus. For the efficiency hypothesis, the relevant brewer size is total—that is, national—size and is measured as the brewer's share of the national market. This can be computed exactly for the top 12 brewers; the remaining (approximately) 28 are assumed to have equal shares. For each state, each brewer has a particular local sales share, not in general equal to its national share. With this, I compute what amounts to a combined state-national Herfindahl index as

$$\text{NHERF}_{jt} = \sum_i (SS_{ijt})(NS_{it}), \quad i = 1, \dots, 40, \quad (2)$$

where NHERF is the national-size related index, SS is the sales share of brewer i in state j during year t , and NS is the brewer's national share.¹⁰ Note that a conventional Herfindahl index may be interpreted as a size-weighted average market share. (See generally Stigler 1968, p. 29.) Analogously, NHERF is the weighted-average *national* share of the *state's* beer sellers. If the competition hypothesis is right, beer shipments to a state will be higher the more predominant are the large (by hypothesis, efficient) brewers in the state.

8. These were Anheuser-Busch, Miller Brewing Co., Jos. Schlitz Brewing Co., and Pabst Brewing Co.

9. Defined as population 21 and over (U.S. Department of Commerce, Bureau of the Census, *Supplementary Reports*, various issues).

10. The five brewers assumed to be comprised under "all others" are each assigned the average national share of the smallest 28 national brewers.

In contrast, an exclusively state-level measure of concentration might well be appropriate for the exclusion hypothesis. The reason is that retailer intimidation from a concerted boycott threat may conceivably be more related to the local (state) concentration of sellers than to their size elsewhere. For a measure of this, a conventional Herfindahl index based on state sales shares is computed as

$$\text{SHERF}_{jt} = \sum_i (SS_{ijt})^2, \quad i = 1, \dots, 40, \quad (3)$$

maintaining the assumption of only five brewers in "all others."¹¹ If the exclusion hypothesis is right, an increase in local concentration should be accompanied by a drop in beer consumption.

Seller concentration affects the conditions of supply, and per capita income has already been mentioned as one of the potential determinants of demand. In lieu of fully specifying all of the other determinants of supply and demand comprised in X , I take two additional steps in the empirical work. One is to add a vector of state-specific dummy variables, ST_j , one variable for each state.¹² The other is to introduce a linear time trend variable, $TIME_t$, which is numerically equal to the calendar year minus 1974 and which is entered interactively with the state dummy variables as $TIME_t \times (ST_j)$. Adding ST_j automatically accounts for, though it does not explain, all of the supply and demand factors which vary among states. Adding $TIME_t$ accounts for any systematic trend in any or all of these factors, and interacting it with ST_j permits each state to have its own trend. Therefore the empirical model is given by

$$Q_{jt} = \beta_0 ST_j + \beta_1 TIME_t ST_j + \beta_2 Y_{jt} + \beta_3 \text{SHERF}_{jt} + \epsilon_{jt}, \quad (4)$$

where $NHERF$ and $SHERF$ are the formulations of $HERF$ appropriate to test the competition ($\beta_3 > 0$) and exclusion ($\beta_3 < 0$) hypotheses, respectively.

This formulation raises an issue about the definition of the geographic market. There is no problem with identifying states as individual "islands" of demand, but this does not make a state an economic market. If each state is linked to many other states by common supply, then the minimum extent of the market is a larger region, or the nation. Equation (4), however, implicitly treats states as if they were to some

11. This assumption is not particularly critical. I recomputed $SHERF$ assuming that "all others" comprised 15 brewers, and the results were virtually identical to those reported here. The cross-sectional correlation coefficient between the two measures of $SHERF$ exceeds .99 in every year; in contrast, the coefficient of $NHERF$ and $SHERF$ averages only .39.

12. The model is estimated with 38 states in the sample and 38 state dummy variables and therefore without a common intercept for the equation. In effect, each state has its own intercept, rather than a dummy variable showing its difference from some reference state.

TABLE 1 Regression Estimates of Beer Consumption per Thousand Resident Adults, 38 States, 1974-80

Independent Variables	Coefficient Estimates and <i>t</i> -ratios		
	(1)	(2)	(3)
HERF (national)	1,038.28 (2.47)	...	993.46 (2.05)
HERF (state)	...	314.27 (1.37)	48.81 (.19)
Income per capita	-.0271 (-1.74)	-.0151 (-1.03)	-.0275 (-1.75)
STATE*	1,165.98 (15.94)	1,145.10 (14.85)	1,161.70 (14.88)
TIME × (STATE)*	27.25 (2.37)	28.88 (2.34)	27.99 (2.27)

NOTE.— $N = 259$; $R^2 = .98$.

* Means of 38 coefficients and $|t$ -ratios|.

degree independent of one another. All that this necessarily assumes, even conceding a national market for beer over the long run, is that short-run changes in supply conditions (e.g., NHERF) will evolve sequentially, state by state (or region by region). For example, if expansion by Anheuser-Busch takes place plant by plant, then states in the regions nearest the new plants will feel the effects more strongly and directly than will distant regions. Equation (4) is structured to pick up these localized effects, without in any respect assuming that the state is an economic market.

IV. Empirical Analysis

Three variants of equation (4) are estimated on the 38 states and 7 years for which data are available.¹³ Table 1 reports the results. Estimate 1 offers strong support for the competition hypothesis: Total beer output is higher in those areas where the major brewers direct their supply. Estimate 2 undermines the "local concentration" version of exclusion hypothesis: The coefficient of state sales concentration is statistically insignificant, and its sign is opposite that required to confirm that hypothesis. Estimate 3 attempts to disentangle the separate effects of the two structural characteristics. In this specification the estimate of the output-expanding effect of the larger brewers is virtually unaffected, while local concentration is shown to be essentially irrelevant.

13. Note that $38 \times 7 = 266$, not 259, which is the number of observations. Not all states were reported in *Beer Statistics News* for all years. Note also that extremely high R^2 values are common when cross-sectional dummy variables are included in the specification. In estimate 1, for example, the coefficients of ST, the state intercepts, ranged from 2,154.3 (Nevada) down to 410.8 (Kansas).

TABLE 2 Regression Estimates of Annual Changes in Beer Consumption per Thousand Resident Adults, 38 States, 1975-80

Independent Variables	Coefficient Estimates and <i>t</i> -ratios		
	(1)	(2)	(3)
Δ HERF (national)	1,037.24 (2.50)	...	1,184.94 (2.51)
Δ HERF (state)	...	136.62 (.59)	-171.23 (-.66)
Δ Income per capita	-.0169 (-.90)	-.0048 (-.26)	-.0148 (-.78)
STATE*	19.66 (.86)	20.12 (.85)	17.00 (.77)
R^2	.178	.151	.178

NOTE.— $N = 219$.

* Means of 38 coefficients and $|t$ -ratios|.

As an additional check on the reliability of these findings, I convert both the empirical model and the data to first-difference form¹⁴ and estimate the resulting model

$$\Delta Q_{jt} = \beta_1 \Delta ST_j + \beta_2 \Delta Y_{jt} + \beta_3 \Delta \text{HERF}_{jt} + \eta_{jt}, \quad (5)$$

where $\Delta X_t = X_t - X_{t-1}$ throughout. The results are shown in Table 2. They confirm the conclusion implied by table 1; "invasion" of a state by the large national brewers is accomplished by expanding their own, not interfering with others', supply. Also as before, local concentration has little to do with beer output and, apparently, neither does income. Note finally from the coefficients of ΔST_j and $\Delta \text{TIME}_t \times (\Delta ST_j)$ in table 1, that there is an upward trend in beer output, unrelated to income or market structure. Its level, and those of the explanatory variables, are shown in table 3 for selected years in the sample.¹⁵

These findings can be indirectly corroborated with price data compiled in Keithahn's Federal Trade Commission investigation (Keithahn 1978, p. 96). These data compare over a number of years the average price of the largest brewer (Anheuser-Busch, 1946-70) and largest two brewers (Anheuser-Busch and Schlitz, 1956-70) to the rest of the industry. Over the latter 15-year period the share of the "big two" more than doubled, rising from 13.9% to 30.6% (Keithahn 1978, p. 22). If price were the principal dimension of rivalry, the competition hypothesis implies that the large and growing brewers should have been reducing their prices relative to the rest of the industry. The exclusion explanation, in contrast, implies that the more "dominant" brewers,

14. On differencing to check for potential misspecification see Plosser and Schwert (1978) and Maddala (1977, p. 326).

15. To put this output into perspective, individual consumption of a six-pack of beer per week is equivalent to about 915 barrels per thousand in table 3.

TABLE 3 Variable Means for Selected Years

Variable	Year			
	1974	1976	1978	1980
NHERF	.114 (.031)	.112 (.022)	.145 (.024)	1.161 (.027)
SHERF	.245 (.079)	.225 (.069)	.231 (.051)	.238 (.050)
Adult consumption	1,121 (274)	1,156 (246)	1,224 (243)	1,246 (240)
Income per capita	5,094 (584)	5,910 (662)	7,319 (863)	8,952 (1,107)
Number of states	37	36	37	38

NOTE.—Standard deviation in parentheses. Variables defined in text.

by incapacitating the competing supply of smaller brewers, should have been able to elevate their prices relative to the now disadvantaged sellers. Note that generally rising or falling beer prices are not directly pertinent to this test. Although the average real price of beer fell by 11% from 1960 to 1970 (and another 19% over 1970–80),¹⁶ it is at least arguable that prices might have fallen still further in the absence of exclusionary or anticompetitive conduct by the major brewers.¹⁷

The relevant comparison is reported in figure 1, expressed as the percentage by which the largest, and largest two, brewers' prices differed from the remainder of the industry. That their prices are higher is not surprising; both sold predominantly premium-priced beer, while the rest sold popular-priced beer in substantially greater proportion.¹⁸ Rather, the important finding is a strong trend of extended price reduction by the big two, concomitant with a substantial expansion of their overall market share. While the ambiguities in this context of average price data are not wholly escaped by using firm-specific average prices,¹⁹ those data are clearly more consistent with a competitive than

16. Computed as the U.S. City Average Consumer Price Index for Beer and Ale divided by the U.S. City Average Consumer Price Index for All Items.

17. Similarly, it is a common observation that brewing industry profits are low relative to all manufacturing industries and that over time the profit difference between the largest and smaller brewers has widened. See Keithahn (1978, pp. 10, 43) or Greer (1981, p. 94). Since this is equally consistent with competitive or exclusionary explanations of large brewers' behavior it can hardly serve to distinguish them empirically.

18. Anheuser-Busch sold the "Busch" brand in addition to its premium beer, Budweiser; Schlitz similarly sold "Old Milwaukee" as well as the premium Schlitz brand. Both were relatively small fractions of output over the period in question, although during the late 1970s Old Milwaukee grew substantially relative to the Schlitz brand.

19. See Peltzman (1979) and Scherer's (1979) interchange. The principal problem is that the "rest-of-industry" average price is a composite of premium and popular prices, and to the extent that its composition drifted towards premium the apparent price cutting in fig. 1 is exaggerated. On the other hand, to the extent that other large brewers in the denominator (e.g., Miller, Coors) were also cutting their prices, there is more price reduction over the period than can be detected by an analysis of relative price such as fig. 1.

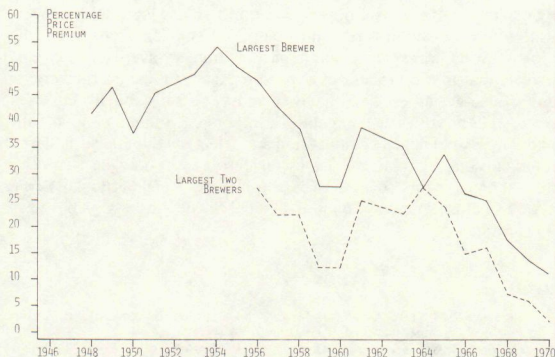


FIG. 1.—Premium of largest brewers' prices over all others' prices

with an exclusionary or anticompetitive explanation of rising concentration in beer. In that respect they both corroborate the results of the concentration-output analysis and extend them to an earlier time period.

V. Conclusions

Growth in industrial concentration, particularly by merger, has attracted hostile attention from the antitrust authorities in many industries, not the least of which has been brewing. (See Ornstein 1981; "Schlitz Drops Plan to Merge into Heileman Day after U.S. Indicates Trust Challenge" 1981; "Heileman Bid to Buy Pabst Brewing Co. Is Opposed by U.S." 1982.) This analysis has suggested two alternative ways in which the observed expansion of large brewers might be explained. One is that it is simply a particular example of ordinary competitive rivalry, which on balance works to the advantage of consumers. The other is that relatively large brewers in concentrated local markets have power over retailers and use that power to effect a boycott of smaller brewers, thus excluding their products from the market and increasing their own relative size.

These competing hypotheses have opposing empirical implications with respect to the effect of (different) measures of market structure on price and output. In this application average market price data would be suspect, and therefore the appropriate test is an output test. If we apply a predictive model to the available data, the influence of seller market structure is clear. The shift in sales from small to large brewers is accomplished, not by interference with the supply of the small, but

by expansion of supply from the large. Moreover, local sales concentration is irrelevant in determining output. A supplementary test, relying in part on firm-specific and in part on industry-average price data, reveals that in the process of expanding share the larger brewers (in any case, the largest two) have steadily and substantially cut their prices relative to their competition. In context, the data support the hypothesis of beneficial competition and reject the hypothesis of harmful exclusion in explaining rising concentration in brewing.²⁰ On this basis it appears that concern over beer mergers—and particularly concern based on concentration in individual “state markets”—has been unwarranted.²¹

References

- Brozen, Yale. 1970. The antitrust task force deconcentration recommendation. *Journal of Law and Economics* 13 (October): 279–92.
- Brozen, Yale. 1982. *Concentration, Mergers, and Public Policy*. New York: Macmillan.
- Comanor, W. S. 1968. Vertical territorial and customer restrictions: *White Motor* and its aftermath. *Harvard Law Review* 81 (May): 1419–38.
- Demsetz, H. 1973. Industry structure, market rivalry, and public policy. *Journal of Law and Economics* 16 (April): 1–9.
- Easterbrook, F. H. 1981. Predatory strategies and counterstrategies. *University of Chicago Law Review* 48 (Spring): 263–337.
- Eastern States Retail Lumber Dealers' Ass'n. v. United States, 234 U.S. 600 (1914).
- Elzinga, K. E. 1971. The beer industry. In W. Adams (ed.), *The Structure of American Industry*. New York: Macmillan.
- Elzinga, K. E. 1973. The restructuring of the U.S. brewing industry. *Industrial Organization Review* 1:101–14.
- Fashion Originators' Guild of America v. FTC, 312 U.S. 457 (1941).
- Greer, D. F. 1971. Product differentiation and concentration in the brewing industry. *Journal of Industrial Economics* 19 (July): 201–19.
- Greer, D. F. 1981. The causes of concentration in the U.S. brewing industry. *Quarterly Review of Economics and Business* 21 (Winter): 87–106.
- Heileman bid to buy Pabst Brewing Co. is opposed by U.S. 1982. *Wall Street Journal* (June 15), p. 14.
- Katz, B. G. 1978. Territorial exclusivity in the soft drink industry. *Journal of Industrial Economics* 27 (September): 85–96.
- Keithahn, C. F. 1978. The brewing industry. Staff Report of the Bureau of Economics, Federal Trade Commission. Washington: Federal Trade Commission.
- Kwoka, J. E. 1979. The effect of market share distribution on industry performance. *Review of Economics and Statistics* 61 (February): 101–9.
- Landes, W. M., and Posner, R. A. 1981. Market power in antitrust cases. *Harvard Law Review* 94 (March): 937–96.

20. To extrapolate for illustration, suppose that the authorities “deconcentrated” the beer industry so that the structural measure NHERF equaled .020 (the equivalent of 50 equal-sized brewers), rather than its 1980 value of .161. Equation (1) in table 1 predicts that such a move would lower annual output by 146.4 barrels per thousand adults, a drop of 11.7% from actual 1980 levels.

21. Warranted or not, the concern is there: “[O]nce the beer industry becomes highly concentrated, the only way to restore competition is through drastic industrial restructuring, a possibility Professor Scherer raised at a time when the industry was much less concentrated than it is today” (U.S. Congress. Senate Committee on the Judiciary 1978, p. 104) (citation omitted).

- Larner, R. 1977. The economics of territorial restrictions in the soft drink industry. *Antitrust Bulletin* 22 (Spring): 145-56.
- McGee, J. S. 1971. In *Defense of Industrial Concentration*. New York: Praeger.
- McGee, J. S. 1980. Predatory pricing revisited. *Journal of Law and Economics* 23 (October): 289-330.
- Maddala, G. S. 1977. *Econometrics*. New York: McGraw-Hill.
- Norman, D. A. 1975. Structural change and performance in the U.S. brewing industry. Ph.D. dissertation, UCLA.
- Ornstein, S. I. 1981. Antitrust policy and market forces as determinants of industry structure: Case histories of beer and distilled spirits. *Antitrust Bulletin* 26 (Summer): 281-313.
- Peltzman, S. 1977. The gains and losses from industrial concentration. *Journal of Law and Economics* 20 (October): 229-63.
- Peltzman, S. 1979. The causes and consequences of rising industrial concentration: A reply. *Journal of Law and Economics* 22 (April): 209-11.
- Plosser, C. I., and Schwert, G. W. 1978. Money, income, and sunspots: Measuring economic relationships and the effects of differencing. *Journal of Monetary Economics* 4 (November): 637-60.
- Posner, R. A. 1977. The rule of reason and the economic approach: Reflections on the *Sylvania* decision. *University of Chicago Law Review* 45 (Fall): 1-20.
- Posner, R. A. 1981. The next step in the antitrust treatment of restricted distribution: Per se legality. *University of Chicago Law Review* 48 (Winter): 6-26.
- Scherer, F. M. 1979. The causes and consequences of rising industrial concentration. *Journal of Law and Economics* 22 (April): 191-208.
- Schlitz drops plans to merge into Heileman day after U.S. indicates trust challenge. 1981. *Wall Street Journal* (October 23), p. 6.
- Singer, E. M. 1981. *Antitrust Economics and Legal Analysis*. Columbus, Ohio: Grid.
- Standard Oil Co. of California v. United States, 337 U.S. 293 (1949).
- Stigler, G. J. 1964. A theory of oligopoly. *Journal of Political Economy* 72 (February): 44-61.
- Stigler, G. J. 1968. *The Organization of Industry*. Homewood, Ill.: Irwin.
- Telser, L. G. 1960. Why should manufacturers want fair trade? *Journal of Law and Economics* 3 (October): 86-105.
- U. S. Congress. Senate Committee on the Judiciary. 1978. *Hearings before a Subcommittee on Antitrust and Monopoly on Acquisitions and Mergers by Conglomerates of Unrelated Businesses*. 95th Cong., 2d sess. May 12; July 27, 28; September 21. Statement of Willard F. Mueller.
- Walker Distributing Co. v. Lucky Lager Brewing Co., 323 F.2d 1 (9th Cir. 1963).
- Weston, J. F. 1982. Section 7 enforcement: Implementation of outmoded theories. *Antitrust Law Journal* 49 (August): 1411-50.
- Williamson, O. E. 1968. Economics as an antitrust defense: The welfare tradeoffs. *American Economic Review* 58 (March): 18-36.

Copyright of Journal of Business is the property of University of Chicago Press and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.