

Hence, if intra-industry profit variance measures the height of entry barriers, we may expect a positive statistical association between industry variance and average industry profit rates. Thus, it is not surprising that Conrad and Plotkin find some statistical association between intra-industry profit variance and average industry profit rates. Unfortunately, they misinterpreted the significance of their own findings.

The effect of product-differentiation-created intra-industry profit variance on the Conrad-Plotkin analysis is obvious by inspection of specific industries with a high degree of product differentiation. Automobiles, for example, show up as a very "risky" industry in the Conrad-Plotkin study. This is the case because of the wide disparity in profits between the strongest, most entrenched firms and the weakest, marginal ones. For example, during the last five years automobile companies enjoyed average profits as follows: General Motors, 21 percent; Chrysler, 15 percent; Ford, 14 percent; American Motors, 6 percent. During most of the 1950's while Studebaker was in the industry it operated in the red. I think nearly all students of industrial organization will agree with Bain³⁰ that the reason for the high average profit rates in the automobile industry is the high degree of market concentration and the very great barriers confronting potential entrants. Thus, the persistently high average profit rates of the automobile industry are primarily due to the structure of the industry not its risk.

Nor are automobiles the exception. On the contrary, of the industries included by Conrad and Plotkin, eight of the nine with average profit rates exceeding 14 percent were industries characterized by substantial differentiation advantage among even the largest firms, and in each case the most advantaged firms held a substantial and persistent profit advantage over the less advantaged firms.³¹

The drug industry is an especially poor candidate for the explicit assumption of the Conrad-Plotkin model that industries must be homogeneous. There are great product differences among even the 29 drug companies they studied. They produce varying mixes of ethical and proprietary drugs,³² varying proportions of branded and generic drugs, and they enjoy varying degrees of differentiation for their branded drugs. All of these factors, as well as a number of others, result in persistently higher profits for some drug companies than others. American Home Products, for example, not only earned average profits well above all other drug companies, but over the entire period 1954-1966, it had profits higher than every other firm. On the other hand, over the same period, Rexall Drug had the lowest profits among the top eight companies in all but two years, when it was second lowest.

Although a number of factors affect the profit differential among drug companies, the degree of advertising-achieved product differentiation plays a big role. Table 4 classifies the 29 drug companies used in the Conrad and Plotkin study by the volume of their advertising outlays. The five companies with advertising outlays in excess of \$50 million in 1966 enjoyed an average rate of return of 29.2 percent during 1961-1965; those with advertising outlays between \$10 million and \$50 million had an average rate of return of 19.7 percent; and those spending less than \$10 million earned 17.3 percent. Significantly, all of the top 5 advertisers earned in excess of the average return of those spending between \$10 million and \$50 million.³³

The preceding reveals that much of the profit variance which Conrad and Plotkin found among leading drug companies is the result of the product differentiation advantage held by some firms in the industry.

If we are correct in believing that differences in intra-industry profit variance actually measures differences in the degree of product differentiation rather than risk, then Conrad and Plotkin's correlation results may have been heavily influenced by the inclusion of highly differentiated industries. We now turn to an examination of this possibility.

³⁰ *Ibid.*, p. 169.

³¹ The industries are: radio-TV broadcasters, book publishing, drugs, cosmetics, automobiles, radio-TV manufacturers, confectionary and soft drinks.

³² It is generally recognized that profits are more stable for highly differentiated proprietary drugs than for ethical drugs. See, for example, James Bolog, "Forecasting Drug Earnings," *Financial Analysts Journal*, July-August 1966, p. 39.

³³ Some companies below the top five earn persistently high profits because they enjoy a strong position in one or two products. Smith, Kline and French has consistently earned high profits, in recent years averaging over 30 percent. Its two specialty items are Thorazine and Compazine, made and sold under license from Rhone-Paulenc of France. Schifrin, *op. cit.*, p. 911.