

Management, it is our contention, forms its risk expectations not solely on the past profit history, of its own company, but also on the diversity of histories that other companies undertaking similar ventures, to use the term again, other companies within its industry undertake.

Would you comment on that, please?

Dr. MUELLER. Well, I think that is essentially true, that they would look at the experience in their industry. And applying that to drugs, they would find that if they were going to go into the industry at the level of success of the leading concerns, that the profit experience is very good. On the other hand, they would look at the profit experience of the generic producer, say, who does not sell the differentiated product, does not have a monopolistic product due to a patent, say, and the profit experience would demonstrate a very poor prospect. So, one must understand what it is he is looking at. And they have in their measure tried to capture the risk factor by looking at the difference in the profit rates of the leading 29 companies. If they had taken the top eight companies, for example, the profit variance would be considerably less. In some other industries they have as few as five companies. So, it turns out, that their measure is very arbitrary.

It is true that Conrad and Plotkin have found a statistically significant relationship between their measure of risk and industry profits. It is statistically significant in the sense that the correlations that they came up with could not have been due simply to chance. And in this sense it is significant statistically. This does not imply that there is necessarily a causal relationship between the two variables they were measuring. In truth, they have misinterpreted the causal factors responsible for their statistical relationship.

Upon close analysis, the Conrad-Plotkin measure of risk turns out to be a better proxy of relative market power than of risk. Their measure assumes the existence of "homogeneous" industries; that is, "industries in which all the firms product similar products, compete in the same markets, and, in general, face the same elements of risk and uncertainty." In fact, however, when broad industry definitions are used, such as those in the Conrad and Plotkin study, the constituent firms within each "industry" are frequently highly differentiated from one another by a variety of factors. Hence, each firm in the industry may face different risks and other factors having a bearing on profits. This is particularly true in consumer, service, and other so-called differentiated product industries. Because of advertising and other factors, some firms in such industries have a pronounced and persistent advantage over others. As a result, the most advantaged firms earn persistently higher profits than the less advantaged firms. Such a difference between the profits of the most advantaged and least advantaged firms in an industry may provide a rough measure of the height of the entry barriers into the industry. Economic theory predicts and empirical analysis verifies that the higher an industry's entry barriers, the higher its profits. 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.