

expected returns and expected risks is struck. However, this is not meant to suggest that the only or best source of information about risk expectation by entrepreneurs is historical statistics developed on a company by company basis. Surely management forms its risk expectations on the basis of experience; but not solely on the experience of its own firm. Likewise, entrepreneurs considering entry into an industry will assess the general riskiness of the industry by examining the range of corporations active (or previously active) in that industry. It is therefore, not unreasonable to seek a measure of *expected* risks based on historical industrial experiences.

It is our contention that returns among industry groups cannot be compared unless one has a measure of industry risks. The logic of our model of inter-industry risk/return comparisons follows from our beliefs about the inherent forces which create risky or uncertain situations within individual industries and, consequently, within companies.

For the concept of an "industry" to have any validity in risk/return comparisons it must be demonstrated that there exists sufficient similarities among various companies so that they may be meaningfully divided in industry groupings.

A listing of the various phenomenon that might contribute to inter-industry difference in basic riskiness would certainly include the following:

- (1) Differences in the ease of entry of new firms into the industry or the ease of construction of new capacity in the industry.
- (2) Differences in the income elasticity of demands for the final products of the industry. (This would affect the response of the industry to general, economic activity.)
- (3) Differences in price flexibility in the industry.
- (4) Differences in the stability of major sources of raw materials.
- (5) Differences in storability and durability of products and raw materials.
- (6) Differences in exposure to foreign competition.
- (7) Differences in competition among existing prospective, or potential new products.

Another major cause of differences in inter-industry risk character derives from differences in technological and research and development bases of industries' products. Differences in innovative processes and product obsolescence rates are prime examples.

These considerations and others led us to stratify a number of companies into various industry groups. As will be seen below, our research has indicated that a fairly definite pattern of risk/return relationships does emerge from the industry grouping based on SIC stratification.

The reasoning of our model is as follows:

Assume an investor is seeking to enter an industry, i.e., to set up an economic concern in that industry or reinvest capital in a going concern in that industry, in such items as plant expansion, product development, etc. The investor being reasonably experienced with the economic, financial and production problems of the industry, believes that he can expect to do as well as anyone else operating in that industry. He also knows that he is not omniscient, so that while he hopes *on occasion* to be more far-sighted, imaginative or effective than his competitors, he also knows that he is likely to be outwitted, or to outwit himself, or to run into a number of natural calamities as often as the reverse. His view, in that case, of the risks inherent in operating in the industry probably arise from observing the impact of errors and advantages upon the rates of return of the companies already engaged in the industry. If the impact, on profitability, of some above or below average behavior is severe the risk of entry will be large. If, on the other hand, no reasonably likely error (or action of a competitor) could push him far from the average return he might assume there was low risk. Thus, at least in theory, a concept of risk evolves and as such is subject to statistical testing. (Cf. Cootner and Holland p. 42).

In order to perform these statistical tests it was necessary to construct a quantitative measure of the industry risk (or uncertainty). We selected measures of the dispersion of individual companies' rates of return about their industry's average rate of return for a given year. An industry which is characterized by relatively high dispersion of rates of return presents the prospective investor with much greater uncertainty as to the return he will achieve should he invest in that industry, than does an industry with low dispersion. Because our theory of return is essentially a long-run theory, we averaged over the period studies