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I. INTRODUCTION

Although economists have great interest in the correlation be-
tween risk and profits, few studies have attempted to quantify the
relationship.[2] Consequently, this paper considers the concept of
risk differentials in corporate profit and proposes a model for
measuring them. Using this model, the risk-rate of return relation-
ship was estimated for a sample of firms in various industry groups.
For each industry group, average risk-adjusted rates of return were
also obtained.[3]

Risk is defined as the inability to predict the outcome of a
forthcoming event with complete certainty. Entrepreneurs are viewed

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[2]Examples of the wide and diverse theoretical literature on
risk and profits are Refs. 6, 8, 11, 14, 17, 18, 20, 27, 32, and 34.
Two important empirical studies of risk and rates of return are Refs.
4 and 30. In this paper "risk" will not be distinguished from "un-
certainty." Compare Refs. 4, 6, 9, 11, 18, and 34.

[3]The 88 firms included in the sample were selected from Fortune
magazine's list of the 500 largest industrial firms. Eleven industry
groups were selected, comprising a variety of different types of in-
dustries. Firms in each group were chosen so that both middle-sized,
as well as large, firms would be included.

as making decisions in the face of uncertainty on the basis of prob-
abilistic expectations about future outcomes.[4]   If certainty is a
situation where the entrepreneur's anticipation will assuredly be
fulfilled, then uncertainty can be measured by the likelihood that
the actual outcome will differ from the anticipated outcome.

The foregoing definition accords with economic models of risk
(Refs. 6, 23, 24), and it suggests studying risk by examining distri-
butions of corporate rates of return. Specifically, this approach
intimates that the risk-rate of return relationship can be analyzed
statistically in terms of the relationship between the mean rate of
return and higher moments of the distribution.[5]

II. THE MODEL

Assume that firms maximize not profits, but expected utility,
and let $U(P+W)$ be the firm's utility function.[6]   Utility is a function

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[4] Economic theory contains two approaches to this problem: in
one approach, the decisionmaker balances the various moments of the
probability distribution of potential outcomes on the basis of his
utility function (Refs. 21 and 28), while in the other, the decision-
maker chooses among a set of dated financial claims defined over all
future states-of-the-world (Refs. 13, 14). We adopted the first,
since the data do not justify the more elegant approach.

[5] It is assumed that the present and future sets of profit-
generating opportunities for each firm are determined exogenously.
That is, a firm may select opportunities but cannot influence the
composition of any set of potential investments. Without this assump-
tion, the concept of risk becomes more complex. If firms can influence
the investment-choice set, however, presumably the observed variance
of profits would decrease over time. Thus, concentration on fairly
long periods of time and a large sample of firms should lessen the
likelihood of this possible effect biasing the statistical results.

[6] Here P refers to profits in the sense of increments to net
worth, rather than the profit rate.
   The question of "whose" utility function is moot. There are
various candidates, e.g., managers, stockholders, the chief executive
officer, as well as others (Ref. 10). It is assumed that each entre-
preneur (management) is interested in maximizing the expected utility
of the net worth of the firm on the basis of his judgments about
stockholders' preferences. Such an assumption permits us to explore
the relationship of uncertainty to earnings without having to deal

only of earnings, P (a random variable), and net worth, W. The risk premium, R(P,W), is that amount required to make the entrepreneur indifferent between the expected value of the uncertain earnings, E(P+W), and the certain amount E(P+W)-R(P,W), corresponding to the expected utility of the uncertain earnings (Refs. 8, 26).

Earnings distributions and utility functions are not important per se; it is their interaction that determines the risk component of profits. Suppose that both the probability distribution of potential earnings and the firm's utility function are known (illustrated in Fig. 1(b) for a risk-averse firm).[7] Assume the probability distribution is curve (1). Both the probability distribution of utility, shown as (1) in (a), and its expected value, $E(U_1)$ are easily derived. Note that, although the probability distribution of earnings is symmetric about the expected value, E(P), the distribution of utilities is skewed to the left. This occurs because the utility function is concave, resulting in a non-linear transformation from earnings into utility. The expected value of the utility distribution, $E(U_1)$, is less than the utility of expected earnings, U(E(P+W)), and the difference, translated into monetary terms, is the risk premium E(P)-P*.

Now suppose that the probability distribution is not curve (1) but curve (2). This distribution is also symmetric about the mean, but the variance is larger. The distribution of utilities is curve (2) in (a) and, as before, it is not symmetric about its mean, $E(U_2)$. The important point, however, is that the expected utility has decreased as a result of the increased dispersion of the earnings distribution. As a result, the risk premium, $E(P)-\hat{P} > (E(P)-P*)$. Consequently, greater variance in the distribution of earnings implies greater risk and, for risk-averse firms, leads to larger risk premiums.

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with the complexities of adding stockholders' utility functions, or the Modigliani-Miller view that stockholders can lever portfolios to offset corporate management decisions about risk (Refs. 22 24. See also Ref. 6).

[7] If the firm is averse toward risk, the utility function is concave. This requires that U' > 0 and U" < 0, or that utility increase with earnings and net worth, but at a decreasing rate.
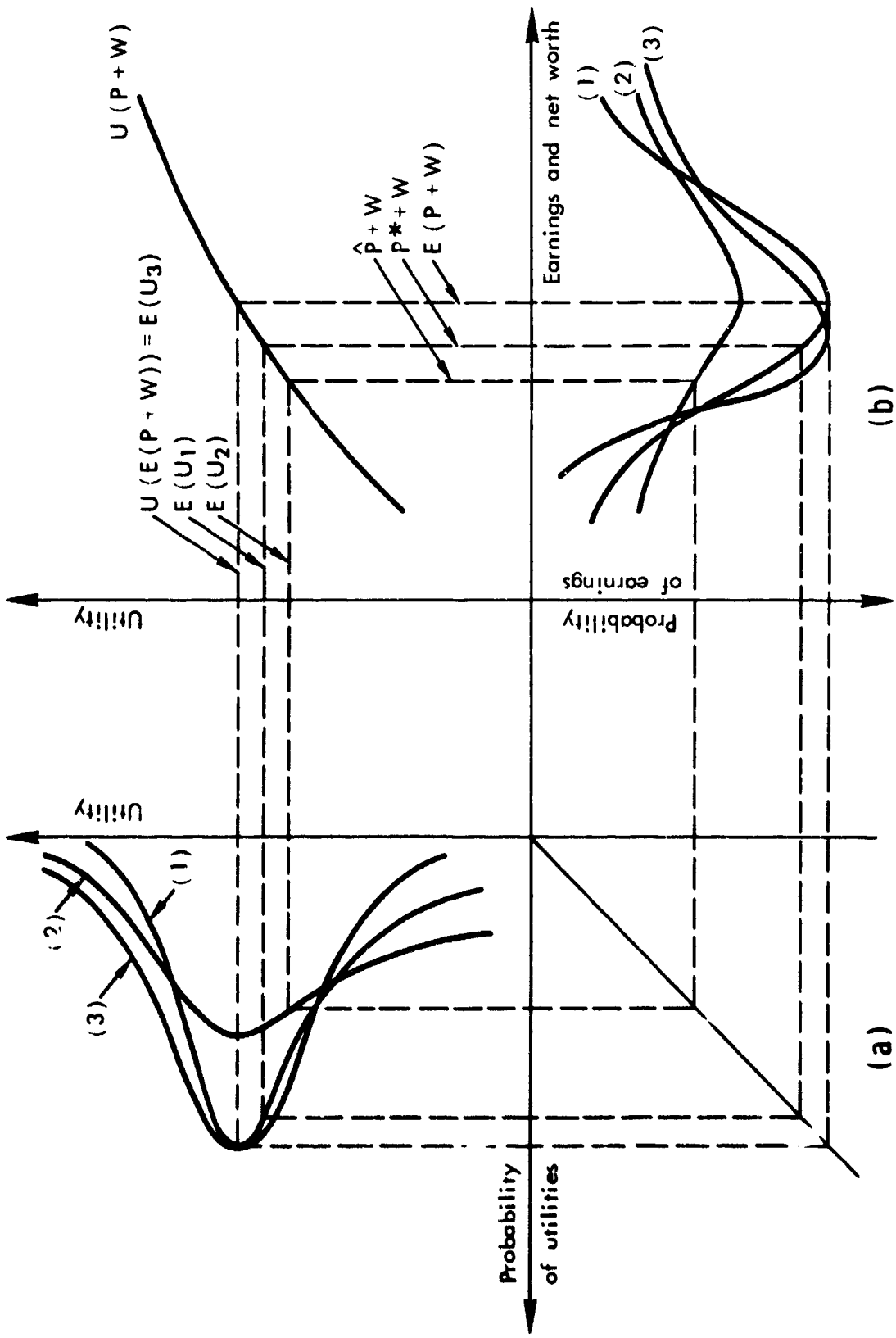
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Fig.1—Effect of dispersion and skewness on risk premium

This implies that earnings should be larger, on average, for firms
with greater variation in their earnings than for firms with little
earnings variability.

Skewness may also have an important effect on the risk premium
(Refs. 3, 12, 31). The entrepreneur may prefer positively-skewed
earnings distributions because the likelihood of extremely low earnings
is smaller. This, also, is illustrated in Fig. 1. Curve (3) in (b)
has the same expected value as (1) and (2), but is skewed to the right.
This function has been constructed so that the resulting distribution
of utilities is symmetric about its expected value. In this example,
skewness offsets variance and the risk premium is zero, i.e., $E(U_3)$ =
$U(E(P+W))$. Thus, positive skewness results in smaller risk exposure,
while negative skewness leads to greater risk exposure, implying that
earnings should be smaller, on average, for firms with earnings dis-
tributions positively skewed but larger, on average, for firms with
negatively-skewed distributions.

The results of Fig. 1 suggest that once the form of the utility
function is specified, risk exposure can be measured by characteristics
of the probability distribution of earnings. The required risk premium
becomes larger as the spread of the earnings distribution increases,
but the premium decreases as the distribution becomes positively
skewed.[8] This illustrates that risk exposure, as defined here, can
be measured by characteristics of the firm's earnings distribution.

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[8]This can be demonstrated formally in the following manner:
Expand $U(P+W)$ in a Taylor series about the point $(\hat{P}+W) = E(P+W)$,

$$U(P+W) = U(\hat{P}+W) + U'(\hat{P}+W)(P-\hat{P}) + \frac{U''(\hat{P}+W)}{2!}(P-\hat{P}) + \frac{U'''(\hat{P}+W)}{3!}(P-\hat{P} + \ldots$$

Taking expected values and holding W, $\hat{P}$ constant,

$$E(U(P+W)) = U(\hat{P}+W) + \sigma_P^2 \frac{U''(\hat{P}+W)}{2!} + \sigma_P^3 \frac{U'''(\hat{P}+W)}{3!} + \ldots\ldots$$

Rearranging terms, the difference between expected utility and utility
of expected earnings is,

$$U(P+W) - E(U(\hat{P}+W)) = -(\sigma_P^2 \frac{U''(\hat{P}+W)}{2!} + \sigma_P^3 \frac{U'''(\hat{P}+W)}{3!} + \ldots\ldots)$$

Equation (3) is the risk premium, $R(P,W)$, and it becomes apparent
that the second, third and higher moments may affect the magnitude of

Before testing this hypothesis, one link in the discussion of the relationship between risk and earnings remains to be completed -- that of the mechanism by which entrepreneurial preferences for risk and profits are translated into industry profit differentials or risk premiums and discounts.

Conventional economic theory indicates that with well-functioning capital markets the equilibrium rate of return will be identical among all activities. Entrepreneurs theoretically seek those investments yielding the largest rates of return. As capital is withdrawn from less profitable activities, the rates of return in such activities rise. Similarly, the inflow of capital into higher-yield investments forces the rates of return in these activities downward. Equilibrium occurs when the rates of return on investment are identical among all activities.

When risk is considered, the adjustment process is more complex. Because differences in risk exposure exist among alternative investments, entrepreneurs balance risk against expected rates of return. Capital, therefore, is transferred from low-return, high risk activities to high-return, low risk investments until an equilibrium, characterized by a set of risk premiums reflecting differences in risk exposure, is achieved. In this equilibrium, risk-compensated rates of return are equal among alternative investments, but observed or actual rates of return will differ by the amount of the risk premiums.

In short, we posit that capital markets respond to risk as they respond to expected rates of return. We should, therefore, expect to find a structure of risk-compensated rates of return that motivate or discourage investment. Part of the earnings differentials observed

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the risk premium. Since $U'' < 0$ for a concave utility function, the risk premium must increase with larger variances. (The appropriate revisions for risk-neutrality or risk-preference should be apparent.) It is not, however, clear whether $U''' \gtreqless 0$. If we assume that firms enjoy positive skewness (longshots), $U''' > 0$ and the risk premium becomes smaller as skewness increases. Higher moments add little information about the characteristics of the distribution and are ignored (see Ref. 3, 26).

among alternative investments can be attributed to risk; these are the risk premiums that compensate for differences in risk exposure.

III. EMPIRICAL RESULTS

To test the hypothesis that profits are larger for firms with greater risk exposure, it is necessary to translate the theoretical definition of risk into statistical terms.[9] We can do this by assuming managers' anticipations, on average, are correct, thereby permitting the observed mean rate of return to be used as a proxy (Ref. 4). Risk exposure, as defined here, can then be measured by moments of the distribution of earnings.[10]

The risk variables were calculated from

$$\sigma_i = \left[\sum_{t=1}^{n} \frac{(r_{it} - \hat{r}_{it})^2}{n} \right]^{\frac{1}{2}} \tag{1}$$

and

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[9]The term profit as used here is roughly equivalent to net business income, i.e., the difference between accounting revenues and costs. To adjust for differences in firm size, profit is usually expressed as a percentage of some base. The choice of a profit base is important for some industries. Aerospace profits, for example, when measured as a percentage of assets rather than net worth (Refs. 1, 29) differ substantially in rank compared with other groups. Among the many possible measures (Refs. 2, 15, 33), rate of return on net worth appears the most appropriate for studies of the risk-profit relationship.

[10]The mean may not be an appropriate proxy for managers' anticipations if earnings are serially correlated. In such a case, earnings can be predicted from knowledge of the autoregressive structure so that computing moments about the mean would tend to overstate the firm's risk exposure. To compensate for this possibility, we adjusted each firm's earnings to remove any trend effect and then tested for auto-correlation using the Durbin-Watson statistic (Ref. 5). Evidence of positive serial correlation was found for nine of the firms, and they were removed from the sample.

Following the convention established in Refs. 4 and 30, we used standard deviation, rather than variance, as a measure of dispersion. Also, since we are concerned with the ability of firms to predict profit rates, the rates of return are unweighted.

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$$S_i = \sum_{t=1}^{n} \frac{(r_{it} - \hat{r}_{it})^3}{n\sigma_i^3} \qquad (2)$$

where r_{it} = observed rate of return for firm i in year t;

$\hat{r}_{it}$ = predicted rate of return from trend for firm i, year t;

σ_i = standard deviation of rates of return about trend, firm i;

S_i = skewness about trend for firm i;

and n is the number of years included in the sample.

The model can now be stated explicitly as

$$\bar{r}_i = r_0 + b_1\sigma_i + b_2S_i \qquad (3)$$

where $\bar{r}_i$ = average rate of return on net worth for firm i;

r_0 = intercept; and b_1, b_2 are the coefficients of the standard deviation and skewness, respectively -- the risk coefficients. The signs of these coefficients are expected to be

$$b_1 > 0$$
$$b_2 < 0$$

Estimates of the relationship between average rate of return and risk exposure appear in Table 1. Regressions (1) and (2) show the individual contribution of standard deviation and skewness in explaining variations in firms' average rates of return. Regression (3) combines both effects, accounting for about 15 percent of the observed variation in rates of return. The correlation coefficients are low, but the estimates of b_1 and b_2 are statistically significant at the .01 and .10 levels, respectively. Moreover, the signs of these coefficients agree with the theoretical model. Thus, these results lend support to the hypothesis that rates of return should be larger for firms with greater risk exposure.

Table 1

RELATIONSHIP BETWEEN RISK AND RATE OF RETURN

Regression	Intercept r_0	Standard Deviation b_1	Skewness b_2	R^2	F
(1)	.0923	1.0452 (.3319)		.1141	9.914 (1,77)
(2)	.1488		-.0159 (.0095)	.0350	2.794 (1,77)
(3)	.0969	1.0181 (.3264)	-.0193 (.0099)	.1560	7.024 (2,76)

The value of the intercept, r_0, implies an expected rate of return of 9.7 percent for firms with no risk. This is not a "risk-free" rate of return, however, at least not in the sense that yields on government bonds sometimes are so interpreted. The intercept, r_0, is the result of extrapolating the risk-profit relationship to the axis, and so it is the repository for all influences on profits not encompassed by the standard deviation and skewness coefficients. These implicit influences may contain elements that might be regarded as risk factors. Moreover, since no firm in the sample was without some degree of standard deviation and skewness, a risk-free rate of return cannot be directly observed. For these reasons, r_0 will be referred to as the "risk-adjusted" rate of return; it is the expected profit rate after allowing for the influence of earnings variability.

The low R^2 values indicate that, although there is some relationship between average rates of return and the measures of risk exposure, other factors account for the major part of the observed differences in rates of return. Differences in market structure, technology, managerial ability, capital structure and similar broad industry effects could produce substantial industry earnings differentials.

To account for differences in industry characteristics, dummy variables are introduced into the regression to capture the influence of industry-specific factors. We assume that the relationship between rate of return and the risk variables is not influenced by group

membership; therefore, the risk coefficients remain the same for all firms. Thus, the premium for risk exposure does not reflect other industry characteristics. The relationship becomes

$$\bar{r}_{ij} = C_j + b_1\sigma_{ij} + b_2 S_{ij} \tag{4}$$

where C_j is the intercept for firms in industry j, and all other variables are as previously defined except for the addition of a subscript designating industry membership.

Estimates for b_1, b_2, and C_j appear in Table 2. The estimates for the risk coefficients, b_1 and b_2 are significant at the .01 and .05 levels, respectively, and their signs again agree with expectations. The estimates for C_j are all significant at the .05 level. The inclusion of industry variables considerably improves the explanatory power of the model; nearly half of the variation in observed rates of return is explained by the independent variables.

Table 2

RISK-RATE OF RETURN RELATIONSHIP WITH INDUSTRY EFFECTS

Standard Deviation b_1	Skewness b_2	R^2	Industry Effects			
			C_j	Industry	C_j	Industry
1.0043 (.3648)	-.0153 (.0071)	.4936	.1664	Drugs	.0857	Elec. mch.
			.1335	Aerospace	.0754	Automotive
			.1131	Chemicals	.0724	Off. mch.
			.1026	Petroleum	.0703	Steel
			.1021	Rubber	.0594	Textiles
			.0915	Food		

The C_j estimates are especially interesting. C_j is the jth industry's average rate of return after allowing for the influence of risk on the earnings of each of the firms in that group. In short, C_j is the average risk-adjusted rates of return. Interpreting it in this fashion permits computation of a set of average-risk

premiums. This computation is the difference between the observed
average rate of return for each group and its risk-adjusted rate. See
Table 3 for the estimates.

Average risk premiums vary substantially, suggesting important
differences in risk exposure among industries. The risk premium
accounts for a sizeable part of the observed rate of return in some
groups. For example, the average risk premium for the automotive and
office machine groups is 7.2 and 6.8 percent, respectively. In con-
trast, the average risk premium is only 1.2 percent for steel firms
and .75 percent in the rubber group, indicating that average risk
exposure for firms in these two industries is nominal.

Table 3 also illustrates that adjustment of average industry
earnings to reflect differences in firms' risk exposure narrows inter-
industry earnings differentials. Nonetheless, significant differences
in average risk-adjusted rates of return remain. The risk-adjusted
rates for the drug, aerospace, and chemical groups, for example, are
noticeably larger than for the remaining groups.

Table 3

OBSERVED AND ADJUSTED INDUSTRY RATES OF RETURN
AND AVERAGE INDUSTRY RISK PREMIUMS

Industry Group	Average Observed Rate of Return	Rank	Risk-Adjusted Rate of Return	Rank	Average Risk Premium
Drugs	.1832	1	.1664	1	.0168
Aerospace	.1570	2	.1335	2	.0245
Chemicals	.1409	4	.1131	3	.0278
Petroleum	.1147	7	.1026	4	.0121
Rubber	.1096	8	.1021	5	.0075
Food	.1072	9	.0915	6	.0157
Electrical mch.	.1196	6	.0857	7	.0339
Automotive	.1477	3	.0754	8	.0723
Office mch.	.1408	5	.0724	9	.0684
Steel	.0825	10	.0703	10	.0122
Textiles	.0789	11	.0594	11	.0195

When interpreting these results, it is important to remember
that the model yields risk-comparable rates of return rather than

estimates of "adequate" or "required" profits.[11] The accounting
profits reported on corporate income statements include a variety of
functional returns and nonfunctional rents, and a study of profit-
adequacy should adjust for all such elements. This study has abstracted
one element of accounting profits -- the risk premium -- and has ad-
justed the firm rates of return to make them comparable in this dimen-
sion. Normative judgments on the basis of risk-adjusted profit rates
are therefore hazardous.

IV. AN ALTERNATIVE MEASURE OF RISK

Another measure of risk -- the standard deviation of firms'
average rates of return on an industry-wide average -- was suggested
by Cootner and Holland in their investigation of risk and profits
(Ref. 4). The authors' economic rationale for this approach is quoted
below:

> If we assume that an entrepreneur entering an industry
> is purchasing a proportionate share of the experience of
> every firm in the industry, then it would seem that the
> dispersion of company rates of return around the average
> rate of return for the industry in which they belong is an
> indication of the riskiness of an investment in that indus-
> try. Since the standard deviation of such rates of return
> indicates to an investor the likelihood that he would fare
> differently from the industry average, we would expect that
> if executives were risk-averters, large standard deviations
> would require high average rates of return to attract in-
> vestment.[12]

Assuming that an entering firm cannot identify the factors that
lead to intraindustry earnings differentials, this approach measures
the risk of entering an industry. It is not clear, however, why a
firm already engaged in some industry should be concerned with the

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[11]See Ref. 4 for a concept of risk-comparable profits. References
15, 16, and 19, which consider the appropriateness of the aerospace
rate of return, define profit "adequacy."

[12]See Ref. 4, p. 4.

industry average. The firm's own history would seem a better guide to the future than the overall industry experience. Nonetheless, in order to compare the intraindustry-dispersion approach to risk with the approach used in the previous model, average risk-adjusted rates of return have been computed using the following equation to measure standard deviation:

$$\sigma_j = \left[\frac{\sum_{t=1}^{n} \sum_{i=1}^{m} (r_{it} - R_j)^2}{nm-1} \right]^{\frac{1}{2}} \tag{5}$$

where σ_j = standard deviation of firm rates of return about the industry average, industry j;

R_j = average rate of return on net worth in industry j;

r_{it} = rate of return for firm i during year t;

n = number of years in sample;

m = number of firms in industry j.

The relationship between risk and rate of return becomes

$$R_j = R_0 + b\sigma_j \tag{6}$$

where R_0 = intercept, and b is the marginal effect of intraindustry dispersion on average industry rates of return. Estimates of these terms for the eleven-industry sample are:[13]

$$R_j = 6.979 + 1.084 \ \sigma_j \qquad R^2 = .734 \tag{7}$$
$$(.223)$$

The average risk-adjusted rate of return for each industry, R_j^*, can be computed from

$$R_j^* = R_j - b\sigma_j \tag{8}$$

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[13] Significant at the .01 level.

Table 4 compares these estimates of the average risk-adjusted rates of return with those obtained above using the previous measure of risk exposure. For most industry groups, the risk-adjusted rates of return are not greatly affected by the choice of a measure of risk. Two that differ substantially, however, are the drug and aerospace groups. The intraindustry-dispersion measure results in a risk premium of about 8 percent for both groups. Measuring risk by temporal earnings variability results in risk premiums of 1.6 and 2.5 percent, respectively.

The drug firms in the sample differ substantially in their average rates of return. Consequently, intraindustry dispersion is large. Each drug firm, however, has relatively stable earnings over time so that the standard deviation measurement about each firm's own mean is small. Aerospace firms have earnings that vary substantially both about the industry average and about their own means. Correcting for trend and autocorrelation, however, results in relatively stable earnings for each firm's own mean. Thus, the intraindustry measure of dispersion overstates the risk exposure of firms in both of these industry groups and makes estimates of risk for the constituent firms dependent upon the meaningfulness of the industry groupings.

In short, the two measures of risk exposure yield disparate results for the industry groups with the highest rates of return. The choice of an appropriate measure of risk exposure is crucial for studies of risk-comparable profits.

As a risk measure, intraindustry dispersion presents several problems. For instance, if rates of return for firms in an industry such as drugs differ substantially, an intraindustry dispersion measure will indicate a substantial degree of risk even if each firm's rate of return is stable from year to year. Conceiving risk to be the difficulty in forecasting rates of return, such a method could greatly overstate the inability of existing firms to predict their future profits.

If all firms in an industry produce similar products, compete in the same markets and, in general, face exactly the same demand and supply conditions, the intraindustry dispersion measure is

Table 4

AVERAGE RISK-ADJUSTED RATES OF RETURN AND RISK PREMIUMS[a]

Industry	Risk-Adjusted Rates of Return		Risk Premiums	
	Intra-Industry Dispersion	Firm-Temporal Dispersion	Intra-Industry Dispersion	Firm-Temporal Dispersion
Drugs	.1042	.1664	.0790	.0168
Aerospace	.0772	.1335	.0808	.0245
Chemicals	.0995	.1131	.0414	.0278
Office mch.	.0605	.0724	.0803	.0684
Elec. mch.	.0596	.0857	.0509	.0339
Petroleum	.0898	.1026	.0249	.0121
Rubber	.0791	.1021	.0305	.0075
Food	.0604	.0915	.0468	.0157
Steel	.0566	.0703	.0259	.0122
Textiles	.0487	.0594	.0302	.0195
Automotive	.0619	.0754	.0858	.0723

[a]The firm-temporal dispersion figures include the effects of both skewness and standard deviation of firm's earnings. The intraindustry figures reflect only the effect of standard deviation. While these alternative estimates of risk-adjusted rates of return and risk premiums are not computed the same way, the figures are consistent with the conceptual basis underlying each alternative measure of risk exposure. Moreover, excluding the effect of skewness from the firm-temporal dispersion figures has little effect on the magnitude of the risk-adjusted rates of return or risk premiums.

perfectly appropriate. With broad industry definitions, such as those used in this paper, the constituent firms are usually differentiated -- while each firm shares some common elements of risk with the other firms in its group, its pecularities create some special risk conditions. Treating each industry group as a unit, as the intraindustry dispersion measure does, obscures these firm differences. Computing the standard deviation of profits from the firm's own mean permits the industry-risk effects to be treated separately as a residual after accounting for the elements of risk peculiar to each firm in the group.

In sum, the firm-temporal dispersion measure described in Sec. II appears to have a sounder theoretical base than the intraindustry approach to risk exposure. Nonetheless, it should be noted that the concept of risk differs somewhat between the two measures. The latter is directed toward measuring the risk of entry into an industry, while

the former treats risk more generally in terms of the uncertainty of
forecasting future rates of return.

V. CONCLUSIONS

Perhaps the most important conclusion is implicit. With some
reasonable assumptions, significant and instructive measurements of
the relationship between risk and the rate of return can be obtained.
The model described in this paper permits characteristics of earnings
distributions to be used in evaluating risk exposure and its influence
on profits. Application of the model to a sample of firms indicates
that mean rates of return are importantly affected by risk exposure
as defined here. Firms with large standard deviations have higher
mean profit rates, while firms with positively skewed distributions
have lower profit rates. The latter are apparently risk-averse and
like the chance of "long-shots."

Another conclusion, relating to the method of computing measures
of risk exposure, emerges. The firm-temporal-dispersion measure
appears to have a sounder theoretical rationale than the alternative
intraindustry-dispersion measure. A choice between these measures
attains considerable importance, as they yield widely different re-
sults for the industry groups with the two highest average profit
rates -- drugs and aerospace. Selection is influenced by the under-
lying concept of risk; the intraindustry dispersion approach relates
to the risk of entry, while a more general concept of risk seems more
appropriate for analysis of the influence of risk on corporate rates
of return. For many industry groups, adjusting nominal profit rates
for risk exposure results in considerably lower risk-adjusted profit
rates. This is not true, however, of the drug and aerospace groups.
Their risk premiums are very low, and they also have the highest
risk-adjusted rates of return. The explanation for such profit
patterns, therefore, must be sought in factors other than risk.

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