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MULTINATIONALS' DIVERSIFICATION AND THE RISK-RETURN TRADE-OFF

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This paper advances a theoretical rationale to explain Bowman's paradox (1980) that firms with high returns can have low risk. Here we draw on the rich body of international management research and argue that global market diversification, which provides firms with three distinct options and opportunities over domestic firms, can explain the high return-low risk profile. We also argue that no strong theoretical rationale exists in support of either related or unrelated product diversification generating such a favorable risk-return profile. By integrating both the product and the global market dimension of diversification into our analyses and by controlling for the industry effect, this paper sheds new light on the relationship between corporate diversification and the risk-return tradeoff. The results of this research, which are based on the diversification experiences of 125 multinationals, reveal the strikingly important, though so far overlooked, role that global market diversification plays in the joint management of corporate risk and return. Global market diversification here reflects both the multiplicity of international market areas in which a firm operates and the distribution pattern of a firm's industries across these multiple areas.

Despite economic and financial theory associating high returns with high risk, Bowman (1980) has shown that firms with high returns can have low risk. For researchers and practitioners in strategic management, this finding has raised a critical question: what strategic posture of a firm can achieve this high return low-risk profile? In the hope of answering this question, a growing body of studies headed by Bettis and Hall (1982) and Bettis and Mahajan (1985) have examined the risk-return trade-off behavior of diversified firms.

While these studies have added value to the literature by addressing the issue of the joint management of risk-return performance of diversified firms, these studies did not develop a theoretical rationale to explain 'Bowman's paradox.' Moreover, the results of this research effort remain confusing. To illustrate, while some studies (e.g., Bettis and Mahajan, 1985) suggest that firms with certain diversification postures can reduce risk and increase return simultaneously, others (e.g., Amit and Livnat, 1988) argue that a risk-return trade-off exists irrespective of firms' diversification postures.

The purpose of this paper is to advance a theoretical rationale to explain Bowman's para-

dox. Only through theoretical framing can research on the risk-return trade-off go beyond oscillating statistical results to provide a meaningful understanding of Bowman's paradox. Drawing on the rich body of international management research (e.g., Kogut, 1983; Porter, 1986; Ghoshal, 1987; Hamel and Prahalad, 1985; Kim and Mauborgne, 1988), here we argue that global market diversification, which provides firms with three distinct options and opportunities over domestic firms, can explain the high return-low risk profile. We also argue that no strong theoretical rational exists in support of either related or unrelated product diversification resulting in such a favorable risk-return profile.

For this purpose, we draw on two major refinements in diversification research not yet incorporated in the previous research on this stream. One is the recent development of a broader diversification concept which integrates both the product and the international market dimension of diversification (e.g., Kim, 1989). The other is the removal of industry effects in assessing the corporate profit performance impact of diversification (e.g., Chang and Thomas, 1989; Rumelt, 1982).

These refinements are of particular relevance in light of Bowman's two observations: (1) that the paradox of negative correlation between return and risk may be explained by interfirm variance in global market diversification, thereby lending support to the theoretical rationale put forth in this paper; and (2) that this negative correlation may be reduced to noncorrelation when firms' industry membership is ignored. Caught, however, in a tradition of looking at the product dimension only and ignoring industry membership, previous strategic management research on the risk-return trade-off has not fully benefited from Bowman's observations; the current research, to the contrary, will.

LITERATURE REVIEW

Global market diversification and the risk-return trade-off

To date, no study has examined the effect of global market diversification on the risk-return trade-off. We argue here that global market diversification may well provide a way to simultaneously increase returns and reduce risk,

thereby explaining Bowman's paradox. Our theoretical reasoning here is traceable to the rich and growing body of international management literature.

International management literature recognizes three unique *opportunities* attached to global market participation; these opportunities can be reasoned to lead to improved return performance. First, global market diversification offers possibilities for exploitation of economies of scale and scope above and beyond the potential of product diversification (Grant, Jammine, and Thomas, 1988). Second, the diversity of national markets exposes firms to multiple stimuli which provides firms with a broader learning opportunity and the ability to develop more diverse capabilities than are available to purely domestic firms. As a result, global market diversification fosters innovation and heightens the probability that firms will prosper in a dynamic environment (e.g., Kogut, 1983; Ghoshal, 1987). Third, different nations have different factor endowments which, in the absence of efficient markets, lead to intercountry differences in factor costs. Global market diversification allows firms to gain cost advantages by configuring their value-added chain in such a way that each link is located in the country which has the least cost for that link (Kogut, 1985a). Global market diversification thus provides firms with unique opportunities to increase returns by *spreading its activities* across multiple global market areas, rather than by choosing higher risk activities.

At the same time, global market diversification endows firms with three unique *options* over domestic firms which are reasoned to reduce the level of corporate risk. First, global market diversification provides a firm with multiple national market bases from which it can retaliate against aggressive moves made by competitors (Hamel and Prahalad, 1985; Kim and Mauborgne, 1988). This option reduces the risk for the global firm of having to face aggressive challenges from its competitors. Second, the multiplicity of national markets allows firms to minimize the effect of adverse changes in a country's interest rates, wage rates, and commodity and raw material prices by providing the added option to more readily shift production and sourcing sites to other more favorable national markets (Kogut, 1983, 1985b; Porter, 1986). Finally, global market diversification releases firms from the mercy of

supply and demand fluctuations of any one national market, smoothing the peaks and troughs of firms' revenue stream. In sum, the spreading of activities across global market areas provides the firm with operational flexibilities that will serve to reduce earnings and profit fluctuations. Taken together, the above discussions suggest that the unique opportunities and options of global market diversification may simultaneously increase firms' returns and reduce their risk.

Product diversification and the risk-return trade-off

In a pioneering work on the nature of the linkage between risk-return performance and corporate diversification strategy, Bettis and Hall (1982) found a negative risk-return relationship in related-link diversifiers, a positive relationship in unrelated diversifiers and no relationship in related-constrained diversifiers. Their results suggest that the nature of the risk-return trade-off varies across distinct product diversification postures. Bettis and Mahajan (1985) further developed the study of Bettis and Hall (1982). They showed that while a favorable risk-return performance was very difficult to achieve with unrelated diversification, related diversification was no guarantee of a favorable risk-return performance either. However, they did find that some related diversifiers managed to simultaneously reduce risk and increase return.

While the above research provided some degree of support for Bowman's (1980) risk-return paradox at the individual firm level, a recent study of Amit and Livnat (1988) found otherwise. Amit and Livnat (1988) presented evidence of the risk-return performance tradeoff in individual firms irrespective of their diversification postures; they found that related diversification characterized high risk-high return firms and unrelated diversification characterized low risk-low return firms.

However, in light of the important role industry effects play in determining the diversification/performance relationship (Christensen and Montgomery, 1981; Chang and Thomas, 1989), one can reasonably conjecture that the risk-return trade-off relationship in diversified firms found in the aforementioned studies could well be confounded by industry effects not controlled for in their analyses. Also, these aforementioned studies examined only the product dimension of firm diversification. More important, however, is that no strong theoretical reasoning exists in support of either related or unrelated product diversification resulting in a negative relationship between corporate risk and return, thereby explaining Bowman's paradox.

RESEARCH METHODS

As shown in Bettis and Mahajan (1985), a potentially powerful approach to examine the relationship between diversification and risk-return trade-off behavior is to identify groups of firms with similar risk-return performance profiles and then analyze the groups for their distinctive diversification postures. Following this approach, the present study investigates the linkage between the diversification strategies of multinationals and their joint risk-return performance. Our approach, however, diverges from Bettis and Mahajan's in its construction of a risk-return taxonomy of diversified firms; while Bettis and Mahajan partitioned the risk-return variance without adjusting for industry effects in forming groups of firms with different risk-return profiles, our approach uses risk-return performance net of industry effects to construct the risk-return groups. Specifically, sample firms' risk-return performance is regressed on their weighted industry risk-return performance to obtain the regression residuals of individual firms. We can then use these regression residuals, representing the risk-return performance net of industry effects, to form risk-return groups. This way of partitioning the risk-return variance has a significant advantage in that industry effects are removed in an outright manner for the subsequent analyses. Under the previous approaches (e.g., Bettis and Mahajan, 1985; Amit and Livnat, 1988), on the other hand, the confounding effect of industry persists, making their results on the diversification/risk-return relationship questionable.

The grouping procedure is conducted through K-mean clustering analysis. The K-mean clustering algorithm assigns firms into groups in such a way as to obtain within-group homogeneity and across-group heterogeneity (Green, 1978). Multivariate Analysis of Variance (MANOVA) is then used to investigate whether multinationals'

diversification strategies, revealed in both the related and unrelated product components and the international market component of diversity, do vary across distinctive risk-return groups. The MANOVA technique serves our purpose well as it is able to reflect the multivariate nature of a multinational's diversification strategy. The MANOVA results provide a picture of the existence/nonexistence of an overall linkage between multinationals' diversification postures and their risk-return profiles.

Subsequently, we investigate both overall and pairwise differences across the risk-return groups with respect to each strategic component of diversification. Here, we aim to assess the impact of each strategic component of diversification on the risk-return performance while controlling for the effects of the other two strategic components of diversification. Analysis of covariance (ANCOVA) and pairwise ANCOVA contrasts are used for this purpose. The use of the ANCOVA technique here reflects our concern that the two strategic dimensions of global diversification—product and international market—might possibly have a joint effect on risk-return performance.

The clustering approach used here to construct a risk-return taxonomy has been shown to work well in the past (Bettis and Mahajan, 1985). Nonetheless, it does result in some degradation of the data by averaging out between-firm variance. To check that this was not a serious problem in our analysis, we conducted a multiple regression analysis using a single measure of risk adjusted return as the dependent variable, with the product and global market diversification variables and an industry effects control variable as independents.

DATA

We started with a sample of 152 large U.S. multinationals listed in the 1982 Forbes survey of large U.S. multinational corporations. The survey measured management performance of 1023 public companies with annual sales of at least U.S. $400 million. We then eliminated 27 firms from further analysis. Attrition occurred due to unavailability of comprehensive corporate performance data for one firm; post-1982 discontinuation of independent business operations as

a result of mergers and acquisitions for nine firms; unavailability of dependable data on the global diversification of firms' operations for six firms; and severe discontinuities in diversification posture for 11 firms that changed either their core businesses or a noticeable extent of their international involvement during the study period. This left us with a total sample of 125 multinationals for the final analysis.

Performance measure

Bowman's paradox applies when we consider risk at the level of the firm defined as variance of accounting returns; it does not apply at the level of security markets. As Bowman (1980: 25) explained, 'The firm with lower risks and higher returns (to the firm) can have its securities priced relatively higher by the security market place, thus lowering its returns to the securities buyer, which then eliminates the paradox at the level of the securities owner or buyer.' Hence, this paper takes the manager's view, not that of the investor in a portfolio of securities. Accordingly, our focus is on accounting returns, not on stock market returns.

The firm return measure employed in this study is the 5-year average (1982–86) return on assets (ROA = before tax earnings plus interest divided by total assets). ROA, which controls for differences in the financial structures across firms, has been widely used by both managers and researchers and serves well the purpose of a diversification study of this kind (e.g., Montgomery, 1985; Bettis and Mahajan, 1985). Following accepted practice in diversification research, firm risk was measured by the standard deviation of ROA over the 5-year study period.

The principal data source used for measuring both the firm performance and the weighted industry performance of our sample firms was COMPUSTAT data bank. On occasions, 10-K reports of sample firms were used for missing data points. Compustat's Aggregate File provided annual industry returns for the 5-year study period. Industry risk was calculated as the standard deviation of these returns during the study period. Using the Compustat's Business Information Industry Segment File, we then calculated 'weights'—the ratios of firms' industry segment sales to their total sales—for each industry segment of sample firms. These weights

along with our annual industry returns were then used to generate our sample firms' weighted annual industry returns for the study period of 1982–86. The 5-year averages of these weighted annual industry returns were used in our final analysis. The mathematical expression of this weighted industry return measure of a firm is as follows:

$$WIRN = 1/5 \sum_{t=1}^{5} \sum_{j=1}^{n} P_{jt} IROA_{jt}$$

where:

WIRN	= weighted industry return of a firm
n	= number of industry segments in which a firm operates
P_{jt}	= the proportion of the jth industry segment sales of a firm to its total sales in year t (here, t = 1 represents t = 1982)
$IROA_{jt}$	= return on assets for industry j in year t

Akin to firm risk, industry risk here is defined by the standard deviation of 1982–86 returns for the industry. Hence, weighted industry risk of a firm was derived by the calculation formula as follows:

$$WIRK = \sum_{j=1}^{n} P_j SDIROA_j$$

where

WIRK	= weighted industry risk of a firm
n	= number of industry segments in which a firm operates
P_j	= the proportion of jth industry segment sales of a firm to its total sales for the study period of 1982–86
$SDIROA_j$	= the standard deviation of 1982–86 returns for industry j

For our regression analysis we needed a single measure of risk adjusted return. Following earlier approaches to risk adjustment in finance literature (e.g., Treynor, 1965; Sharpe, 1966; Jensen, 1968), we used a measure of risk-adjusted accounting returns defined as follows:

$$RA.ROA = ROA - SDROA*(ROA_S - RFR)/SDROA_S$$

where

RA.ROA	= the risk adjusted return on assets of a firm
ROA	= the unadjusted return on assets of a firm
SDROA	= the standard deviation of a firm's return on assets over the study period
ROA_S	= the mean ROA for the sample
RFR	= a risk-free return
$SDROA_S$	= the mean ROA standard deviation for the sample

Here $(ROA_S - RFR)$ is our sample firm's return premium to compensate our sample firms' risk $(SDROA_S)$. Hence $(ROA_S - RFR)/SDROA_S$ is the return premium associated with a unit of risk for our sample firms. To incorporate the risk dimension into a single measure of return performance, we adjusted firms' unadjusted ROA downward to reflect their risk. The downward adjustment was made by simply multiplying a firm's SDROA with the return premium associated with a unit of risk. To illustrate, if SDROA equals zero, RA.ROA will equal ROA since no risk adjustment is needed. If a firm's SDROA equals $SDROA_S$, the risk adjustment will equal $(ROA_S - RFR)$. Further assume that the same firm has an ROA greater than ROA_S, its RA.ROA will be greater than RFR. Hence, the firms that have supernormal returns relative to the standard risk associated with their businesses will have RA.ROA higher than RFR, while the firms that have subnormal returns relative to the standard risk associated with their businesses will have RA.ROA lower than RFR. We estimated RFR as the average yields on 90-day U.S. government treasury bills, the standard example in finance literature of a risk-free investment vehicle. According to the Federal Reserve Bulletins, these yields averaged 8.47 during the 1982–86 period of our study.

Using exactly the same formula, risk adjusted returns of industries were computed by applying industry ROA and SDROA instead of firm ROA and SDROA. Weighted industry risk adjusted returns (WIRA.RN) for our sample firms were then derived based on the annual weights—the proportion of firms' industry segment sales to their total sales—for each industry segment of these firms. This weighted industry risk adjusted

return served as industry control variable in our multiple regression analysis.

Diversification measure

We employed Kim's (1989) entropy measure of global diversification, designed to distinguish among the three components of corporate global diversification, namely: unrelated diversification (UD), which reflects the extent of diversification across industry segments; global market diversification (GMD), which reflects the extent of the dispersion of a firm's operations across the major global markets; and global related diversification (GRD), which reflects the extent, worldwide, of diversification across business segments. The application of this diversification measure is appropriate here as it allows us to separately assess the impact of international market vs. product (related and unrelated) diversification. Kim, Hwang, and Burgers (1989) employed this entropy measure of global diversification in examining the corporate profit performance impact of global diversification and found that these two strategic dimensions have a distinct yet joint effect on corporate profit performance.

Note that industry segments correspond to two-digit SIC codes and business segments correspond to 4-digit SIC codes. Global market areas, following Hirsch and Lev (1971) and Miller and Pras (1980), correspond to seven relatively heterogeneous global market areas based on their economic and political conditions. These are: North America (U.S. and Canada); the European Community and its associates; Japan; other developed countries; developing (industrializing) countries; underdeveloped countries; and centrally planned economies (current and previous).

Kim's entropy measure of global diversification employed here thus takes into account not only the extent of a firm's distribution of business activities across industries and across different businesses within its industries, but also across the *multiple* heterogeneous areas of the global market. In contrast, past (e.g., Rugman, 1979; Wolf, 1975, 1977) and recent (e.g., Grant *et al.*, 1988; Geringer, Beamish, and daCosta, 1989) studies of multinational diversification generally acknowledge only two distinct geographic market domains, domestic and foreign. Such a bipolar view of the globe, however, does not reflect the

reality of global competition among modern multinationals where the exploitation of various location advantages across *multiple* geographic areas and the leveraging of such advantages through a proper distribution of the firm's operations are critical for success. More importantly, the previous studies of multinational diversification failed to recognize still another important strategic element of international market diversification: the international location effect of industries. This basically captures the distribution pattern of a firm's industries across global market areas. The importance of considering this international location effect can be best illustrated by the following example.

Let's assume that firms *A* and *B* operate in two international market areas with two different industry segments. Let's further assume that firm *A* has only one of the two industries located in each international market area, while firm *B* has both industry segments located in both international market areas. While one can easily recognize the different extent of the two firms' global market diversification, this difference cannot be captured in the previous studies since they simply look at the number of international market areas in which a firm operates without considering the international location effect of industries. Unlike the previous studies, the entropy measure we use here, recognizing the effect of international market distribution on a firm's industries, can distinguish between firms *A* and *B* in the extent of their global market diversification. Detailed descriptions and the mathematical exposition of the entropy measure of global diversification can be found in Kim (1989).

The necessary data were obtained from Dun and Bradstreet's 'America's Corporate Families and International Affiliates' and personal inquiries to individual firms for data clarifications or missing data points for the study period of 1982–86. In computing Kim's entropy indices of global diversification, we followed Kim *et al.*'s diversification study (1989) in the way they operationalized Dun and Bradstreet's data set.

EMPIRICAL ANALYSIS AND RESULTS

To obtain the risk-return performance net of industry effects, firms' return and risk were

regressed on their weighted industry return and risk, respectively. The b coefficients for return and risk equaled 0.2189 ($p < 0.05$) and 0.2343 ($p < 0.01$), respectively, showing that profitable firms tend to operate in industries with higher returns and low risk firms tend to operate in more stable industries. This result is in line with previous findings (e.g., Chang and Thomas, 1989) and adds support to the necessity of controlling for industry effects in examining the diversification/risk-return performance linkage.

We then applied the K-mean clustering algorithm to the regression residuals, i.e., to firms' risk-return performances net of industry effects. The output generated clusters of firms sharing similar risk-return characteristics. Within-cluster variance was reduced only marginally with more than four clusters, suggesting a four cluster solution. Figure 1 plots the cluster centroids, and shows the number of firms and the means of return and risk for each cluster. The ANOVA results confirmed that the chosen four clusters do not have identical means ($p < 0.01$). Further, *post-hoc* comparison based on Duncan's multiple range test ($p < 0.05$) also revealed that except for clusters 1 and 4 for risk residuals and clusters 2 and 3 for return residuals, all other paired clusters showed significant differences.

Our MANOVA results on the overall difference across the groups in their diversification postures showed that Wilk's lambda for the overall model is 0.7938 with $p < 0.001$. This indicates that the means of the three diversification indices of GMD, GRD, and UD are not identical across the four groups of firms. Our results thus provide evidence that the overall diversification postures captured in the three diversification indices differ across the groups of firms in the different risk-return categories, suggesting the existence of an overall linkage between diversification strategies and the risk-return profiles of multinationals. Table 1 presents group means on the three diversification indices on which the MANOVA test is based. Based on the relative positions of cluster centroids shown in Figure 1 and our results of Duncan's multiple range test, we named cluster 1 or group 1 low risk-high return, cluster 2 or group 2 high risk-medium return, cluster 3 or group 3 medium risk-medium return, and cluster 4 or group 4 low risk-low return, respectively.

ANCOVA and pairwise ANCOVA contrasts lent further transparency to the MANOVA results. Here the three strategic elements of diversification (GMD, GRD, UD) alternatively served as the dependent variable with the remaining two elements being treated as covariates in each case. The results, presented in Table 2, suggest that the firms belonging to groups 1 (low risk-high return group), 2 (high risk-medium return group) and 4 (low risk-low return group) have mutually distinctive diversification profiles.

The distinctive difference in the diversification strategies of firms in group 1 vs. group 2 resides in their pursuit of global market diversification. Group 1 firms on the average showed a significantly higher level of global market diversification than group 2 firms. Given that group 1 achieved more favorable risk-return performance—both lower risk and higher return—than group 2, we may tentatively state that global market diversification plays an important role in both reducing risk and increasing return.

The firms in groups 1 and 4 showed no difference in their related diversification but showed significant distinction in their global market and unrelated diversification. Group 1 firms *vis-a-vis* group 4 firms achieved a significantly higher level of global market diversification, but a significantly lower level of unrelated product diversification. Recall that group 1 firms showed a superior performance in both risk and return, while group 4 firms showed a superior performance in risk but an inferior performance in return. We may then reason that while both global market and unrelated diversification may help to achieve a superior risk performance, global market diversification appears to be able to do so while simultaneously increasing return; unrelated diversification, in contrast, appears to achieve the superior risk performance at the expense of return performance.

Group 2 (high risk-medium return) and group 4 (low risk-low return) showed no difference in their global market diversification, but showed significant distinction in their product dimension—related and unrelated—of diversification; while group 2 firms on the average were more related in their product diversification than group 4 firms, group 4 firms were more unrelated than group 2 firms. Since group 2, when compared to group 4, exhibited better return performance but inferior risk performance, we may tentatively conclude that while related diversification can
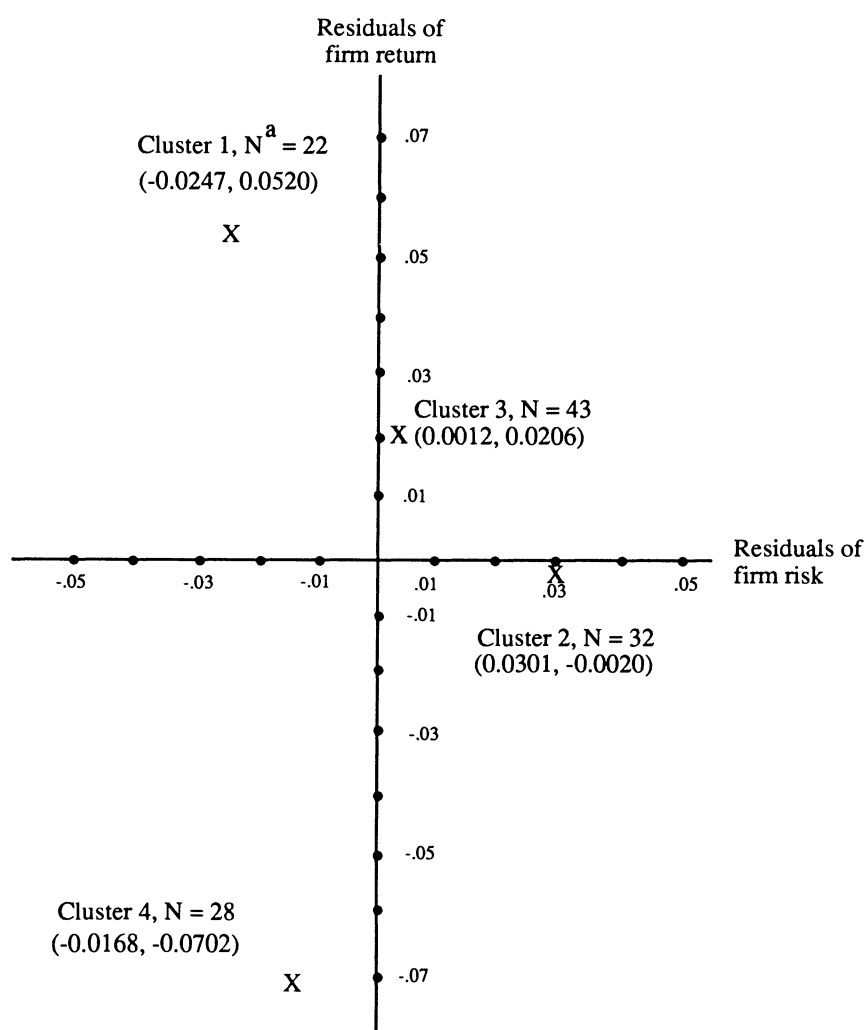
Figure 1.   A plot of cluster centroids. [a]N = the number of firms

Table 1.   Group means on the three diversification indices

	Group 1[a]	Group 2	Group 3	Group 4
GMD	0.501	0.310	0.371	0.265
GRD	0.604	0.794	0.562	0.453
UD	1.279	1.297	1.369	1.592
N[b]	22	32	43	28

[a] G (group) 1: Low risk–High return
  G (group) 2: High risk–Medium return
  G (group) 3: Medium risk–Medium return
  G (group) 4: Low risk–Low return
[b] N = the number of firms

help to increase return at the expense of risk performance, unrelated diversification can help to decrease risk at the expense of return performance.

We failed to draw any interesting interpretation on the firms in group 3 *vis-à-vis* those in the other three groups with regard to their diversification/risk-return linkage. This may partially stem from the marginal distinction of group 3 firms (medium risk-medium return group) from the others in their risk-return performance characteristics.

Finally, Table 3 provides the results of our multiple regression analysis using risk adjusted

Table 2. Results of ANCOVA and pairwise ANCOVA contrasts

	Covariate-adjusted group means				Partial F-values	Actual Significant pairwise difference	
	G1	G2	G3	G4			
GMD	0.512	0.300	0.377	0.259	3.73**	G1&G2**	G1&G4**
GRD	0.579	0.807	0.560	0.467	2.93**	G2&G4***	
UD	1.233	1.306	1.368	1.629	2.33*	G2&G4*	G1&G4**

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table 3. Results of multiple regression analysis

Dependent variable	Independent variable	b	Standard error
RA.FRN	WIRA.RN	0.296**	0.092
	GMD	0.258**	0.085
	GRD	0.203*	0.084
	UD	0.061	0.093

$R^2 = 0.185$
Adjusted $R^2 = 0.157$
$F = 6.543^{**}$

$^{*}p < 0.05$, $^{**}p < 0.01$

firm return (RA.FRN) as the dependent variable and the diversification indices and the industry control variable as independent variables. RA.FRN represents the RA.ROA of a firm. The industry control variable represents the weighted industry risk adjusted return (WIRA.RN) of a firm.

These results suggest that risk adjusted industry return performances affect risk adjusted return performance of the firm ($p < 0.01$). For example, firms operating in profitable and stable industries tend to have a favorable risk adjusted return performance. In line with the results of our cluster analysis, global market diversification is shown to generate a favorable risk adjusted return. Interestingly, while unrelated diversification proved insignificant, related diversification entered the regression with a positive and significant ($p < 0.05$) coefficient. This suggests that risk adjusted return performance of related diversification tends to be more favorable than that of unrelated diversification. Considering these results along with the results of our cluster analysis, we may then tentatively state that the rate at which risk performance is traded for return with related diversification tends to be more favorable than the

rate at which return is traded for risk performance with unrelated diversification.

DISCUSSION AND CONCLUSIONS

Bowman (1980) challenged the long held view that 'there is no free lunch' by finding that firms with high returns can have low risk. Yet to date no theoretical rationale has been put forth to explain this paradox. As a result, it is perhaps not surprising that conflicting evidence exists as to what, if any, strategic posture of a firm can achieve this high return low-risk profile. This paper attempted to go beyond prior research by advancing a theoretical rationale to explain this paradox. Here we drew on the rich body of international management literature and argued that global market diversification can achieve such a high return low-risk profile. Our argument here was grounded on the three distinct opportunities and options global market participation provides over domestic firms. We further argued that no clear theoretical rationale exists to expect either related or unrelated product diversification to lead to such a favorable risk-return profile.

In examining the risk-return performance consequences of multinationals' diversification, this paper also made three methodological contributions over prior research on this topic. First, although we adopted Bettis and Mahajan's way of partitioning the risk-return variance, we did so in a manner that controlled for industry effects. Second, the role that global market diversification plays in determining the risk-return trade-off performance was expressly traced. Finally, a risk adjusted return performance measure was devised and employed in a multiple regression analysis to shed additional

light on the relationship between multinationals' diversification and their risk-return trade-offs.

Overall, the results of this research confirmed our prediction of the strikingly important role global market diversification plays in achieving superior risk-return performance. As theorized, we found that a favorable risk-return performance can be achieved with global market diversification. This finding supports and extends Bowman's (1980) statement that 'more profitable firms are very active in international markets, which as a form of diversification may reduce the variance exposure as well as offer a wider variety of investment opportunities.' Clearly, the global market dimension, which has been understudied in the literature and underutilized in the joint management of corporate risk and return, needs to be expressly incorporated in future studies on this topic. This is especially true as most diversification studies, including all of those on the risk-return trade-off, are still under the dominant influence of Rumelt's product based approach. Even those studies (e.g., Grant *et al.*, 1988; Geringer *et al.*, 1989) that recognized two different geographic market units, domestic and foreign, failed to capture the essential strategic elements of global market diversification: the *multiplicity* of global markets served by a firm and the *distribution* pattern of a firm's industries across these global market areas. Capturing these two strategic elements is critical as they are precisely what is theorized to give risk to the high return-low risk profile of global market diversification.

With respect to the effect of the product dimension of diversification, the results of this study also supported our prediction. The risk-return trade-off was found to exist in both related and unrelated product diversification. Specifically, we found that a favorable risk-return performance is extremely hard to achieve with product diversification alone, be it related or unrelated, when the global market dimension is controlled. While related product diversification achieved a favorable return performance at the expense of risk performance, unrelated product diversification achieved a favorable risk performance but at the expense of return performance. Beyond this, our results also provided some tentative indication that in risk-return trading, related product diversification tends to be relatively more efficient than unrelated diversifi-

cation. This would seem to suggest that the related product diversification strategy when compared to the unrelated product diversification strategy offers a more efficient risk-return trade-off.

By controlling for industry membership in our analyses, we were also able to reach some conclusions on the effect of industry membership on the risk-return trade-off. Specifically, we found that while industry membership contributes to corporate risk-return performance, an overall linkage between a firm's diversification strategy and its risk-return performance exists even after controlling for the industry effect. This finding, which is in line with previous findings (e.g., Chang and Thomas, 1989), indicates that the industry effect on firms' risk-return profile is crucial. It also adds support to the importance of controlling for industry effects in examining the linkage between diversification and joint risk-return performance.

It is interesting to note that while the inverse risk-return relationship existed at higher levels of return, a positive risk-return relationship was found at lower levels of return. Put together with our prior findings on the effects of the product and the global market dimensions of diversification, this finding suggests that at lower levels of return the risk-return trade-off behavior of the firm is greatly influenced by its choices of product diversification strategies, while at higher levels of return the risk-return trade-off behavior is chiefly driven by firms' global market diversification.

A future extension of this work is to expand our understanding of the causal linkages between diversification strategy and the risk-return trade-off. As suggested in industrial organization's industry structure—firm conduct—firm performance paradigm (Mason, 1939; Bain, 1959; Scherer, 1970), a partial analysis focusing on the firm conduct/firm performance linkage without figuring industry structure in the causal chain may be a futile effort; such a partial approach may cloud rather than clarify our understanding of this topic irrespective of how sophisticated the model employed. Hence, a better understanding of the causal flows among the three constructs of industry structure, firm conduct, and firm performance appears necessary. It is our tentative hypothesis that when the effects of firm attributes are controlled, the past industry structure in

which a firm operated may well be seen to affect the firm's current strategic posture toward diversification; this and the firm's current industry structure may, in turn, explain the firm's risk-return performance. Such a study may begin to answer the question of what shapes a firm's diversification posture to start with and how this posture in turn affects its risk-return performance.

Admittedly, while industry effects are controlled, firm attributes are not figured in our analyses. As with all studies of this type, this deficiency mainly stems from our failure to obtain an acceptable data set on firm attributes of our sample companies (e.g., weighted market share measures as a surrogate of firms' market power were not available for the multinational in our sample). Further, in common with other work in this area, a limitation of our study resides in its use of cross-sectional data to test what is undoubtedly a causal phenomenon. While statistical analyses based on cross-sectional data can verify predicted asociations between variables, they can never provide a direct test of implicit or explicit causal direction in such association. Despite the room for these improvements, we hope this paper has built a more common thread integrating prior diversification works and has stimulated much-needed further research in this important area of strategic management.

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