

## **Impact of Size and Risk Management on Economic Performance of Multinational Corporations**

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### **Abstract**

*This study explores the impact of size and risk management ability on economic performance of multi-national corporations. Economic performance is observed under different level of Size, Financial Leverage, and Risk Management ability of multi-national corporations. Economic performance is determined on the basis of three elements Return on Assets, Return on Equity and Return on Investment. By examining twenty multi-national firms, we found that economic performance is positively related with the size of the firm, risk management abilities and negatively related with the level of financial leverage. This paper shows how the risk management process influences the economic performance of organizations.*

**Keywords:** Multinationals, economic performance, risk management ability, returns on assets, return on equity, return on investment, and size of an organization.

### **1. Introduction**

Multinational corporations have many dimensions and can be viewed from several perspectives (ownership, management, strategy and structural, etc.). A firm becomes multinational enterprise when it begins to plan, organize and coordinate production, marketing, R&D, financing, and staffing on global basis. For each of these operations, the firm must find the best location. They are operating in highly different environment comparative to their home land. A multinational enterprise is facing the paradox that although it doesn't have the contacts and knowledge of local customs and business practices as indigenous competitors but they still compete with such firms to capture a sizable market share. The global environment is highly uncertain for them, similar to other firms they do their best to enhance their profitability. The study was conducted to find out the impact of different operating variables on the economic performance of multinationals. Economic performance can be measured on a number of variables, but three variables i.e. return on assets, return on equity, and return on investment are taken to review the force of financial leverage (which enhance the risk profile of the company, but simultaneously may be necessary for the future expansion of an organization). Economic performance is also checked in relation to the size of the firm and risk management ability which is determined on two basis i.e. standard deviation in sales divided by standard deviation of return on assets and return on equity. The general hypothesis is that the elements of economic performance are positively related to size and risk management ability. The empirical results reveal that these two variables have significant positive relationship with ROA, and ROE but insignificant positively related with ROI.

### **2. Literature Review**

Multi-nationality provides frame work to organizations to deal with the changing environmental conditions. It has specifically been argued that operational flexibilities can allow the corporations to reposition and restructure in response to changes in international price relations by shifting activities between national entities controlled by the multinational enterprise (Kogut, 1985; Rangan, 1998). The flexibility of a multinational organization should allow the corporation to mitigate effects of major economic exposures, e.g., associated with change in relative demand conditions and cost factors across national environments (Allen and Pantzalis, 1996; Kogut and Chang, 1996).

Multi-nationality might be linked to the innovative capacity of multinational diversity and forming the basis for strategic opportunity that can increase maneuverability in an uncertain global environment (e.g., Mang, 1998; Desouza and Evaristo, 2003; Andersen and Foss, 2005). Multinational organizations provide opportunities to exchange diverse knowledge across borders where different insights and perspectives enhance the ability to innovate and develop new growth options (Kogut and Zander, 1992, 1993; Grant, 1996). This attitude of MNCs may lead towards the creation of innovative products with good quality and cultural exchange which enhance the market share. This further improves the economic performance of an organization. Risk management practices should reduce the volatility in earning, share price and associated cost of financial distress. If the volatility of the firm's cash flows is reduced and firm maintains a certain financial cushion in the form of liquid financial assets and simultaneously commit credit facilities, it will always enjoy the availability of funds for positive NPV projects. Lower performance volatility will reduce the firm's average cost of capital (Torben, 2008).

Most recent empirical research on risk management focuses primarily on the use of derivatives as a risk management tool. Similarly regulatory events provide a powerful setting to examine change in risk-related activities, unlike cross-sectional tests of determinants of risk management based on levels of firm characteristics and proxies for the levels of risk management (e.g., Géczy, Minton, and Schrand, 1997; Tufano, 1996; Mian, 1996; and Dolde, 1993). The intuition that long-term contracting can be used as a risk management tool is supported in theoretical arguments by Hubbard and Weiner (1986) they analyzed markets with both regulation and bargaining possibilities. Changes in production plans to manage price risk are consistent with the findings of Tufano (1996) that gold firms adjust their extraction plans at least partially to changes in gold prices. Firms presumably consider both the price risk effects and other risk/return effects when evaluating operational changes (Schrand and Unal, 1998). Risk managers can estimate whether an action is profitable for the firm given its risk appetite because they can evaluate how much capital is required to support that action (René M. and Brian, 2006).

To the extent an organization is able to manage uncertainties imposed by dynamic global conditions potential under investment problems would be reduced resulting in higher earnings (Froot, Scharfstein and Stein, 1993, 1994). Hence, risk management can be extended to include a real options perspective where firms are able to develop opportunities and claims on the future that can be evaluated based on assumptions about underlying risk factors (Leiblein, 2003). The presence of real options should be able to enhance sustainable value creation, since they are based on firm specific assets and processes not readily available in public markets (Barney, 1991). The reason behind the concept is that the real option structures differ from financial options in the way the option value is tied to idiosyncratic conditions in the firm (McGrath, 1997) as well as firm specific strategy processes may differ in unique ways that influence the firm's ability to exploit the options.

Miller and Modigliani (1958) argued that the value of firm is independent of the capital structure in an ideal world where there is no taxes, no transaction cost or bankruptcy cost. Under conditions of asymmetric information where managers in the firm know more about prospective projects than investors in the market, the capital structure may be determined in accordance with a pecking order whereby internal sources are used to fund good projects first while debt only is assumed to finance less attractive marginal projects (Myers and Majluf, 1984). Potential agency costs associated with equity financing derive from the possibility that managers divert productive resources to employment benefits with limited returns to shareholders (Jensen and Meckling, 1976). The difference between the management and shareholder can create a problem in the investment decision and management may want to issue more equity where as the shareholder may reluctant due to the fear of dilution. This issue could be resolved by issuing debt but excessive financial leverage can lead towards the under investment (Myers, 1977).

Firms operating in a highly dynamic environment pursue innovative behavior and face risks associated with the across boarder activities. In order to coup with the dynamic environment and capture the market share they pursue innovative ideas which creates performance as well as high business risk and call for lower financial leverage. Many of the risk management techniques have been developed in the financial industry, which by definition constitutes risk management business (Saunders, 2003). Effective risk management practices dampen the variability in periodic earnings and thereby reduce the average cost of funding. The availability of more favorably priced funding eliminates potential under investment problems, which constitutes a basic argument for financial hedging (Froot, Scharfstein and Stein, 1993, 1994)

### 3. Hypotheses

Economic performance can be referred as the utilization of firm's specific assets, scale and scope economics, and earning stability. Arguments for performance disadvantages of multinationality include liabilities of foreignness (Hymer, 1976), information processing and coordination costs (Jones and Hill, 1989) business risk (Reeb et al., 1998; Delios and Henisz, 2000), disproportionate asset investment (Click and Harrison, 2000). The increasing trend in the market liberalization / globalization has made it necessary for firms to expand their operations to the foreign markets. There may be certain challenges for the firm which are taking benefits of liberalization one of them may be; how should they make the trade off in resource expenditures between going to several overseas markets on one hand and improving their economic performance on the other hand. Firms' assets are required to create excess rents in dynamic global environments (Harris, 1991; Simerly and Li, 2000), excessive leverage can cause under investment problems (Myers, 1977). As MNCs compete in a highly dynamic environment where they need innovative behavior to maintain their market share, hence the availability of funds may facilitate the research activities, launching a new product etc. The increased operational flexibility should improve the ability to modify cash flow streams in response to major shifts in international price relationships and thereby counter effects of exogenous economic risk factors (Miller, 1997). Within a flexible multinational structure with a larger portfolio of innovative initiatives and growth options the strategic maneuverability is enhanced (Leuhrman, 1998). On the basis of literature the following hypotheses can be formed.

*HYPOTHESIS 1: Organizational size, and risk management ability have a positive relationship with return on assets which is negatively associated with financial leverage.*

*HYPOTHESIS 2: Organizational size, and risk management ability have a positive relationship with return on equity which is negatively associated with financial leverage.*

*HYPOTHESIS 3: Organizational size, and risk management ability have a positive relationship with return on investment which is negatively associated with financial leverage*

### 4. Methodology

Methodology is discussed on the basis of the following variables entertained in the research.

#### 4.1 Variables

##### 4.1.1 Organizational Performance

Organizational performance is referred to the actual output of an organization or the associated results; performance is linked with the operational activities, financial, legal and strategic activities. Organizations may use balanced scorecard which focuses not only on the operations but financial and marketing development. The underlying rationale is that organizations cannot directly influence financial outcomes, as these are "lag" measures, and that the use of financial measures alone to measure the performance of a firm is unwise. Organizations should instead also measure those areas where direct management intervention is possible. The financial perspective examines if the company's implementation and execution of its strategy is contributing to the bottom-line improvement of the company. It represents the long-term strategic objectives of the organization and thus it incorporates the tangible outcomes of the strategy in traditional financial terms. Some of the most common financial measures that are incorporated in the financial perspective are EVA, revenue growth, costs, profit margins, cash flow, net operating income etc. In this research, performance is measured by three ratios; Return on Assets (ROA), Return on Equity (ROE), and Return on Investment (ROI). ROA, ROE and ROI is determined as income before extra ordinary items divided by total assets, shareholders equity and total invested capital (including total long term debt, preferred stock, minority interest, and total common equity). The ratios are the average values for last five years in order to remove the swings occurred due to annual events.

##### 4.1.2 Financial leverage

This ratio is used to calculate the financial leverage of a company to get an idea about ways of financing. Companies which are highly leveraged may be at high risk of bankruptcy, or may be unable to find new lenders. Getting more debt is not always a negative signal; the shareholders may get higher returns on their investment. Here financial leverage refers to the ratio of debt (including all fixed charge debt and dividend on preferred stock) to equity. In the research the financial leverage is calculated on the realized value rather than market value. The value of financial leverage is also the average of five years data.

### 4.1.3 Risk management abilities

Risk management entails organized activity to manage uncertainty and threats. It involves organizations to follow procedures and use tools to ensure conformance with risk-management policies. Literature has identified certain principles of risk management like: it should create value, be an integral part of organizational processes, be a part of decision making, explicitly address uncertainty, it should be systematic and structure, dynamic and iterative, capable of continual improvement and enhancement. Risk management measure is calculated as standard deviation in sales – reflecting general business uncertainty – divided by standard deviation in economic performance (ROA, ROE), indicating earnings variability after the firm has adapted activities in response to changing conditions.

### 4.1.4 Organizational Size

Size can be defined as a structural property (like degree of formalization) or a contextual variable (like demand). Size can be measured in several ways like floor space, sales volume, clients served, net assets, etc. Book value of total assets is used as a measure of size in this research study. Small firm have on average low return on assets than the large firms have, small firms tend to do well in good economic conditions but perform poorly in the worst economic conditions.

### 4.2 Model

In order to measure the economic performance of an organization a number of elements need to be considered as a single factor cannot stress the economic performance. Hence we are making an allowance for three factors, which cover both sides of balance sheet to check the economic performance. Return on assets is an indicator of how profitable a company is relative to its assets, it gives an idea about the efficiency of management towards utilization of its assets to generate earnings. Higher the return on assets the better will be the company's financial performance. Return on equity gives a picture of how well the company is utilizing its equity resources (capital + reinvested earnings) to generate earnings. In other words it determines the corporations' profitability that reveals how much profit a company generates with the money provided by shareholders directly or indirectly. Return on investment focuses on earning capability of an organization with respect to total invested capital (Equity + Debt), which is also an important indicator of an organizational economic performance.

$$ROA = \alpha + \beta_1 (ROA) + \beta_2 (ROE) + \beta_3 Debt\ to\ Equity + \beta_4 Nth\ Log\ of\ total\ assets + \mu$$

$$ROE = \alpha + \beta_1 (ROA) + \beta_2 (ROE) + \beta_3 Debt\ to\ Equity + \beta_4 Nth\ Log\ of\ total\ assets + \mu$$

$$ROI = \alpha + \beta_1 (ROA) + \beta_2 (ROE) + \beta_3 Debt\ to\ Equity + \beta_4 Nth\ Log\ of\ total\ assets + \mu$$

Where:  $\alpha$  = Constant term,  $\beta$  = Coefficient,  $\mu$  = Error term

## 5. Data Analysis

### 5.1 Descriptive statistics

Descriptive statistics for all the variables is presented in the table below.

**Table I: Descriptive Statistics**

	ROA	ROE	ROI	(ROA)	(ROE)	Debt to Equity	Nth Log (LN)
Mean	9.7210	20.7675	14.9833	97093.9729	24959.7416	1.2741	11.1302
S.D	1.6797	3.1482	2.4407	94077.6724	23634.7069	0.2022	0.4744
Median	9.5172	20.1232	14.4647	2551.0436	1406.8258	1.1537	11.0089

Table I shows descriptive statistics for all the variables. Depending on data, highest mean value occurs for RMA (ROA) i.e. 97093.97 where as lowest mean value is for Debt to Equity i-e 1.27. Similarly standard deviation for RMA (ROA) is highest among all and that of Debt to Equity is lowest.

**Table II: Regression Analysis**

	$\alpha$	RMA(ROA)	RMA(ROE)	Debt to Equity	Nth Log (LN)	R <sup>2</sup>	F-value
ROA	-4.2342 (-0.2629)	0.0033 (4.3062)*	-0.0131 (-4.2974)*	-6.0793 (-4.784)*	2.7739 (1.6580)**	0.9310	(13.5030)*
ROE	-50.5030 (-1.2641)	0.0072 (3.8237)*	-0.0289 (-3.8231)*	-2.5418 (-0.8063)	8.6326 (2.0799)*	0.8792	(7.2784)*
ROI	34.1157 (-0.7219)	0.0029 (-1.3232)	-0.0118 (-1.3168)	-4.8258 (-1.2941)	-0.4967 (-0.1012)	0.7188	(2.5559)*

\*significant at 95% level of confidence

\*\*significant at 90% level of confidence

T-values in parenthesis

Data analysis for each hypothesis draws the following:

### 5.2 Hypothesis I

This study uses three independent variables which have relationship with economic performance of an organization.  $N_{th}$  log of total assets of a firm has been used as a proxy of size of firm. Risk management ability of an organization has been calculated as the S.D of sales / S.D of ROA [RMA (ROA)], and S.D of sales / ROE [RMA (ROE)]. Our results reveal that firm size has a positively significant relationship with ROA ( $\beta = 2.7739$ ,  $t = 1.6580$ ), Risk management ability also have positive significant relationship with ROA ( $\beta = 0.0033$ ,  $t = 4.3062$ ), and the relationship of second ingredient i.e. risk management ability is negative with ROA ( $\beta = -0.0131$ ,  $t = -4.2974$ ). In this study financial leverage is used as an independent variable which has an impact on economic performance. In order to find out the impact of financial leverage, Debt to equity ratio is used. It is assumed that financial leverage negatively affects the economic performance of an organization which is proved in results. Our results reveal that financial leverage has a negative significant relationship with ROA ( $\beta = -6.0793$ ,  $t = -4.783$ ), *F-value for the over all model is also positively significant (13.5030) at 95 % level of confidence with an  $R^2$  of 93.10%.*

### 5.2 Hypothesis II

Results reveal that firm size has positive relationships with ROE ( $\beta = 8.6326$ ,  $t = 2.0799$ ), the relationship of risk management ability ( $_{ROA}$ ) is also significantly positive with ROE ( $\beta = 0.0072$ ,  $t = 3.8237$ ), there is significant negative relationship between risk management ability ( $_{ROE}$ ) and return on equity ( $\beta = -0.0289$ ,  $t = -3.8231$ ). Results reveal that debt to equity has negative relationship with ROE ( $\beta = -2.5418$ ,  $t = -0.8063$ ) but the relationship is not significant.

*F – Value for the over all model is also positively significant (7.2784) at 95% level of confidence with an  $R^2$  of 87.92%.*

### 5.3 Hypothesis III

As per statistical results there is insignificant negative relationship between size of the firm and return on investment ( $\beta = 0.4967$ ,  $t = -0.1012$ ), relationship of risk management ability ( $_{ROE}$ ) is also negative with ROI ( $\beta = -0.0118$ ,  $t = -1.3168$ ) which is also insignificant. Results showed negative relationship of debt to equity ratio with ROI ( $\beta = -4.8258$ ,  $t = -1.2941$ ) which is not significant.

*F – Value for the overall model is significant (2.5559) at 95% level of confidence with  $R^2$  of 71.88%*

## 6. Discussion

Global environment provides bases for operational flexibilities, where multinationals deal with the diverse range of experiences in the field of human resources and operational facilities. In the process of utilizing their available operational facilities they face uncertainties which may sway their turnover, profitability, size of an organization, and even the financial structure. The study is conducted to find out the impact of these variations on the economic performance. In this study economic performance is associated with three elements i.e. Return of Assets, Return on Equity, and Return on Investment. Regression analysis is used to support the hypotheses derived in the light of literature quoted in this paper. The results of this study support the literature regarding impact/relationship of independent variables on the dependent variables except risk management ability based on ROE and financial performance which has a negative relationship with the economic performance indicators.

Generally the growing firms have lower transaction costs and agency costs related issues and offer higher rate of return to their investors, which is only possible if the company has sound profitability position. Size of the firm also affects the earning capability. If there is no idle capacity, profitability will be directly affected by the size of an organization as proved in the study. This study also considered risk management ability of an organization as an element to enhance the profitability; better the risk management practices of an organization higher will be the profitability. Financial Leverage is another risk factor considered for sample organizations. As an organization increases its debt it has to pay certain cost, (Cost of debt) which is paid out of the potential profit, which reduces the profitability of an organization. Hence negative relationship has been proved in the experimental analysis.

## 7. Conclusion

The results of study based on the sample size reveal that size of an organization is directly related to ROA and ROE but negatively with ROI, risk management ability<sub>(ROA)</sub> has positive relationship with all the three elements of economic performance, risk management ability<sub>(ROE)</sub> has significantly negative relationship with economic performance indicator. As per our analysis, there is an inverse relationship between debt to equity level and economic performance. Higher the level of leverage may have negative impact over the firms' profitability. Results suggest that the organizations operating in the global environment should take care of their capital structure.

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