Journal of Comparative International Management

Managers' Role in Systematic Risk:
A Rejoinder to Chatterjee, Lubatkin, and Schulze (1999)

Glenn Baigent, Howard Nemiroff and Patrizia Porrini

Volume 9, Number 1, June 2006

URI: https://id.erudit.org/iderudit/jcim9_1art04

See table of contents

Publisher(s)

Management Futures

ISSN

1481-0468 (print)
1718-0864 (digital)

Explore this journal

Cite this article

Baigent, G., Nemiroff, H. & Porrini, P. (2006). Managers' Role in Systematic Risk:: A Rejoinder to Chatterjee, Lubatkin, and Schulze (1999). *Journal of Comparative International Management*, *9*(1), 54–67.

Article abstract

We revisit the role of the manager as implied by the capital asset pricing model (CAPM) and address the three-decade discourse that has emerged in the Academy of Management Review concerning the responsibility of the manager. This discourse has embraced the conclusion that because CAPM only prices systematic risk and does not price unsystematic (firm-specific) risk, managers' decisions and actions are not priced by CAPM. The management literature implies that because managers' actions are not priced by CAPM, finance theory considers managers' actions irrelevant. We demonstrate analytically that CAPM, and specifically systematic risk, does consider and price the role of the manager.

Journal of Comparative International Management
2006, Vol. 9, No. 1, 54-67

Managers' Role in Systematic Risk: A Rejoinder to Chatterjee, Lubatkin, and Schulze (1999)

by
Glenn Baigent
Howard Nemiroff
Patrizia Porrini
Long Island University, USA

We revisit the role of the manager as implied by the capital asset pricing model (CAPM) and address the three-decade discourse that has emerged in the Academy of Management Review concerning the responsibility of the manager. This discourse has embraced the conclusion that because CAPM only prices systematic risk and does not price unsystematic (firm-specific) risk, managers' decisions and actions are not priced by CAPM. The management literature implies that because managers' actions are not priced by CAPM, finance theory considers managers' actions irrelevant. We demonstrate analytically that CAPM, and specifically systematic risk, does consider and price the role of the manager.

Introduction

In their comprehensive piece Chatterjee, Lubatkin, and Schulze (1999) suggest that the capital asset pricing model (CAPM) poses a strong challenge to the field of strategy. They remind us that the main reason that CAPM poses this challenge, as first noted by Bettis (1983), is that management theory is based on the premise that management matters. Thus, as per management theory, managers ought to be able to protect and navigate their firms in ways that are valuable to investors. Chatterjee, Lubatkin, and Schulze (1999) claim the CAPM implores managers to focus on lowering their firm's systematic risk, and not be concerned with unsystematic or firm-specific risk. Specifically they identify two dilemmas between the CAPM's implications and strategic management theory:

First, reducing beta requires that managers do something which they cannot - that is, reduce investors' exposure to macroeconomic uncertainties at a lower cost than what investors could transact on their own by modifying their investment portfolio; second, asking managers to downplay the importance of firm specific risk is not only contrary to our field, it also tempts corporate bankruptcy (Bettis, 1983). Thus, CAPM is clearly at odds with strategic theory since it implies that managers should focus on that which they cannot influence, and should not be concerned with that which they can and, per strategic theory, should influence (Chatterjee, Lubatkin, and Schulze, 1999: 556).

A major reason for their conclusions regarding CAPM, and its asynchronous position with strategic theory, is based on the premise that the CAPM divides the total risk of a security's returns into two components; unsystematic (a.k.a. as firm specific risk) and systematic (a.k.a. market risk). In its theoretical state, CAPM defines an equilibrium model to determine the price of securities. In utilizing a single market portfolio, CAPM prices the exposure that an individual asset's returns have relative to the returns on that market portfolio. Thus, if total risk comprised the complete variation of a firm's returns, the systematic component would be represented by the portion of the firm's returns that co-vary with the market portfolio. Consequently the unsystematic risk (i.e. firm-specific) component results from the proportion of total risk that is unique to the firm. At the root of the argument presented by Chatterjee, Lubatkin, and Schulze (1999) is the apparent conflicting message that CAPM delivers. As stated in Bettis, "Conundrum #1: Modern financial theory suggests that the equity markets will not reward unsystematic (i.e., firm specific) risk management, but unsystematic risk management lies at the heart of strategic management" (1983: 406).

To summarize, Chatterjee, Lubatkin, and Schulze (1999) provide a discussion highlighting the lack of theoretical and empirical validity of CAPM, and advance a framework that encompasses tactical, strategic, and normative risk factors. In their discussion they offer two salient points. First, they claim CAPM implies that the actions of a firm's managers are irrelevant because they are not priced. Specifically, they explain that managerial actions can only alter firm-specific risk, and thus - because they can be diversified away by investors through portfolio formation - investors are not rewarded for securities' firm-specific risk. Second, Chatterjee, Lubatkin, and Schulze (1999) offer that the risk premium on equity should not be captured by systematic risk (beta) alone, but instead should be reflected in tactical, strategic, and normative risk factors.

Our purpose herein is not to refute and rebut the authors' arguments, but more importantly to reestablish a bridge between finance and management theory. Herein we demonstrate analytically that the CAPM does consider and price the role of the manager. This truth is not inconsistent with Chatterjee,

Lubatkin, and Schulze's (1999) proposal that there are tactical, strategic, and normative risk factors that need to be priced. Pursuant to their theoretical developments, we will show that these risk factors are indeed priced by the CAPM.

Revisiting Challenges to the CAPM

Since the early 1970s, there has been much debate within finance literature specifically concerning whether beta is an appropriate measure of risk. Many researchers have found support for CAPM, and have found that there is a linear relationship between average return and beta (Black, 1972; Black, Jensen, and Scholes, 1972; Fama and MacBeth, 1972). However, others have questioned whether CAPM exhibits predictive ability, or whether it is appropriate for determining the risk of a firm's cash flows (Fama and French, 1992; Grinold, 1993; Roll, 1977). For a comprehensive review of CAPM debate see Jagannathan and McGrattan (1995).

The debate about CAPM dates back to Roll (1977). Roll's main argument was that CAPM is untestable - mainly because a fully diversified portfolio is difficult to construct. Furthermore, he pointed out that it is unclear whether the results obtained from CAPM are due to the model being incorrect, or due to the imperfection of the market portfolio used in the model. More specifically, to Roll stated that any study that uses CAPM will suffer from one of two problems; (1) either the CAPM model is correct and the beta derived from the proxy for the market (often the S&P 500) is incorrect, or (2) the CAPM model is incorrect and the beta derived from the proxy for the market is incorrect. In either case, using CAPM can lead to incorrect inferences. The problem with the estimate of beta is that we are uncertain about the proxy for the market portfolio. Consequently, a main implication of Roll's (1977) critique was that although CAPM may indeed be correct, there is no way of knowing this because we cannot identify an efficient market portfolio.

In what appeared to be the most damaging critique for CAPM, Fama and French (1992) claimed that firm size and book-to-market ratios are better than beta in explaining cross-sectional variations in stock returns. Although not included in the literature review presented by Chatterjee, Lubatkin, and Schulze (1999), there has since been much criticism of Fama and French's (1992) study. The most notable of these has been by Black (1993), who accuses them of data mining in order to obtain desired results, especially in light of the fact that there is no theoretical basis for the inclusion of the factors they included. Furthermore, Black (1993) points out that Fama and French (1992) report similar results on a largely overlapping data sample and find no size effect at all, whether controlling for beta or not, yet they claim that size is one of the variables that "captures" the cross-sectional variation in average stock returns. Black (1993) also claims that Fama and French (1992) give no reasons for a relationship between size and expected return, criticizes their finding that the

book-to-market value of firms' equity helps capture variation in average stock returns, and claims that because markets are somewhat efficient, stock prices react before accounting numbers to events affecting a firm's performance. Consequently, Black (1993) is not surprised by the result that firms with high ratios of book-to-market equity show poor subsequent accounting performance. Black does not believe there is evidence that book-to-market equity is a priced risk factor at all.

Other criticisms of the Fama and French's (1992) study similarly claim that the results presented are inaccurate. For example, Kothari, Shanken, and Sloan (1995) argue that the validity of their findings are highly dependent upon interpretation of their statistical tests. Specifically, Kothari, Shanken, and Sloan (1995) claim that Fama and French's (1992) estimates for the coefficient of beta have high standard errors, and imply that a wide range of economically plausible risk premiums cannot be statistically rejected. Amihud, Christensen, and Mendelson (1992) also support the view that the data used by Fama and French (1992) is too noisy to invalidate CAPM. The authors show that when a more efficient statistical method is used, the relation between average return and beta is positive and significant, as implied by CAPM. Finally, when Breen and Korajczyk (1993) re-tested the sample used by Fama and French (1992), they found that the effect of the book-to-market equity ratio was much weaker than reported.

In response to this debate, many researchers have tried to focus on alternative asset pricing models. However, Jagannathan and Wang (1993) point out that it may not be necessary to shift to alternative pricing models since one main reason for the lack of consistent empirical support for CAPM may be due to the inappropriateness of the assumptions made to facilitate its empirical analysis. For example, as previously discussed in Roll's (1977) critique, CAPM studies do not often use a portfolio that represents the true market portfolio (an aggregate portfolio of all assets in the economy), instead using a proxy portfolio such as a stock market index (typically the S&P500). By including a more precise proxy for the true market portfolio, Jagannathan and Wang (1996) are able to improve the predictability of CAPM by 26.6% over the predictive ability of studies using the NYSE or AMEX as a market proxy. Finally, when Jagannathan and Wang (1996) allow for time-varying betas, they show that CAPM is able to explain 57% of the cross-sectional variation in average returns. Thus, Jagannathan and McGrattan (1995) conclude that despite the ongoing academic debate CAPM still has something to offer.

At present, the debate on the validity of CAPM continues unabated. Rather than attempting to resolve the debate on the validity of CAPM, the current article will show that CAPM, however accurately or inaccurately, does capture and acknowledge the role of the manager as prescribed by strategic management theory. In order to appropriately understand and resolve the issue,

we must first establish what it is that managers do in the context of financial management. Both finance and management disciplines accept that firms, through their managers' actions, increase in value by making strategic decisions that ultimately result in positive net present value projects. From a financial management perspective, the value enhancing effect of these projects depends on the cost of capital that is derived from a pricing model (perhaps CAPM). Thus, our goal is to reexamine the role of the manager through a financial management lens, to establish that management does matter, and to assert that the managerial role is priced by CAPM and financial management theory. In the context of Chatterjee, Lubatkin, and Schulze (1999), the questions we will attempt to answer are as follows: In pricing only systematic risk, is CAPM pricing a risk that managers cannot control? If managers follow CAPM's argument of systematic risk, are managers doing nothing to add value to the firm? Should managers focus only on unsystematic or firm-specific risk? In order to present viable solutions to these questions, we present a basic summary of firm valuation, incorporating the role that managers play in the decision making process. The questions that we will attempt to answer may shed light on the confusion regarding managers' role in systematic risk.

What follows is an alternative explanation of the CAPM in the context of managerial actions. We show that risk can indeed be subdivided into tactical, strategic, and normative components so that Chatterjee, Lubatkin, and Schulze's (1999) suggestion is accepted without debate. However, a simple model of returns proves that these components are already captured by beta. Hence, managers' actions are priced and are relevant according to financial theory.

The Origins of CAPM

CAPM was developed by Sharp (1964) as an extension to the work of Markowitz (1952), who defined a mean-variance portfolio for all securities. Sharpe (1964) imagined a world in which every investor worked within this mean-variance framework. Furthermore, Sharpe (1964) assumed that each investor shared the same expectations regarding returns, variances, and covariances, and that investors were risk-averse. These assumptions lead us to an interesting conclusion: If the inputs to every investor's decision are the same, and they are all rational, then they should all hold the same assets. Since every asset must be held by someone, it follows that all investors will allocate some portion of their wealth to this "market portfolio."

When CAPM was developed, the idea of a "market portfolio" was probably more far-reaching than today. Mutual funds that select securities in proportion to their weight in the overall market are commonplace, and are generally referred to as "passive investment strategies." The "market portfolio" was then used as a benchmark against which all other securities' risk was measured.

It led to decomposition of total risk (variance) into its systematic and unsystematic components, where the unsystematic component could be reduced (or even eliminated) through diversification.

Even if we accept without reservation the findings of Fama and French (1992), we cannot argue that managerial actions are not priced. The objective of the firm is to maximize shareholder wealth or maximize the market value of the firm, which is reflected in capital markets. Reflection of value is manifested in the price of a firm's stock, so it is an input to the book-to-market ratio used in the Fama and French (1992) study. Where does this value come from? It is the action of managers that is being reflected in share price.

Let us consider a firm in the oil refining industry. A firm-specific risk is the spot price at which it can sell its product on the market several months from today. If firm managers want to eliminate price risk, they can take a short position in a futures contract and fix the price at which they sell their end product. That risk is unsystematic because it is unique to the firm and can be eliminated. It will not and should not be priced. However, if managers decide that there is an option to expand oil production (called a real option), then that decision is subject to systematic risk. That is, there is a portion of that investment decision that cannot be diversified away. For example, if the government decides that all new vehicles should be electric and powered by batteries, a firm with a newly expanded refinery now is faced with a significant loss in demand for its product. This risk is directly related to the action and decisions of managers, and must be priced.

In this paper we examine a steady state firm with constant earnings (i.e. no growth) that makes a proactive managerial decision to add to its earnings. Since the returns generated by the decision are subject to systematic risk, managerial actions are not irrelevant. In fact, they are a priced risk factor in CAPM, or any other multi-factor model.

Summary of Firm Valuation

Consider a firm with no growth (where investment, I, is exactly offset by depreciation, Dep) so that its net income is constant and perpetual. Further, assume that the firm is void of debt (i.e. there is no financial risk) and no taxes. To allow for debt and taxes does not add to the intuition emanating from this discussion - it only complicates the model. The perpetual cash flows from this firm are referred to as free cash flows, FCF. Consider the following basic income statement for this firm:

Revenues	100
- Variable costs	- 20
- Fixed costs	- 20
- Depreciation	- 10
Earnings Before Interest and Taxes	50
- Interest	- 0
Earnings Before Taxes	50
- Taxes	- 0
Net Income	50

In the absence of interest charges and taxes, the firm generates operating cash flows of $50. However, one of the costs above is depreciation. Depreciation is a non-cash expense and only affects the taxable base. It is designed to allow the firm to write down the value of an asset over time, but does not require any annual cash disbursement. As such, this item does not in any way affect the before tax cash flows generated by the firm. In reality, the cash that is available to shareholders for distribution is not the net income (i.e. earnings before interest and taxes (*EBIT*) in the case of no interest charges and taxes), but the net income along with the non-cash items previously deducted. The free cash flow (*FCF*) to be distributed to shareholders in the above example is actually 50 + 10 (*EBIT* + *Dep*), or 60. If we assume that the firm uses the equivalent of the depreciation expense in order to invest in new projects, then the free cash flow gets reduced by the 10 and simply becomes a perpetuity of *EBIT*. Formally:

$$FCF_t = (\text{Rev}_t - VC_t - FC_t - Dep_t) + Dep_t - I_t \qquad (1)$$

Since no growth implies $Dep_t = I_t$, at time t, it follows that $FCF_t = EBIT_t$. Applying the standard valuation principle that the value of an asset (or firm) is the present value (*PV*) of all its future cash flows, the market value of the firm, *V*:

$$V = \sum_{t=1}^{\infty} PV\,(FCF_t) = \frac{EBIT}{R_s} = \frac{NI}{R_s} \qquad (2)$$

where R_s is the required rate of return on equity, S. Also, since there is no debt, $V = S$, and is the market value of equity. Readers will recognize that this is on the Modigliani and Miller (1958) propositions in a no-tax world.

The Role of Managers in Firm Valuation

Suppose the firm hires a manager with skill, taking actions that affect *EBIT* (i.e. business risk[1]). For example, the manager decides to invest in an advertising campaign, the net effect of which is to increase revenues by more

than what was spent, yielding a positive impact on the firm's cash flow. Similarly, an investment in research and development could be made to enhance production efficiency, or the manager may uncover a tax credit accruable to the firm in each period, which enhances free cash flows. Presumably each of these managerial actions will be decided upon using the rule that if the action is in the best interest of the firm's shareholders and stakeholders, then it will be undertaken. Thus, the managerial action becomes something called a "real option." That is, for each action, managers have a decision between taking action to increase $EBIT_t$, or, doing nothing at all. The change (Δ) in *EBIT* is also assumed to be constant and perpetual. Mathematically, this is represented as:

$$MAX\left[\Delta EBIT, 0\right] \tag{3}$$

Thus, ex-ante, we expect that a manager's decisions and strategic actions will only be executed if the manager expects those actions to increase EBIT, otherwise managers will either do nothing or pursue another course of action. This is an option available to the decision makers of the firm that has either a zero or positive value. Moreover, the new value of the firm, V*, can then be written as:

$$\begin{aligned} V^* &= \sum_{t=1}^{\infty} PV\left(FCF_t + \Delta FCF_t\right) \\ &= \frac{EBIT}{R_s} + \left[\frac{\Delta EBIT}{R_s} - I_0\right] \\ &= \frac{NI}{R_s} + \left[\frac{\Delta NI}{R_s} - I_0\right] \\ &= \text{V + Real Option} \end{aligned} \tag{4}$$

where Δ represents the increment or change associated with taking the managerial action. In I_0 (4), is the investment necessary to generate additional *EBIT*. Note that $I_0 \geq 0$. At minimum, the additional investment may be zero (this would occur in cases where the manager made efficiency improvements with no capital investment).

Since real options ex-ante never have negative value, we know that $V^* \geq V$. In an ex ante/expectation context, a manager will only undertake an action if he/she expect it to positively affect the value of the firm. Conversely, it is safe to assume that ex-ante a manager will never take an option that is likely to have a negative value in the future. However, unlike "normal" options that trade on underlying assets, holders of real options are not limited in terms of their down-

side exposure. If a real option proves to be a poor managerial decision ex-post, the reason is because of the newly created exposure to systematic risk created by undertaking the real option in the first place. For example, if an investment in R&D was made to enhance production efficiency, but a competitor makes a technological breakthrough that nullifies the use of the firms' project, then I will be negative, ex-post. However, ex-ante the manager thought it would yield an improvement in cash flow. This leads to Remark #1:

> The objective of a firm is to maximize the value of the firm or maximize shareholder wealth. Since managerial actions have either a positive or zero value, management is not irrelevant to the firm's value, nor will management ever be irrelevant. Similarly, negative value decisions are not irrelevant.

Risk Premium on a Firms' Equity as a Result of Managerial Actions

Thus far we have identified two types of cash flows to a firm; cash flows from a no growth firm and the addition of cash flows from managerial actions. Defining the required rate of return on equity for a single period as the return on equity, we see that:

$$R_s = \frac{NI + \Delta NI}{S} = \frac{NI}{S} + \frac{\Delta NI}{S} = R_{NI} + R_{\Delta NI} \tag{5}$$

This implies that the return on equity has two components; the return on equity from no growth investments, plus the added return from managerial options.

According to the CAPM and the single index model of returns:

$$\beta_s = \frac{Cov\,(R_s\,,\,R_M)}{\sigma^2_M} \tag{6}$$

Substituting for $R_s = R_{NI} + R_{\Delta NI}$ implies that:

$$\begin{aligned} \beta_s &= \frac{Cov\,(R_{NI} + R_{\Delta NI}\,,\,R_M)}{\sigma^2_M} \\ &= \frac{Cov\,(R_{NI}\,,\,R_M) + Cov\,(R_{\Delta NI}\,,\,R_M)}{\sigma^2_M} = \beta_{NI} + \beta_{\Delta NI} \end{aligned} \tag{6}$$

In this context, β_{NI} is the beta associated with the firms' initial no growth investments, and $\beta_{\Delta NI}$ is the beta associated with the return from the managerial inputs. Notice that there is a systematic component to managerial inputs. Further, the linearity of the covariance term assures the result in (6). This leads to Remark #2:

Managerial activities are not only relevant, they are a "priced" systematic risk factor in firms' returns.

Remark #2 requires the assumption that cash flows from the no growth firm and managerial options are subject to systematic and unsystematic risk factors. Therefore, when we compute the systematic risk for a firm, we are capturing both the no growth and managerial effects.

Define the following:

$$R_{NI} = \alpha_{NI} + \beta_{NI} R_M + \epsilon_{NI} \tag{7}$$

and

$$R_{\Delta NI} = \alpha_{\Delta NI} + \beta_{\Delta NI} + \epsilon_{\Delta NI} \tag{8}$$

The subscripts are removed for clarity. Moreover, we could write

$$R_s = (\alpha_{NI} + \beta_{NI} R_M + \epsilon_{NI}) + (\alpha_{\Delta NI} + \beta_{\Delta NI} R_M + \epsilon_{\Delta NI}) \tag{9}$$

$$= (\alpha_{NI} + \alpha_{\Delta NI}) + (\beta_{NI} + \beta_{\Delta NI}) R_M + (\epsilon_{NI} + \epsilon_{\Delta NI})$$

Readers may recognize this as an Ordinary Least Squares (OLS) regression model. Based on the standard assumptions of the OLS model we know that:

$$\sigma^2_s = (\beta_{NI} + \beta_{\Delta NI})^2 \sigma^2_M + (\sigma^2\epsilon_{NI} + \sigma^2\epsilon_{\Delta NI}) \tag{10}$$

σ^2_s is defined as the total variance of the firm's returns R_s, and it is decomposed into systematic risk $(\beta_{NI} + \beta_{\Delta NI})^2 \sigma^2_M$ and unsystematic risk $(\sigma^2\epsilon_{NI} + \sigma^2\epsilon_{\Delta NI})$. Notice that the systematic risk component incorporates both the original no-growth exposure, as well as the managerial input.

Portfolio Theory, Unsystematic Risk, and Managerial Actions

According to modern portfolio theory, holding two or more assets has two effects; (1) weighted average returns, and (2) *less than* weighted average risk (if the correlation of R_1 with R_2 is less than 1). Since eliminating unsystematic risk is possible, it is assumed that rational investors will hold at least two securities with less than perfect correlation. Thus, the portion of total risk that is eliminated or reduced from total portfolio risk is unsystematic risk because the unsystematic risk across a set of securities will be reduced by their less than perfect correlation with each other. Systematic risk stemming from the no growth firm and managerial actions remains regardless of the degree of diversification. Thus, managerial actions are not only incorporated into systematic risk, but there is no way to eliminate their effects. This leads us to Remark #3:

It is not possible to eliminate the systematic effects of managerial actions.

Refinement of the Distinction between Systematic and Unsystematic Risk

Systematic risk, as CAPM theory implies, pertains solely to exposure to the market portfolio. All that is not market risk must by definition, be unsystematic or idiosyncratic (firm-specific) risk. Unfortunately, as Chatterjee, Lubatkin, and Schulze (1999) point out, many practitioners who use CAPM will use a sub-par index, typically the SandP500 as a proxy for the market portfolio. Therefore, all inferences based on the imperfect proxy as suggested by Chatterjee, Lubatkin, and Schulze (1999), may be suspect. However, this does not imply that CAPM is invalid (see discussion of Roll (1977) above). More importantly, it does not imply that CAPM does not allow for price managerial interventions. It does imply is that the definition of systematic and unsystematic risk needs to be contextualized. Therefore, it is within this context that we show that pricing systematic risk does consider managerial interventions, and show that systematic risk is not necessarily confined to movements in relation to a market portfolio - whether the fictitious market portfolio used for theory development or the oft used S&P500 as the market proxy. Rather, systematic risks also stem from exposure to market-wide factors resulting from managerial interventions.

In this context, unsystematic (or firm-specific) risk is idiosyncratic risk, or a type of white noise that is random and wholly unpredictable. Thus, the argument that CAPM makes is quite specific. If the volatility of a firm's stock returns contains predictable, market-wide movements as well as unpredictable components, then the investor need not worry about the latter. If enough stocks are held in a portfolio, the exposure that an investor may have to the unpredictable components will be reduced, due to their random nature in that they will cancel each other out. Since it is reasonable to assume that these unique risks are uncorrelated across firms, the argument that follows is that unsystematic risk can be minimized or diversified away by holding a portfolio of at least two securities[2].

Alternatively, systematic risk cannot be diversified away or reduced by investors because market-wide factors affect the entire market and the interrelated system that comprises the market. However, in relation to strategic management theory, this discussion of firm-specific risk should not be mistaken to imply that managers need not concern themselves with differentiating their firm. On the contrary, consider the firm that is unknowingly about to be faced with a strike. The stock will probably decrease in value once the news reaches the media. This price drop will be solely due to the possible long term effects of the strike, and will have nothing to do with any market-wide movements at the time. Given that management does not know that a strike is imminent, a price drop cannot be foreseen or prevented. However, if management is aware of a potential uprising, does nothing to prevent it, and investors are also aware,

then it is no longer an unpredictable, idiosyncratic event. Similarly, the manager that wins a surprise or government contract will see the value of the company's stock rise independent of any market-wide movements at the time. The manager that continues to win contracts has now taken the surprise out of the equation and contracts become expected. The stock will gain in anticipation of future contracts awarded. Therefore, through tactical, strategic, or normative actions, the manager can differentiate the firm, but these actions may not increase the volatility of the firm's returns. In fact, the risks that Chatterjee, Lubatkin, and Schulze (1999) suggest to be appropriate for managers are in fact extensions of the systematic component of volatility, and are accounted for and priced by CAPM.

CAPM and its Implications for Managers

Theoretical models such as CAPM are useful for corporate managers as they can provide a practical way for managers to ascertain how investors judge the risk of potential projects, investment opportunities, and strategic decisions. Thus, models such as CAPM ought to help managers allocate and use their firm's resources more efficiently. Managers ought to make decisions that are in the best interests of their shareholders and stakeholders, but managers do not necessarily know what their firm's owners would like them to do. The stock market and investors' bids on prices are a way for managers to get a sense of what investors like or approve of. Capital budgeting tools have a central role both in the theory and practice of managerial finance. In theory, managers ought to maximize the value of their firm and only invest in projects they expect will have a positive net present value. In practice, executing this theoretical implication is not simple as it requires careful estimation and evaluation of the present value of every project under consideration.

A key way for managers to evaluate the present value of potential projects is to uncover the cost of financing the project, also known as the firm's cost of capital. The cost of capital is the expected rate of return that investors require for investing in a certain project or financial instrument, and is directly related to the risk associated with a particular project or group of projects. CAPM's role in strategic financial management is to provide a method of assessing the riskiness of cash flows from a project, and an estimate of the relationship between risk and the cost of capital. According to CAPM, a project's required rate of return can be formulated as a linear function of the project's beta. Thus, CAPM can help managers evaluate the acceptability of a project by providing a benchmark against which to compare the project's internal rate of return.

As Jagannathan and McGrattan (1995) point out, if CAPM captures investors' behavior adequately, then historical data should reveal a positive linear relationship between the average return on financial assets and their betas. As well, no other measure of risk should be able to explain differences in aver-

age returns across financial assets that are not explained by CAPM betas. Jagannathan and McGrattan (1995) conclude that empirical studies of CAPM have supported the model on both of the preceding points, thus making CAPM an appropriate theoretical model by which managers can make efficient and effective strategic decisions.

Concluding Remarks

In summary, we have shown that CAPM does indeed reflect the activities of managers. Managerial actions, however tactical, strategic, or normative in nature, do impact on risk premiums and are priced by CAPM, even though the actions are executed on a firm-specific basis. Managers' decisions and actions can protect firms from environment and market forces in ways that are valuable to, and inimitable, by investors. Similarly, managers' decisions and actions can also improve earnings streams, free cash flow, net income, and other financial benchmarks that are indicators of performance. Finally, managerial actions are noted and considered by equity markets in their pricing of firms' stock. Thus, to imply that financial theory or its models relegate management to the "irrelevant" category is what would import risk to a firm. It is important for theoreticians and managers to recognize that equity markets will reward managerial behavior. Therefore, strategic management does make a meaningful difference in firm value, and finance theory recognizes and prices this difference.

In consideration of the debate on the usefulness of CAPM, beta may or may not be an unreliable proxy of firm risk. One caveat we would like to point out is that CAPM only captures or measures systematic risk when it captures the efficient market portfolio. The proxy used for the market portfolio, and the estimated beta derived from it, may not be perfectly efficient, and thus may not truly measure a firm's sensitivity to market-wide factors. A further complication is that betas are not stable over time. Thus, any reference that suggests that beta always captures and perfectly parses systematic and unsystematic risk is incorrect. However, as Jagannathan and McGrattan (1995) point out, CAPM does capture investors' behavior adequately, and explains the differences in average returns across financial assets better than or as well as any other measure of risk. Thus, we agree with Chatterjee, Lubatkin, and Schulze (1999) that researchers should proceed with caution when using any abstract measure of performance because that they should extract meaning from the theoretical implications of the measure. However, all theoretical models are abstract representations of reality and thus, will have some slight imperfections or deviations from reality.

Endnotes

1. We are only examining risk that affects sales, not financing.
2. Unless the two assets' returns are perfectly correlated.

References

Amihud, Y., Christensen, B. J., and Mendelson, H. (1992). *Further evidence on the risk-return relationship*. Working Paper No. S-93-11. Salmon Brothers Center for the Study of Financial Institutions. New York.

Bettis, R.A. (1983). Modern financial theory, corporate strategy, and public policy: Three conundrums. *Academy of Management Review*. 8: 549-563.

Black, F. (1993). Beta and return. *Journal of Portfolio Management*. 20: 8-18.

Breen, W.J., and Korajczk, R.A. (1993). *On selection biases in book-to-market based tests of asset pricing models*. Working Paper No. 167. Northwestern University Graduate School of Management. Evanston.

Chatterjee, S., Lubatkin, M.H., and Schulze, W.S. (1999). Toward a strategic theory of risk premium: Moving beyond CAPM. *Academy of Management Review*. 24 (3): 556-567.

Fama, E.F., and French, K.R. (1992). The cross-section of expected stock returns. *Journal of Finance*. 47: 427-465.

Grinold, R. C. (1992). Is beta dead again? *Financial Analysts Journal*. 47: 427-465.

Jagannathan, R., and McGrattan, E.R. (1995). The CAPM debate. *Federal Reserve Bank of Minneapolis Quarterly Review*. 19 (4): 2-17.

Jagannathan, R., and Wang, Z. (1993). *The CAPM is alive and well*. Research Department Staff Report. 165. Federal Reserve Bank of Minneapolis.

Jagannathan, R., and Wang, Z. (1996). The conditional CAPM and the cross section of expected returns. *Journal of Finance*. 51 (1): 3-53.

Kothari, S.P., Shanken, J., and Sloan, R.G. (1995). Another look at the cross-section of expected stock returns. *Journal of Finance*. 50: 185-224.

Markowitz, H. (1952). Portfolio selection. *Journal of Finance*. 7: 77-91.

Modigliani, F. and Miller, M. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review*. 48: 261-297.

Roll, R. (1977). A critique of the asset pricing theory's tests. *Journal of Financial Economics*. 4: 129-176.

Sharpe, W.F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *Journal of Finance*. 19: 425-442.

Subscribe to JCIM with this form.

Journal of Comparative International Management
Management Futures
297 Kimble Dr.
Fredericton, N.B.
Canada E3B 6Y1

Phone: (506) 454-1310
Cell: (506) 471-4329
Fax: (506) 455-8421
E-mail: jcim@managementfutures.com

Rates: *(Please circle one)*
Individual U.S. $50
Institution U.S. $100

U.S.A./Mexico – Add $10/volume

Calendar year subscription only. Prepayment required.

Please enter my subscription to *Journal of Comparative International Management* for the _____ year.

Name _____

Address _____

_____

City _____ Postal Code _____

Country _____ Telephone _____

Fax _____ E-mail _____