# Emerging Business Theories for Educators and Practitioners

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Edited by

Maureen L. Mackenzie
and
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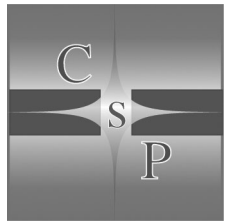


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# PREFACE

This textbook brings together twenty-four papers that were presented at the 2006 Annual Meeting of the Northeast Business and Economics Association. The editors of this book were the conference chair and the proceedings editor. There were close to one hundred papers presented at the conference, and the editors have selected those papers where the authors, who come from both academic and corporate environments, have articulated new, groundbreaking ideas in business disciplines.

The book is divided into seven content sections: finance, accounting, economics, management, marketing, computer information systems, and business education - with introductions to each section that identify the common threads that link the various papers to the importance of emerging theories in their respective disciplines. Our purpose in briefly profiling every paper in these introductions is to establish a context for how the different research topics can be best utilized in the classroom. This pedagogical feature is clearly one of the book's strengths. Many of the papers are multi-disciplinary, which enhances the applicability of the topics covered.

Another unique feature of the book is that the papers included are shown in the format in which they appeared in the conference proceedings. In other words, rather than using the full papers, the book uses condensed versions of the papers, which range from four to ten pages. This approach has two important benefits:

- It allows the editors to include a greater number of papers, with a greater diversity of theories.
- Traditional research papers, which can be considerably longer and more complex, might not be useful for instructional purposes.

Some of the best emerging research is presented at professional and academic conferences, and one of our goals was to capture this in a textbook. For its various topics, it incorporates a problem definition, research methodology, results and discussion. One of the primary purposes of *Emerging Business Theories for Educators and Practitioners* is to provide insight into how new knowledge is created.

# PART I:

# FINANCE

# UNDERSTANDING INVESTMENT BEHAVIOR

CAROLYN SPENCER, PH.D.

As always, the global financial markets are an exciting topic to study and investigate, not only from a theoretical standpoint, but also from a pragmatic one. When a researcher can not only satisfy the quest for knowledge but at the same time possibly financially benefit from the effort, it makes the journey that much more intriguing. In fact, many students enter the study of finance precisely for this reason. They are excited about the study of making money because they themselves want to make money.

As financial managers, students, or researchers, we are constantly looking for the secrets to successfully invest in the world financial markets. As these markets become more integrated and efficient, investors are becoming savvier to what constitutes a successful investment strategy. No longer content with just capital appreciation or investment income, some investors are also seeking strategies that accomplish diversification through social responsibility, incentives that redirect management behavior, understanding of the psychological variables that affect market performance and the determination of consistent financial performance factors. The investment manager that recognizes these trends and integrates them into their investment strategies should be at a competitive advantage to those investment managers who ignore these important developments.

This section of the book examines these timely concepts by presenting research that investigates and applies these topics within the financial market framework. Always with an eye to the practical implementation of their research, the authors present their work such that the investment manager may use the information in forming a successful investment strategy. This bridging of the theoretical and practical is especially useful for students who tend to want to be able to monetize their education as soon as possible.

The first paper is titled "Socially Responsible Mutual Funds and Portfolio Diversification" by **Miranda Lam**. The paper discusses the timely topic of socially responsible mutual funds. These mutual funds invest in firms whose corporate and public policies have demonstrated a commitment to social values. Examples of these policies are a firm's commitment to human rights, labor relations or environmental concerns. Some socially responsible mutual funds do not invest in certain industries, such as gambling and tobacco. Regardless of the specific investment strategy used, the driving motive behind socially responsible mutual funds is to meld the financial objectives of investors with the investors' personal concerns and social goals. As investors become more sensitive to social global events around them, more of them are seeking investment vehicles that not only accomplish the objectives of return and diversification, but ones that do so while upholding specific social goals.

Dr. Lam's study addresses an important question: is an investor who desires to invest in only socially responsible mutual funds adequately protected through risk diversification? Logically, if an investor is limiting their choices from the universe of available efficient investments, they may not be maximizing their diversification potential. Auspiciously, the conclusion of this paper is that an investor can be properly diversified by investing in socially responsible mutual funds, as long as his or her investment portfolio is made up of five to six different mutual funds. This is an important contribution to investment decision making since it provides evidence to financial advisors who can recommend socially responsible investing to their clients as long as this specific quantifiable requirement is met. With the increasing proliferation of these socially responsible mutual funds, the investor can be assured of enough choices to accomplish the diversification objective.

The second paper is titled "Rich Stock, Poor Stock: A Strategy for Improving the Portfolio Selection Process" by **H. Thomas O'Hara** and **Shawn T. Samuelson**. This study adds to the previous research the authors performed by determining what financial factors will increase firm financial performance on a long term investment horizon. Using the authors' investment strategy developed in the paper, every $1 invested would increase to $2.44

over a ten year investment period, while the same investment in the S&P 500 would yield only $1.88.

While it may not be a surprise that the authors' findings confirm that strong earnings and cash flow increase shareholder value, the study makes a significant contribution by finding that firms can also maximize shareholder wealth by increasing dividends by a discrete amount (9% annually). Since managers are constantly looking for a "secret recipe" for shareholder wealth maximization, this conclusion could be enormously helpful to managers in that they have a specific goal to try to accomplish in terms of dividend policy decisions. One, of course, needs to be careful in a blanket belief of this assertion as further research needs to be performed to confirm the authors' results. Nevertheless, the paper contributes significantly to the literature on financial variables and stock price performance.

In the next paper, "Investor Sentiment and the Option Pricing Model" by **Doina G. Vlad** and **Jim Musumeci**, the authors have designed a model that measures the relationship between investor sentiment and the volatility of stock option prices. Traditionally, it was assumed that investors' sentiments tended to be uncorrelated with each other. Therefore, the pessimism felt by some investors was neutralized by the optimism felt by others. However, recent research has confirmed that this offsetting of market opinions many times does not occur as investors often may have correlated or converged sentiment. This implies then that investor sentiment is a risk that should be quantified in asset pricing models. As the magnitude of investor sentiment increases, so there too does the volatility of asset prices.

The authors demonstrate that an investor's behavior is affected by non-fundamental variables and that commonly used market efficiency models such as the Capital Asset Pricing Model (CAPM) may be underpricing systematic risk since there is no specific measurement of investor sentiment included in this model. Considering the already voluminous amount of research that has been dedicated to the shortfalls of the CAPM model, this research is important in that the authors demonstrate that the "noise traders" (uninformed investors) in the options markets are having an important impact on option premiums that has not been previously

addressed. Therefore, the investment manager needs to be cautious about using any asset pricing models that do not control for investor sentiment.

In final paper of this section, "Employee Ownership and Firm Financial Performance" by **Rosemary DeRiso** and **Nina Sarkar**, the topic of Employee Stock Ownership Plans (ESOPs) is investigated in how they may affect the profitability of the firm. The enormous growth of ESOPs is evident in almost every major publicly held corporation in America. Theoretically, by implementing ESOPs, the firm is aligning the interests of managers and stockholders and the efficiency of the firm should increase. Potential agency costs, either intentional or unintentional, of management's actions within the firm should be reduced and the firm's performance should be enhanced. Of course, the recent corporate scandals such as the debacles of Tyco and Enron (firms that had established extensive ESOPs for their employees) do not seem to support this hypothesis, but we assume (hope!) they are part of an extremely small minority of firms.

Somewhat surprisingly, the authors found that only when profitability was measured by return on assets (ROA) did the presence of ESOPs have any effect on firm performance. This may be because this financial measure is a better measure of asset efficiency than are the other two variables that were used, return on equity (ROE) and net profit margin. Even though on the surface it appears that the benefits of ESOPs may be mixed, the authors do recognize the value of ESOPs for firms as an effective method to communicate to employees their importance within the organization.

All of these papers contribute to the practitioner's and student's education in trying to understand and capitalize on market behavior. Will the investment manager ever be able to develop a successful investment strategy with certainty? Highly unlikely, but it is this uncertainty that makes the financial markets and the study of them so challenging and ultimately extremely interesting and gratifying.

# CHAPTER ONE

# SOCIALLY RESPONSIBLE MUTUAL FUNDS AND PORTFOLIO DIVERSIFICATION

MIRANDA LAM, PH.D.

## Abstract

Socially responsible (SR) mutual funds continue to gain popularity despite potential inferior performance due to constraints imposed by SR screening. As of 2006, there are 201 SR funds with over $179 billions in total assets. Past research on SR mutual funds have focused on performance and most studies have found that mutual funds with explicit SR objectives perform similarly to other actively managed mutual funds without SR constraints. This is interpreted as good news to socially conscious investors. In addition to risk-adjusted performance, investors are also concerned about risk. This study focuses on the risk characteristics of SR funds. Can an investor be well-diversified if she restricts her portfolio to socially responsible funds only? If yes, how many socially responsible funds are needed to create a well-diversified portfolio?

## Introduction

In a Markowitz framework (1952), imposing socially responsible constraints on the security selection process reduces the investment opportunity set and the resulting portfolio will be less efficient. However, in a market with information asymmetry and indirect external costs, socially responsible objectives may serve as a signal distinguishing managerial abilities and SR investments will produce superior financial performance. Not surprisingly, the

debate on the merits of SR investments has focused on the impact on performance. The majority of studies on performance, including Hamilton, Jo, and Statman (1993), Mallin, Saadouni and Briston (1995), Kurtz and DiBartolomeo (1996), Gregory, Matatko, and Luther (1997), Guerard (1997), Reyes and Grieb (1998), Statman (2000), Brunia, Plantinga, and Scholtens (2002), Orlitzsky, Schmid, and Rynes (2003), Bauer, Koedijk, and Otten (2005), and Derwall, Guenster, Bauer, and Koedijk (2005), show that mutual funds with explicit socially responsible (SR) objectives perform similarly to other actively managed mutual funds without SR constraints. Recently, Geczy, Stambaugh and Levin (2003) showed that while SR mutual funds performed only slightly inferior to a market indexing strategy, more sophisticated fund selection strategies that optimize over size, value, momentum and historic performance, revealed that SR constraints imposed higher costs, measured in certainty equivalent returns, than previously documented.

The interesting trend is that despite the potential costs of socially responsible constraints, SR mutual funds continue to gain popularity. The Social Investment Forum (2006) reported that in 2005 there are 201 socially screened mutual funds managing $179 billions in total net assets, compared to only 55 funds with $12 billions in assets a decade ago. In addition to mutual funds, other socially screened separate accounts total over $1.5 trillion in assets in 2005. The growth rate of SR mutual funds is more than 6.4 times that of other mutual funds over the same period. Note that the growth rate of other mutual funds is computed using data from the 2006 and 1996 Investment Company Fact Book. (Investment Company Institute 2006; Investment Company Institute 1996.) Bollen (2006) found that past returns alone could not fully explain this influx to SR mutual funds. There also abound anecdotal incidents of individuals, small institutions such as church endowments and large institutions such as CalPERS[1] who extend their socially responsible principles into their investment policies.

While performance has been the focus of numerous studies, the risk characteristics of socially responsible (SR) mutual funds have

[1] California Public Employees' Retirement System

received limited attention. The goal of this study is to remedy this deficiency. Given the growing popularity of SR funds, understanding the risk characteristics is important to individual investors and particularly to financial advisors and institutional investors. Though an investor may willingly and knowingly accept lower expected returns for social good and personal utility, it will be imprudent if the financial advisor does not alert a client to special risk considerations. This study seeks to address the following questions. Can an investor be well diversified if he or she restricts the portfolio to socially responsible funds only? If yes, how many socially responsible funds are needed to create a well-diversified portfolio? If not, how much can a portfolio be designated to SR mutual funds and still be well-diversified? The findings of this study will be of particular interest to investors and investment advisors.

## Data and Methodology

A simulation analysis is used to examine the degree of diversification provided by SR mutual funds. The sample includes large stock mutual funds reported by the Social Investment Forum (2006) and Morningstar (2006) with at least 5 years of monthly return history. Even though the SR mutual funds data is exposed to survivorship bias, the impact of survivorship bias will be important if the mortality rate of SR mutual funds is systematically higher than other funds, resulting in greater truncation of downside risk. Given that investors in SR mutual funds are less likely to depart following negative returns (Bollen 2006), there is no a priori reason to assume a higher mortality rate for SR mutual funds. In fact, the opposite appears to be more likely.

The key choice variable in the simulations is the number of funds in the portfolio, ranging from 1 to 12 funds. The baseline portfolio contains only one mutual fund. This would be the case of an investor with all of his or her wealth in one fund. The baseline portfolio is used only as a point of reference. It is unlikely that a one-fund portfolio is well-diversified regardless of whether SR constraints are applied. O'Neal (1997) found that for typical growth funds, increasing the number of funds in a portfolio from one to six

can reduce risk by 40-70 percent. In this study, two measures of risk are used: average standard deviation of monthly returns and standard deviation of terminal wealth.

For multiple funds portfolios, the simulations repeat 1,000 trials for each portfolio size (1 to 12 funds) using a 5 year holding period. At each trial, *n* mutual funds (*n* = 1 to 12) are chosen randomly to form an equally weighted portfolio and invested for 5 years with $1 initial investment. For each portfolio, the time-series average monthly return (AVGMR), time-series standard deviation of monthly returns (SDMR), and terminal wealth (TW) are computed. Since each simulation consists of 1000 trials, there will be 1000 observations of AVGMR, SDMR, and TW. The two measures of risk: Average Standard Deviation of Monthly Returns (ASDMR), and standard deviation of terminal wealth (SDTW) are computed for each simulation. The following equations detail the calculation of these risk measures.

Average standard deviation of monthly returns,

$$ASDMR = \frac{\sum_{i=1}^{1000} SDMR_i}{1000} \quad (1)$$

where

and $SDMR_i$ is the standard deviation of monthly return from trial i.

Standard deviation of terminal wealth,

$$SDTW = \sqrt{\frac{\sum_{i=1}^{1000} TW_i - \overline{TW}}{1000-1}} \quad (2)$$

where

$TW_i$ is the terminal wealth from trial i.

## Results and Conclusions

Preliminary results (see table 1.1) suggest that increasing the number of SR funds in a portfolio can reduce risk. Table 1.2 contains the return characteristics of the sample of Large Stock SR funds, which includes Large Growth, Large Value, and Large Blend

as classified by Morningstar, within the subcategory of socially responsible funds over a 5 year holding period. Terminal wealth (TW) represents the dollar value at the end of 5 years from a $1 initial investment. During the sample period, TW ranges from 1.1406 to 1.7994, averaging 1.4768. The standard deviation of the TW of the 19 SR funds is 0.2127.

The effects of diversification are examined using the simulation technique described in the methodology section. Table 1.3 shows that as the size of the portfolio increases, standard deviations of TW decreases while average TW remains relatively stable. In fact, just increasing the number of SR funds to 2 reduces the standard deviation of TW by more than 30%. Increasing the number of SR funds to 6 in the portfolio can reduce risk by more than 67%. Most of the diversification benefits appear to be achieved by a 5 or 6 fund portfolio. Results based on standard deviations of monthly returns are consistent with results using TW, though less dramatic. The standard deviations of monthly returns range from 0.0553 to 0.0273, averaging 0.0392 for the 19 SR Large Stock funds. The average standard deviations from the simulations decrease monotonically when the portfolio size increases from 1 to 6 funds. These preliminary results suggest that if investors choose to invest exclusively in socially responsible mutual funds, they should form a diversified portfolio of 5 to 6 funds. The findings on portfolio size and diversification for socially responsible mutual funds are similar to those for growth funds reported by O'Neil (1993).

The sample of Socially Responsible Funds below (table 1.1) is selected from funds reported in the Social Investment Forum (2006) and www.morningstar.com. Data for Net Asset Value and Average Expense ratios are the latest values reported as of September 30, 2006 and obtained from www.morningstar.com.

**Table 1.1**
**Summary Characteristics of Socially Responsible Fund Sample**

| Category | Number of Funds in Each Category | Average NAV N | Avg. Expense |
|---|---|---|---|
| Foreign Large Blend | 2 | 314.50 | 1.72 |
| High Yield Bond | 1 | 74.00 | 1.50 |
| Intermediate-Term Bond | 4 | 176.50 | 1.01 |
| Large Blend | 11 | 403.18 | 1.03 |
| Large Growth | 14 | 339.57 | 1.23 |
| Large Value | 2 | 35.00 | 1.28 |
| Long-Term Bond | 1 | 41.00 | 0.93 |
| Mid-Cap Blend | 3 | 2,337.00 | 1.15 |
| Mid-Cap Growth | 3 | 132.67 | 1.69 |
| Moderate Allocation | 3 | 727.33 | 1.54 |
| Muni Calif. Interm/Sh | 1 | 19.00 | 0.68 |
| Short-Term Bond | 2 | 515.50 | 0.78 |
| Small Blend | 1 | 170.00 | 1.71 |
| Small Growth | 4 | 83.50 | 1.52 |
| World Stock | 4 | 475.25 | 1.45 |
| **All Categories** | **56** | **424.20** | **1.25** |

The table below (table 1.2) contains sample characteristics of SR mutual funds in the Large Growth, Large Value, and Large Blend categories by Morningstar. Monthly price data from 8/1/01 through 9/1/06 is from Yahoo. Monthly return is computed as $(P_t-P_{t-1})/P_{t-1}$. Terminal wealth represents the growth of $1 investment from 8/1/01 through 9/1/06.

**Table 1.2**
**Large Stock Socially Responsible Mutual Funds**

| Socially Responsible Mutual Funds | Average Monthly Return | Standard Deviation | Terminal Wealth |
|---|---|---|---|
| Calvert Large Cap Growth A | 0.0072 | 0.0428 | 1.7153 |
| Calvert Social Investment Equity | 0.0049 | 0.0372 | 1.5583 |
| Calvert Social Index A | 0.0035 | 0.0432 | 1.6846 |
| Dreyfus Premier Third Century | 0.0006 | 0.0411 | 1.4898 |
| Domini Social Equity | 0.0036 | 0.0398 | 1.5231 |
| Women's Equity | 0.0043 | 0.0327 | 1.2826 |
| Dow Jones Islamic Index K | 0.0030 | 0.0420 | 1.1406 |
| Dow Jones Islamic Index K | 0.0018 | 0.0357 | 1.7994 |
| MMA Praxis Core Stock A | 0.0027 | 0.0316 | 1.3338 |
| Neuberger Berman Socially Responsible | 0.0081 | 0.0398 | 1.1817 |
| New Covenant Growth | 0.0046 | 0.0397 | 1.2688 |
| Parnassus | 0.0019 | 0.0553 | 1.7904 |
| Parnassus Equity Income | 0.0067 | 0.0324 | 1.4282 |
| Legg Mason Partners Social Award | 0.0025 | 0.0273 | 1.3060 |
| USAA First Start Growth | 0.0011 | 0.0440 | 1.5806 |
| Vanguard FTSE Social Index Inv | 0.0047 | 0.0431 | 1.7368 |
| Winslow Green Growth | 0.0023 | 0.0453 | 1.3129 |
| Winslow Green Growth | 0.0046 | 0.0330 | 1.6419 |
| Winslow Green Growth | 0.0041 | 0.0381 | 1.2843 |
| Average | 0.0038 | 0.0392 | 1.4768 |
| Maximum | 0.0081 | 0.0553 | 1.7994 |
| Minimum | 0.0006 | 0.0273 | 1.1406 |
| Standard Deviation of Terminal Wealth | | | 0.2127 |

The table below (table 1.3) contains simulation results of SR mutual funds in the Large Growth, Large Value and Large Blend categories by Morningstar in a 5 year holding period. Monthly price data from 8/1/01 through 9/1/06 is from Yahoo. Monthly return is computed as $(P_t-P_{t-1})/P_{t-1}$. Terminal wealth represents the growth of $1 investment from 8/1/01 through 9/1/06.