EMPLOYEE BENEFITS AND STOCK RETURNS: A LOOK AT HEALTH CARE BENEFITS

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ABSTRACT

This study finds firms that pay their employees' health-care premiums earn average positive risk premiums and positive risk-adjusted excess returns. The problem of the study is to analyze risk premiums and risk adjusted returns of an equal-weighted portfolio of firms that pay 100% of their employee's health-care premiums. The results show that the portfolio average risk premiums are positive and greater than the market risk premiums from 2007 to 2011 (except 2008). The portfolio average risk-adjusted excess returns are positive for the 3-year holding period intervals and statistically significant for the 5-year holding period. The implication of this study is that it is important for firms to invest in their people in the form of competitive compensation package, and this investment will pay off in the long run as evidenced from the capital market.

JEL: G11, G12, G14

KEYWORDS: Risk premiums, Risk adjusted excess returns, Health-care premiums

INTRODUCTION

People, the key strategic assets that are valuable, rare, imperfectly imitable and unsubstitutable, are sustainable source of competitiveness (Barney & Wright, 1998; Gorman, Nelson, & Glassman, 2004; Lopez-Cabrales, Valle, & Herrero, 2006; Shee & Pathak, 2005; Wright, McMahan, & McWilliams, 1994). In the knowledge-based economy, companies are energized more than ever by their human resources to compete and generate sustained competitive advantage in the rapidly and dynamically changing market place because success of the firms is directly determined by the quality of their human resources. To strategically attract and retain key talent, firms need to offer competitive benefits in order to reduce turnover rates and increase their people's satisfaction so their superior performance can take place. On average, employees working for companies that offer competitive benefits should be more satisfied with their jobs and are more likely to perform better than those working for firms that do not offer competitive compensation package. Judge, Bono, Thoresen, and Patton (2001) reveal a qualitative and quantitative linkage between employees' satisfaction and job performance.

The current study is to provide empirical evidence from the capital market that firms operating in the knowledge-based economy should be able to have superior benefits and performance in the long run by investing in their people in the form of competitive compensation package. The problem of the study is to analyze risk premiums and risk adjusted returns of an equal-weighted portfolio of firms that pay 100% of their employee's health-care premiums. This study is unique due to the fact that no prior study in the current literature investigates this issue before. This study is also relevant and important in the asset pricing and valuation fields, which are ones of the most popularly researched fields in financial economics. This study furthers our understanding of the various factors affecting stock prices. The implication of this study is that it is better off for firms to invest in their people in the form of competitive compensation package, and this investment will pay off in the long run as evidenced from the capital market. This study also provides important information and implications to the pricing and valuing of assets. In an attempt to challenge the efficient market hypothesis, many researchers have compared the performance of a specialized portfolio to the market index (Anderson & Smith, 2006; Clayman, 1987; Lovisceka & Jordan, 2000; O'Neal, 2000; Staman, 2000; Sum, 2012). The paper is organized as follows.

The second section provides a review of the literature. The third section provides information about the method and data. The results and conclusion are discussed in the fourth and fifth sections, respectively.

LITERATURE REVIEW

Theoretical and empirical establishment in the strategic human resource management literature has put a spotlight on the role of human resources in generating sustained competitive advantage. The resource-based view of the firm (Barney, 1986) theorizes that firms can have sustained competitive advantage over their rivals by providing value-added products and services in a way that is rare and difficult to imitate. The resource-based view of the firm argues that other resources, except human resources, can be used by firms to generate sustained competitive advantage; however, these resources can be easily acquired by the competitors. In this case, it is important to create value by using resources that are rare and cannot be conveniently imitated by competitors are vital for firms. According to the resource-based view of firms, people (human resources) who are a repository of knowledge and skills can be utilized to create value in a way that is rare and hard for rivals to imitate (Barney, 1991). Human resources are the strategic assets for firms meaning that people are "difficult to trade and imitate, scarce, appropriable, and specialized resources and capabilities that bestow the firm's competitive advantage" (Amit & Shoemaker, 1993, p. 36). Finally, people a repository of knowledge and skills are the most valuable and key assets for any firm to compete and create sustained competitive advantage in the marketplace (Barney & Wright, 1998; Gorman, Nelson, & Glassman, 2004; Lopez-Cabrales, Valle, & Herrero, 2006; Shee & Pathak, 2005; Wright, McMahan, & McWilliams, 1994).

In the knowledge-based economy, firms depend more than ever on their people to compete and generate sustained competitive advantage in the market place with ever rapidly changing environment. Success of the firms is directly linked to and determined by the quality of their respective employees. To strategically attract and retain talented employees, firms need to have best work practices, policies and environment in place in order to improve their employees' attitudes and relations, lower turnover rates, and enhance their people's satisfaction. Firms that are successful in attracting and retaining their talented people should have superior benefits and performance, on average. Employee attitudes and relations are important factors for attracting, motivating, and retaining employees (Ostroff, 1992; Ostroff & Bowen, 2000). Judge, Bono, Thoresen, and Patton (2001) document a qualitative and quantitative association between employees' satisfaction and job performance. Fulmer, Gerhard, and Scott (2003) suggest that there is a relationship between firm performance and positive employee relations. Simon and DeVaro (2006) also show that the best companies to work for from 1994 to 2004 have higher customer satisfaction.

Many researchers have attempted to challenge the efficient market hypothesis by comparing the performance of a market portfolio to a specialized portfolio. For example, Lovisceka & Jordan (2000) show that the Morningstar's ten-year five-star general equity mutual funds outperform the S&P 500 in the 1990s. Clayman (1987) show 11 of the 29 companies ranked in the Search for Excellence beat to the S&P 500 index by 100 basis points per year from 1981 to 1985. In addition, a portfolio of the most admired companies in the United States significantly outgains the S&P 500 index from 1983 to 2004 (Anderson & Smith, 2006). O'Neal (2000) reveals that the intermediate-term top-performing sector funds outperform the S&P 500 index from 1989 to 1999. Staman (2000) also finds that a portfolio of socially responsible companies beats the S&P 500 index from 1990 to 1998.

DATA AND METHOD

A list of the best publicly traded companies in the United States that pay 100% of their employees' health premiums consecutively from 2007-2011 is obtained from the Fortune Magazine. The monthly return data are obtained from CRSP database maintained by the University of Chicago accessed through the Wharton

Research Data Services at the University of Pennsylvania. The monthly data related to risk-free rate, size, growth, and momentum factors are obtained from Kenneth R. French's data library located at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

This study constructs an equal-weighted portfolio of publicly-traded companies in the United States that pay 100% of their employee's health-care premiums from 2007 to 2011. Table 1 shows the names of the companies in the portfolio. To compare the portfolio risk premiums to the market risk premiums, equation (1) is used. The single-index model (2) (Sharpe, 1966) and four-factor model (3) (Carhart, 1997) are used to calculate risk-adjusted excess returns on the portfolio.

$$R_{pt} - R_{ft} = R_{mt} - R_{ft} = R_{S\&Pt} - R_{ft} \quad (1)$$

$$R_{pt} - R_{ft} = \alpha_1 + \beta_m(R_{mt} - R_{ft}) + \varepsilon_{t1} \quad (2)$$

$$R_{pt} - R_{ft} = \alpha_4 + \beta_m(R_{mt} - R_{ft}) + \beta_{smb}SMB + \beta_{hml}HML + \beta_{mom}MOM + + \varepsilon_{t4} \quad (3)$$

Where:

R_{pt} = the return on the equal-weighted portfolio in month *t*
R_{ft} = the return on a thirty day T-bill in month *t*
R_{mt} = the return on the CRSP value-weighted index in month *t*
$R_{S\&Pt}$ = the return on the S&P 500 index in month *t*
SMB = the difference between the return on a small-cap portfolio in month *t* and return on a large-cap portfolio in month *t*
HML= the difference between return on a high book-to-market (value-stock) portfolio in month *t* and return on a low book-to-market (growth-stock) portfolio in month *t*
MOM = the difference between return on portfolio with higher year (from month -12 to -2) return and return on portfolio with lower prior year (from month -12 to -2) return
α_1 = The risk-adjusted excess return on the equal-weighted portfolio from the single-index model
α_4= The risk-adjusted excess return on the equal-weighted portfolio from the four-factor model
β_m = the sensitivity of the excess return on the equal-weighted portfolio to the excess return on the CRSP value-weighted index
β_{smb} = the sensitivity of the excess return on the equal-weighted portfolio to a size factor
β_{hml} = the sensitivity of the excess return on the equal-weighted portfolio to a value factor
β_{mom} = the sensitivity of the excess return on the equal-weighted portfolio to a momentum (hot-hand) factor
e_{t1} = random error term: excess return on the equal-weighted portfolio in month *t* not explained by the single-index model
e_{t4} = random error term: excess return on the equal-weighted portfolio in month *t* not explained by the four-factor model

RESULTS

Table 1 shows the list of publicly traded companies in the United States that paid 100% of their employees' health-care premiums from 2007-2011; the list is obtained from the Fortune Magazine. An equal-weighted portfolio of these companies is formed for the analysis of risk premiums and risk adjusted excess returns reported this this study. Various descriptive statistics of the variables are reported in Table 2. Table 3 and 4 show the arithmetic and geometric average risk premiums of the portfolio, CRSP value-weighted index and S&P 500 index. In order to compare portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums, monthly return data are calculated using equation (1). The

portfolio arithmetic and geometric average risk premiums, CRSP value-weighted index and S&P 500 index risk premiums are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period) and 5-year-holding period intervals. Respective arithmetic and geometric average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 3, 4, and 5 of Table 3 and 4. The differences in arithmetic and geometric average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 6 and 7. As shown in Table 3 and 4, the results show that the portfolio arithmetic and geometric average risk premiums are positive and greater than the market risk premiums from 2007 to 2011 (except 2008).

Table 1: Companies in the United States Paying 100% of Their Employees' Health-Care Premiums from 2007-2011

Name of the Companies	Ticker	Industry
EOG Resources	EOG	Oil and Gas Operations
Microsoft	MSFT	Software and Programming
Qualcomm	QCOM	Communications Equipment
Whole Foods Market	WFM	Retail (Grocery)

This list of publicly traded companies that pay 100% of their employees' health-care premium from 2007-2011 is obtain from the Fortune Magazine. An equal-weighted portfolio of these companies is formed for the analysis of risk premiums and risk adjusted excess returns reported this this study.

Table 2: Descriptive Statistics

Variables	Mean	Standard Deviation	# of Obs
Equal-Weighted Portfolio Excess Return	0.01012	0.06701	60
CSCR Value-Weighted Excess Return	0.00082	0.05747	60
Size Factor (SMB)	0.00267	0.02409	60
Growth Factor (HML)	-0.00312	0.02889	60
Moment Factor (MOM)	-0.00161	0.06388	60

This table provides descriptive statistics for the variables used in this study.

Table 5 shows the portfolio average risk adjusted excess returns (alphas). To obtain the portfolio average risk adjusted excess returns (alphas), monthly return data are calculated using equation (2) and (3). The portfolio average risk adjusted excess returns are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period), 5-year-holding period intervals. The portfolio average risk adjusted excess returns from the single-index model are reported in column 3. The portfolio average risk adjusted excess returns from the four-factor model are reported in column 4. As shown in Table 5, the portfolio average risk-adjusted excess returns from the single-index model and factor-model are positive for the 3-year holding period intervals and statistically significant for the 5-year holding period.

CONCLUSION

In the knowledge-based economy, companies are energized more than ever by their human resources to compete and generate sustained competitive advantage in the rapidly and dynamically changing market place because success of the firms is directly determined by the quality of their human resources. Firms, competing and operating in the knowledge-based economy, should be able to have superior benefits and performance in the long run by investing in their people in the form of competitive compensation

package. The current study is to provide empirical evidence from the capital market that firms operating in the knowledge-based economy should be able to have superior benefits and performance in the long run by investing in their people in the form of competitive compensation package. This study constructs an equal-weighted portfolio of publicly-traded companies in the United States that pay 100% of their employee's health-care premiums from 2007 to 2011. In addition to comparing the portfolio risk premiums to the market risk premiums, the single-index model and four-factor model are used to calculate risk-adjusted excess returns on the portfolio. The results show the portfolio average risk premiums are positive and greater than the market risk premiums from 2007 to 2011 (except 2008). The portfolio average risk-adjusted excess returns are positive for the 3-year holding period intervals and statistically significant for the 5-year holding period.

Table 3: Portfolio Arithmetic Average Risk Premiums and Market Risk Premiums

Years	# of Months	$R_p - R_f$	$R_m - R_f$	$R_{S\&P} - R_f$	$(R_p - R_f) - (R_m - R_f)$	$(R_p - R_f) - (R_{S\&P} - R_f)$
2007	12	0.93%	0.25%	-0.06%	0.68%	0.99%
2008	12	-4.13%	-3.85%	-3.93%	-0.28%	-0.20%
2009	12	5.30%	2.49%	1.96%	2.81%	3.34%
2010	12	1.65%	0.05%	1.14%	1.60%	0.51%
2011	12	1.31%	0.02%	0.09%	1.29%	1.22%
2007-2009	36	0.70%	-0.37%	-0.67%	1.07%	1.37%
2010-2011	24	1.48%	0.77%	0.62%	0.72%	0.86%
2007-2011	60	1.10%	0.08%	-0.16%	1.02%	1.17%

This table shows arithmetic average and market risk premiums. To compare portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums, monthly return data are calculated using equation (1). The portfolio arithmetic average risk premiums, CRSP value-weighted index and S&P 500 index risk premiums are calculated for the 1, 3 and 5-year-holding intervals (only 2 years of monthly data included in the calculation for the 2010-2011 period. Respective average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 2, 3, and 4. The differences in arithmetic averages risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 4 and 5. $R_i - R_f$ *= average risk premiums of the equal-weighted portfolio of best companies to work for;* $R_m - R_f$ *= CRSP value-weighted index average risk premiums;* $R_{S\&P} - R_f$ *= S&P 500 index average risk premiums.*

Table 4: Portfolio Geometric Average Risk Premiums and Market Risk Premiums

Years	# of Months	$R_p - R_f$	$R_m - R_f$	$R_{S\&P} - R_f$	$(R_p - R_f) - (R_m - R_f)$	$(R_p - R_f) - (R_{S\&P} - R_f)$
2007	12	0.80%	0.21%	-0.09%	0.59%	0.89%
2008	12	-4.33%	-4.07%	-4.11%	-0.26%	-0.22%
2009	12	5.11%	2.29%	1.76%	2.82%	3.35%
2010	12	1.43%	1.37%	1.00%	0.06%	0.43%
2011	12	1.17%	-0.09%	0.00%	1.26%	1.17%
2007-2009	36	0.45%	-0.56%	-0.84%	1.01%	1.29%
2010-2011	24	1.30%	.64%	0.50%	0.66%	-0.80%
2007-2011	60	0.79%	-0.08%	-0.31%	0.87%	1.10%

This table shows arithmetic average and market risk premiums. To compare portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums, monthly return data are calculated using equation (1). The geometric average portfolio risk premiums, CRSP value-weighted index and S&P 500 index risk premiums are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period) and 5-year-holding period intervals. Respective average risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 2, 3, and 4. The differences in geometric averages risk premiums for the portfolio, CRSP value-weighted index and S&P 500 index are reported in column 4 and 5. $R_i - R_f$ *= average risk premiums of the equal-weighted portfolio of best companies to work for;* $R_m - R_f$ *= CRSP value-weighted index average risk premiums;* $R_{S\&P} - R_f$ *= S&P 500 index average risk premiums.*

The implication of this study is that it is important for firms to invest in their people in the form of competitive compensation package. This investment will pay off in the long run as evidenced from the capital market. There are limitations in this paper. First, this study only uses 5 years of monthly data or 60 total observations. Another limitation is this study relies on the Fortune Magazine methodology to rank publicly traded companies that pay 100% of their employees' health insurance premiums consecutively from 2007 to 2011. Future research should replicate this study by using a richer dataset.

Table 5: Average Portfolio Risk Adjusted Excess Returns

Years	# of Months	Average Risk Adjusted Excess Returns (α_1) from the Single-Index Model	Average Risk Adjusted Excess Returns (α_4) from the Four-Factor Model
2007	12	0.61%*	-1.35%
2008	12	-1.24%	0.10%
2009	12	3.33%**	2.84%
2010	12	-0.08%	-0.38%
2011	12	1.29%*	1.25%
2007-2009	36	1.05%	0.96%
2010-2011	24	0.58%	0.66%
2007-2011	60	0.93%**	0.92%*

*This table shows average portfolio risk adjusted returns. To obtain the portfolio average risk adjusted excess returns (alphas), monthly return data are calculated using equation (2) and (3). The portfolio average risk adjusted excess returns are calculated for the 1-year holding, 3-year-holding (only 2 years of monthly data included in the calculation for the 2010-2011 period), 5-year-holding period intervals. The portfolio average risk adjusted excess returns from the single-index model are reported in column 2. The portfolio average risk adjusted excess returns from the four-factor model are reported in column 3. * Significant at 10% level; ** Significant at 5% level.*

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BIOGRAPHY

A native of Cambodia, Dr. Vichet Sum is currently an Assistant Professor of Management in the Department of Business, Management and Accounting; Dr. Sum is AACSB academically qualified. His areas of specialization include Financial Theories, Financial Economics and Econometrics, Financial Management, Managerial and Financial Accounting, Real Estate Finance, Strategic Human Resource Training & Development, Development Economics, Inferential Statistics, Industrial Management, and

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