Equity Holding Preferences of U.S. based Insurance Companies in Low Interest Rate Periods

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EXECUTIVE SUMMARY

This paper addresses two critical issues: First, it analyzes the effect of changing interest rates on institutional equity holding preferences. The ownership of publicly traded companies by U.S. based insurance companies is empirically examined to see if ownership changes depending on the interest rate environment. Second, this paper investigates the firm and industry characteristics that determine insurance companies' ownership and how this relationship changes over different interest rate environments. Empirical results indicate that during lower interest rate periods, insurance companies seem to favor firms which exhibit positive short term momentum and have strong dividend yields to compensate for lower yields (and income) in the bond market. Insurance companies seem to seek less idiosyncratic risk (greater diversification) but also want a higher beta portfolio (greater systematic risk) during periods of lower interest rates.

The advent of persistently low interest rates in countries such as Canada, the UK and the US has spawned a number of studies on how this new paradigm affects both asset returns and investment decision making.

The issue has been the subject of intense coverage in business publications and online outlets. However, most papers on the asset allocation implications of low interest rates are opinion pieces with little empirical support. This paper offers some new insight into the behavior of asset managers by investigating the impact of changes in the interest rate environment on the holdings of insurance companies in the United States. This study examines the publicly traded equity holdings of US insurance companies and, through exhaustive empirical analysis, attempts to identify how insurers position their portfolio in response to changes in the interest rate environment. This analysis is achieved by examining the institutional ownership of all publicly traded companies and investigating how ownership changes over time. A further objective is to analyze the firm characteristics that determine the insurance company's ownership and how this relationship changes across different interest rate environments. The firm characteristics that are studied include firm size, dividend yield, return momentum, firm beta (exposure to market risk), measures of financial distress and several other accounting ratios. We analyze the relation between institutional investor's ownership and the firm characteristics while controlling for different economic conditions, using both parametric and non-parametric techniques.

As institutional investors adjust their exposure and investment styles in response to an extended period of low interest rates, the obvious concern is what type of dislocations and potential bubbles they might create in asset prices. Very low nominal short-term rates can impact financial assets by encouraging investors to increase risk taking and promote the emergence of asset price bubbles in public equity markets as well as in real assets such as commercial and residential housing. Furthermore, a persistently low interest rate environment can have other negative implications for institutional investors. Antolin, Schich and Yermo (2011)[1] argue that the solvency status of insurers and pension funds – which was badly damaged during the crisis – could fail to improve or even show

further deterioration as a result of low interest rates. Berdin and Grundl (2014)[2] contend that low interest rates are becoming a threat to the stability of the life insurance industry, especially in countries such as Germany, where products with relatively high guaranteed returns sold in the past still represent a prominent share of the total portfolio. Low interest rates have also pushed investors towards high yield corporate bonds to compensate for the lower returns on Government securities. Becker and Ivashina (2014)[3] identify systematic "reaching for yield" by insurance companies whereas Choi and Kronlund (2015)[4] demonstrate that fixed income mutual funds tend to favor bonds with greater credit risk in low interest rate environments. These investment style drifts during periods of lower yields might seem quite rational and intuitive, but sustained periods of lower yields can create pricing dislocations and financial bubbles.

In order to better understand the investment behavior of insurance companies, we investigate their holdings using the 13-F filings obtained from Thomson Reuters. These are quarterly filings that are made by all financial institutions in the US and contain information related to their holdings of publicly traded firms. We combine this database with financial statement information (Compustat) and equity market returns (CRSP) for each publicly traded firm allowing us to analyze trends in the investment behavior of insurance companies. From 1980 to 2014, the dollar amount of holdings increased 17 fold, most significantly during the 1990s, and the dollar value of holdings per stock showed a material increase over time. Concomitantly, the number of stocks held by insurers approximately tripled. However, the average ownership concentration per stock decreased substantially during this period.

The first goal is to compare the institutional investor's ownership level across each firm characteristic. Specifically, all firms listed in the 13-F filing are ranked according to their characteristics and sorted into quintiles. We report the average of the characteristic and the institutional ownership for each quintile. This allows us to compare the effect of each firm characteristic on institutional ownership. We perform the same analysis for two different sub-periods that we characterize as high and low interest rate periods. This allows us to detect any differences in the patterns of ownership sorted by different firm characteristics. This sorting approach allows us to have a basic understanding of the relation between ownership and firm characteristics and how it changes over time with changing interest rates.

The analysis over the two sub-periods, as shown in Table 1, produces evidence of some interesting adjustments made by insurance companies as a result of changes in the interest rate environment The most notable change is that in the latter period holdings seem to be more driven by momentum, in particular short-term 3-month returns. We observe that the difference in the extreme quantiles is significant when holdings are sorted by 3-month returns in the second sub-period, whereas they were not so in the higher interest rate period.

Regardless of the interest rate environment, this analysis indicates that insurance companies have a preference for firms with higher market

Table 1. Quantile analysis for sub-periods (1980-2008 and 2009-2014)

	High interest rate (1983/09/30-2008/12/31	Low interest rate (2009/03/31-2014/12/31)
Market Cap	+	+
Div. Yield	+	+
3-month return	+	+
Book-to-Market	-	+
Current Ratio	-	-
Leverage Ratio	-	-
Turnover Ratio	+	+
Idiosyncratic risk	-	+
Systematic risk	-	-

Table 1 presents the difference between extreme quintiles. Green shaded areas indicate statistically significant positive impact. Red shaded areas indicate statistically significant negative impact.

Table 2: Regression of institutional ownership on firm characteristics

	Entire sample 1983/09/03-2014/12/31	High interest rate (1983/09/30-2008/12/31	Low interest rate (2009/03/31-2014/12/31)
Market Cap	+	+	+
Div. Yield	+	+	+
3-month return	-	-	+
Book-to-Market	+	+	+
Current Ratio	-	-	-
Leverage Ratio	+	+	-
Turnover Ratio	+	+	+
Idiosyncratic risk	-	-	-
Systematic risk	+	+	+

The sign of the relationship between the firm characteristics and holdings is presented in the Table. Shaded areas indicate statistical significance. Green is positive and red is negative.

capitalization and lower leverage ratios. They also prefer higher dividend yield and lower current ratios, although these latter two characteristics do not have a statistically significant impact on ownership.

Parametric analysis

Our second goal is to conduct rigorous statistical analysis on the shifts in insurance companies' ownership during different interest rate environments and relate them to firm characteristics. In order to have more comprehensive analysis on characteristics we run regressions of institutional ownership on the firm characteristics while controlling for other economic variables. For our estimations, we use a linear ordinary least squares model. The results are summarized in Table 2.

When we consider the entire sample period, we note that all firm characteristic's have a significant impact on holdings with the exception of the leverage ratio and the return on equity. Interestingly, we note that the relationship between holdings and both the 3-month and 12-month returns are negative over the entire sample, indicating a rather contrarian behavior by insurance companies. The other relationships are pretty intuitive, as insurers tend to hold firms that have larger market capitalization, higher book to market ratios, and that pay larger dividends. On average, insurance companies seem to favor systematic risk and reduce holdings with greater idiosyncratic risk.

When we compare the results for the two sub-periods, we note that the sign of the coefficient for the 3-month returns is negative for the first sub-period but significant and positive for the second sub-period. During lower interest rate periods, there appears to be a bit of positive short-term momentum driving the holdings, however the relationship remains negative between holdings and the 12-month returns. Not surprisingly, the coefficient for dividend yield is larger and more significant over the second (low interest rate) period, as insurers look to compensate lower yields (and income) in the bond market. Although the coefficients for idiosyncratic and systematic risk have the same sign and level of significance in the two sub periods, the amplitude of the relationship between these risks and holdings more than doubles. Insurers seem to want less idiosyncratic risk (greater diversification) but also want a higher beta portfolio during periods of lower interest rates.

Overall, our work suggests that US-based insurance companies do indeed alter their portfolio holdings of publicly traded equity during protracted periods of low interest rates. Being sensitive to the drop in yields of their fixed income holdings, they prefer higher income yielding assets. Further, from a risk management perspective they prefer higher diversification but increase the systematic risk of their portfolios in order to earn higher returns.

For a more detailed look at this work, please refer to the full research paper posted on the GRI website.

References

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Biography

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Chandrasekhar Krishnamurti is a Professor, the research director and the Head of Finance at University of Southern Queensland's School of Commerce. He holds a BE from the University of Madras and a Ph.D. from the University of Iowa. Krishnamurti is also a CFA charter holder. His research focuses on market microstructure, corporate governance and corporate finance.