Pension Plan Funding and Stock Market Efficiency

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Accounting regulations require that if a loss of more than 10 percent occurs in a pension plan, the company has to amortize the loss starting from the next fiscal year. In addition, regulations also require a mandatory contribution if the plan is severely underfunded. These regulations have obvious negative impacts on earnings and cash flows. In an efficient market, the valuation of a company should factor in these future costs and cash outflows. The authors, however, find that the market has failed to consider these variables and argue that the market significantly overvalues companies with severely underfunded pension plans.

A pension plan is defined to be underfunded if the future value of pension assets (FVPA) is smaller than the projected benefit obligation (PBO). Because the same dollar amount of underfunding has different implications for these variables depending on the size of the company, the authors introduce the funding ratio (FR) by dividing the difference between the FVPA and the PBO by the market capitalization of the company. In this study, a selected group of NYSE, Amex, and NASDAQ companies sponsoring defined-benefit pension plans with at least two years of accounting data between 1980 and 2002 are sorted into 11 portfolios according to the level of FR. The first portfolio contains the most underfunded companies, and the 11th portfolio contains all the overfunded companies. Because the most underfunded companies have the smallest size and highest book-to-market ratio, these companies are generally small-cap, value stocks. Results show that the portfolio with the most underfunded companies has low raw returns relative to portfolios of companies with healthier pension status. This phenomenon lasts for five years after the emergence of the large underfunding, and the risk-adjusted returns of this portfolio are negative. In order to isolate the value

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premium, the denominator of FR is changed from market capitalization to total assets. The result is still very similar.

Based on the evidence, the authors conclude that investors did not pay enough attention to the implications of the current underfunding for future earnings and cash flows. As a result, investors are surprised by the negative impact. The most underfunded companies seem to have difficulty satisfying the funding requirement because of their poor economic performance and inability to borrow. Among the underfunded companies, the most leveraged ones actually receive larger price adjustments at the time of the earning surprise. In addition, the authors also conclude that the overvaluation related to pension underfunding is not related to other asset-pricing regularities, such as the size effect, the value premium, return momentum, and the accruals anomaly. This overvaluation, therefore, is really an anomaly.

This anomaly has some serious implications. Managers at overvalued and underfunded companies might choose to issue equity instead of debt as a financing choice. As a result, the choice of capital structure might be negatively affected. This anomaly also creates inefficiencies in the allocation of resources. It is necessary to reassess the comparison between the U.S. pension system and the other international alternatives from a policy standpoint. The authors suggest that regulators increase the awareness of the implications of pension liabilities for company value. They further recommend that the accounting system be reformed to allow pension funding status to be reflected in income statements without any delay and assert that the benefit of information diffusion would be higher than the costs of higher earnings volatility.

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