
Catastrophe Bonds: Analysis of the Performance as an Asset Class and Evaluation of Diversification Benefits

Over the last decades we have seen a surge in the number of natural catastrophes occurring per annum, this puts immense pressure on financial markets and insurance companies. Catastrophe bonds (CAT bonds) are a major category of insurance linked securities. CAT bonds are financial instruments that transfer catastrophic risk from companies and governments to the capital markets. These securities are an effective risk transfer mechanism that provide reinsurance coverage to companies that otherwise wouldn't be able to survive such losses.

The aim of this paper is to look at these risks, and to assess the characteristics that investors can expect from CAT bonds.

In order to have an understanding of the asset's attributes, firstly we have to understand the function it plays in the insurance industry. In my thesis I start with examining the traditional reinsurance model. I look at the strengths and limitations of the model, describe the process of securitization and the structure of CAT bonds.

The returns of these assets is not an area that has been thoroughly covered in papers published on this topic, so my aim is to analyze the returns of catastrophe bonds throughout a period of diverse market conditions. The reason these instruments can be attractive to investors is that factors that drive financial markets have no influence on the occurrence of natural catastrophes, events such as financial crises and market corrections do not affect the returns of these bonds. Therefore, these instruments can be expected to provide a great deal of diversification.

Since CAT bonds have similar financial ratings as high-yield corporate bonds, I will compare the two asset classes' absolute and risk-adjusted performance. I also examine if these bonds indeed provide superior diversification benefits to investors compared to non-investment grade bonds. In order to do that, I measure the assets' sensitivity to the equity and bond markets. By calculating Treynor ratios I look at the assets' excess return to market risk ratios.

In conclusion, throughout the period – which included two years where natural catastrophes triggered several CAT bonds, some years where there has been an extensive growth in the markets, and also major fallbacks due to COVID-19 – CAT bonds proved to have superior risk-adjusted returns, while at the same time also offering better diversification benefits to investors than non-investment grade corporate bonds.
