

# Estimation of Capital Beta and Cost of Capital of Japanese Property Insurance Companies and Lines of Business<sup>1</sup>

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## Abstract

In this article, we have compiled estimates of the Japanese Property-Liability Insurance Company's equity capital beta and cost of capital. First, we obtained the overall firm equity beta and cost of capital; and second, we estimated the equity beta and cost of capital by business lines to decompose it by lines. For obtaining the firm equity beta, we have used the one-factor Capital Asset Pricing Model (CAPM) and the three-factor Fama-French Model (FF). Moreover, for estimating each business line's equity beta, we have used the full-information industry beta (FIB) methodology.

As the result of econometric analysis, we find that the CAPM and FF model are suited to estimating the Japanese Property-Liability Insurance Company's equity capital beta and cost of capital. Furthermore, by using the FIB methodology, we have found that each business line's equity beta is in a different.

The remaining important issue for estimating the Japanese Property-Liability Insurance Company's equity capital beta by line is to ascertain and investigate in detail how the character of the firm differs from its U.S. counterparts.

Key word: Property-Liability Insurance, Equity beta, Cost of capital, Business line

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