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# Elements of After-Tax Risk Management

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## Abstract

Most risk management is done on a pre-tax basis with tax issues treated as an afterthought. This paper will outline what an after-tax risk management process should look like and how it can differ from a pre-tax model. One of the paper's key conclusions is that a tax authority is often an implicit participant in many business transactions and this can have material implications for risk management. The paper starts by developing a simple three-step model of an income tax structure and then uses that model to understand a tax authority as a special class of equity investor. The paper then goes on to consider the impact of the tax structure on economic capital, the fair value of liabilities and after-tax asset/liability management (ALM). In many cases, the impact of adding tax into the ALM process is to lengthen liability durations while reducing convexities. Another impact is to make insurance liabilities sensitive to interest rate volatility in a way that tends to offset the interest rate volatility of interest rate options and guarantees.

[1] The authors are both directors at Moody's Analytics Co.  The views and opinions expressed here are those of the authors and not Moody's Analytics.