# Capital Allocation by Percentile Layer

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**Abstract**

The goal of this paper is to describe a new approach to capital allocation; the catalyst for this new approach is a new formulation of the meaning of holding Value at Risk (VaR) capital. This new formulation expresses the firm's total capital as the sum of many granular pieces of capital, or "percentile layers of capital". As a result, one must allocate capital separately on each layer and perform the capital allocation across all layers. The resulting capital allocation procedure, "capital allocation by percentile layer", exhibits several salient features. First, it allocates capital to all losses, rather than allocating capital only to extreme losses in the tail of the distribution. Second, despite allocating capital to this broad range of loss events, the proposed procedure does not allocate in proportion to average loss; rather, it allocates disproportionate capital to severe losses. Third, it allocates capital by relying neither upon esoteric parameters nor upon elusive risk preferences. Ultimately, on the practical plane, capital allocation by percentile layer produces allocations that are different from many other methods. Concomitantly, on the theoretical plane, capital allocation by percentile layer leads to new continuous formulas for risk load and utility.

**Keywords**. Capital Allocation; Percentile Layer of Capital; Value at Risk; Enterprise Risk Management; Risk Load; Risk Adjusted Profitability.