Abstract

In the wake of the 2008 financial crisis, regulatory capital requirements for banks have increased significantly through Basel III. As this raised awareness for the capital burden on the derivative businesses of banks, demand has grown for models that assess the costs of holding capital. Amidst a recent trend of pricing valuation adjustments, known as XVAs, a valuation adjustment has been developed that captures precisely this capital cost: the Capital Valuation Adjustment\(^2\). In this thesis, two approaches to modeling KVA are studied and compared. Although the models have different mathematical fundamentals, the resulting KVA formulae are surprisingly similar. Both allow for Monte Carlo simulation of regulatory capital profiles to calculate KVA numbers. A computer implementation is considered, for both the existing and future regulatory landscape.

\(^2\)Capital Valuation Adjustment is often abbreviated as KVA, where the K stands for the German word Kapital, to avoid ambiguity with the term Credit Valuation Adjustment.