

Abstract

In this work we are introducing a risk neutral valuation formula for counterparty default risk adjustments in an unilateral and in a bilateral case. In the unilateral case the adjustment is represented by a Credit Valuation Adjustment(CVA) and in the bilateral case the adjustment is quantified by a Bilateral Risk Adjustment(BVA). We are incorporating these adjustments into the values of zero coupon bonds, coupon bearing bonds and interest rate swaps. For such an incorporation, risk neutral default probabilities extracted from the market quotes of Credit Default Swaps are needed. A Bootstrap method is used to derive them and a reduced form approach is used to model the default times. In the practical part, we are calculating Greek and Czech risk neutral default probabilities during the years 2008-2010. We are calculating CVA for 18 quoted Greek government bonds and we are comparing the adjusted prices with the market quoted prices of these bonds. We study the impact of a risk free interest rate curve choice on such a valuation. In the last sections, we construct an interest rate swap between the Czech and the Greece. We compute and study CVA and BVA for this interest rate swap.