This thesis analyzes the implicit delivery option in a bond futures contract and its effect on the contract's hedging effectiveness. Bond futures are widely used in hedging of government debt securities. In this thesis, the delivery option arises from the futures seller's right to choose which bond, among several deliverable bonds, will be delivered at the delivery date. To the extent this delivery option has value it should be reflected in a reduced futures price, because the buyer of futures must be compensated for the freedom of choice the seller has in choosing the asset to be delivered.

The objective of the study is to price the futures contract and its delivery option in a theoretically consistent framework. In particular, the difference in valuing the option under constant interest rate and under stochastic term structure will be emphasized. Secondly, this paper studies whether the delivery option harms or helps the hedging effectiveness of the futures contract. Also, the effectiveness of the widely used conversion factor hedging method is questioned in the stochastic interest rate environment.

The base for modelling the delivery option is the formula generating value for an exchange option. This formula was first introduced by Margrabe (1978) and is an extension of the Black-Scholes solution (1973) to option pricing problem. The delivery option will be modelled in the fixed interest rate environment (Hemler 1990) and under stochastic term structure (Lin and Paxson 1995). The stochastic term structure of interest rates will be represented with a term structure model by Heath, Jarrow and Morton (1992), although only the intuition of the HJM-model will be presented.

The result of this paper is that the delivery option has to be included to the futures pricing formula and the theoretical equilibrium price of the futures contract with the delivery option can be obtained on a theoretically consistent basis. Secondly, there were no evidence that the delivery option would significantly harm the hedging effectiveness of the Euro-Bund futures contract. Theoretical drawbacks of the conversion factor hedging method appeared only, when hedging short-term bonds with the 10-year Bund futures contract.