A STOCHASTIC MODEL FOR DIMINISHING MUSHARAKAH FINANCE IN SAUDI BANKS

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ABSTRACT

This thesis contains models of the Islamic financial system as a stochastic process and considers the future value of the bank’s income. Consider the following three scenarios: when the business is losing money, profitable or stagnant. In each case, the distribution of the future value to the bank is estimated using Monte Carlo simulations. The business profit or loss is predicted using a normal distribution function $N(\mu, \sigma^2)$ which has two parameters: mean and standard deviation. We run the simulations for the bank's future value, sort the iterations, find the probability distribution, and plot the parameters for the future value of the bank’s income and shows comparisons against the Western system.

Keywords: Corporate finance; partnership; Musharakah; diminishing Musharakah; Monte Carlo simulation