Abstract

This Master thesis studies Asian perpetuities, which is a term standing for European type of options with an average asset as the underlying asset and the execution time of the option in infinity. Assuming Geometric Brownian motion model of price of an asset, the goal of this thesis is to study behavior of the average of the asset price. Three different types of averaging are considered: arithmetic, geometric and harmonic average. The average values of the log-normals maintain the known distribution only for the geometric average. As it is shown in the thesis; however, when the average is examined on infinite time horizon, the arithmetic and harmonic averages maintain the inverse gamma distribution or gamma distribution, respectively. This result enables the computation of the price of Asian perpetuity which is also examined in the thesis.