

# **Exotic Options: Pricing Path-Dependent single Barrier Option contracts**

**Abukar M Ali**

Mathematics and Statistics Department  
Birkbeck University of London

## **Abstract**

This paper discusses the basic properties of barrier options and an analytical solution for pricing such contracts. The significance of monitoring is considered, for example the difference between continuous monitoring and discrete monitoring. Pitfalls arising from a naïve application of standard option valuation techniques to barrier options are pointed out. We also discuss the practical issues related to barrier options, such as the advantages they provide to the buyer as well as to the writer, and consider practical issues behind valuation.

*Key words and phrases: Barrier Options, Knock-out Options, Knock-in Options, Rebate, Path-dependant Payoff, Black & Scholes, restricted density, Reflection Principal.*