

Sensitivity analysis in a market with memory

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A general market model with memory is considered. The formulation is given in terms of stochastic functional differential equations, which allow for flexibility in the modelling of market memory and delays. We focus on the sensitivity analysis of the dependence of option prices on the memory. This implies a generalization of the concept of delta. Our techniques use Malliavin calculus and Fréchet derivation. When it comes to option prices, we compute the delta of a financial derivative, which may depend on the history of the underlying.