

# Recovering a time-homogeneous stock price process from perpetual option prices

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It is well-known how to determine the price of perpetual American options if the underlying stock price is a time-homogeneous diffusion. In the present paper we consider the inverse problem, i.e. given prices of perpetual American options for different strikes we ask, when is it possible to construct a time-homogeneous model for the stock price which reproduces the given option prices?

This is joint work with Erik Ekstrom (Uppsala).