Explicit solutions to optimal long term investment problems for a CIR factor model

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On a financial market with one riskless bond and one risky stock, both of which are affected by a stochastic factor described as a Bessel process with a linear drift (i.e., the square root of Cox-Ingersol-Ross's stochastic interest rate model), explicit representations of the solutions are given for the optimization problems: **(i)** power-utility maximization of the terminal wealth, **(ii)** its risk-sensitive version with infinite time horizon, **(iii)** a large deviations control problem.