

**Risk-sensitive quasi-variational inequalities
arising from optimal investment with transaction costs**

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Abstract: Risk-sensitive variational inequalities (QVIs) arising from optimal investment with transaction costs will be discussed. The QVIs are derived to solve impulse control problems related to power utility maximization on infinite time horizon with general transaction costs. The QVI for such kind of problem is of "ergodic type" in which the pair (u, l) of a function u and a constant l is considered to be a solution. The constant determines the value maximizing the criterion. An optimal strategy is constructed from the function u . The main difficulty in solving the QVI lies in that its related stopping problem is of a multiplicative functional. In spite of the name of "ergodic type", the underlying diffusion process of the relevant QVI is not ergodic, which is also distinct feature of the present problem from usual ergodic control problems.