

Meeting: 1000, Albuquerque, New Mexico, SS 4A, Special Session on Financial Mathematics: The Mathematics of Derivative Securities

1000-90-19 **Svetlana Boyarchenko** and **Sergei Levendorskii*** (leven@eco.utexas.edu), The University of Texas at Austin, Department of Economics, 1 University Station C3100, Austin, TX 78712-0301. *American options: the EPV pricing model.*

We explicitly solve the pricing problem for perpetual American puts and calls, and provide an efficient semi-explicit pricing procedure for options with finite time horizon. Contrary to the standard approach, which uses the price process as a primitive, we model the price process as the expected present value of a stream, which is a monotone function of a Lévy process. Certain processes exhibiting mean-reverting, stochastic volatility and/or switching features can be modelled in this way. This specification allows us to consider assets that pay no dividends at all when the level of the underlying stochastic factor is too low, assets that pay dividends at a fixed rate when the underlying stochastic process remains in some range, or capped dividends. (Received June 28, 2004)