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Dynamic Conic Finance: Pricing and Hedging in Market Models with Transaction Costs via Dynamic Coherent Acceptability Indices

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In this paper we present a theoretical framework for determining dynamic ask and bid prices of derivatives using the theory of dynamic coherent acceptability indices in discrete time. We prove a version of the First Fundamental Theorem of Asset Pricing using the dynamic coherent risk measures. We introduce the dynamic ask and bid prices of a derivative contract in markets with transaction costs. Based on these results, we derive a representation theorem for the dynamic bid and ask prices in terms of dynamically consistent sequence of sets of probability measures and risk-neutral measures. To illustrate our results, we compute the ask and bid prices of some path-dependent options using the dynamic Gain-Loss Ratio.

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