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“Risk, Return and Ross Recovery”  

Abstract: Recently, Stephen Ross has shown that the real-world transition probabilities of a finite state Markov chain can be recovered from Arrow Debreu security prices by assuming that the pricing kernel enjoys transition independence. We motivate this restriction by deriving it as a consequence of restricting the form and dynamics of the numeraire portfolio. Working with a diffusion process for a short interest rate, we indicate how one can recover real world transition probabilities on both bounded and unbounded domains.