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ASYMPTOTIC ARBITRAGE IN LIU AND TANG THREE-FACTOR COMMODITY FUTURES MODEL

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SUMMARY

The notion of asymptotic arbitrage, also called long run arbitrage, is first introduced in large financial security markets (like stocks) by Kabanov and Krankov in 1998. This paper deals and proves the presence of long run arbitrage opportunities (for large enough time horizon) in storable commodity models; specifically in the three-factor commodity futures model developed by Liu and Tang. Thus the existence of asymptotic exponential arbitrage with geometrically decaying failure probability is proved in this model by directly using the large deviations principle to the interest rate and the convenience yield.

Keywords and phrases: Asymptotic arbitrage; convenience yield; futures contract; large deviations principle.