ARBITRAGE PORTFOLIOS AND THE FUNDAMENTAL THEOREM OF ASSET PRICING

BERNARD WONG[1,2], C C HEYDE[1,3]

[1]AUSTRALIAN NATIONAL UNIVERSITY, [2]UNIVERSITY OF NEW SOUTH WALES,

[3]COLUMBIA UNIVERSITY

Abstract. We provide an explicit construction of the arbitrage opportunities related to the first Fundamental Theorem of Asset Pricing in a possibly incomplete Ito process framework. Our proofs utilize simple stochastic calculus techniques and clearly highlight the economic content of the technical conditions, providing a clear derivation of the first Fundamental Theorem of Asset Pricing. This contrasts with the sophisticated stochastic analysis and functional analytic theorems required in the work of Delbaen and Schachermayer (1994b), and the comparative lack of transparency of their technical conditions.

Keywords: Arbitrage; Local Martingale; Equivalent Local Martingale Measures.

JEL Classification: C62, G12.

[1] Tel: +61-2-9385-2827; Fax: +61-2-9385-1883; Email: bernard.wong@unsw.edu.au