

DIFTA

20 November 2003

Room 1329, 13:30–14:30

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Optimal portfolio for an insider in a market driven by a Lévy process

Abstract: We consider a financial market driven by a Poisson random measure and a trader with access to information (filtration) G_t which is *bigger* than the filtration F_t generated by the Lévy process. Such a trader is called an *insider*. We study the question: What is the maximal expected utility of the terminal wealth obtainable by an insider, and what is the corresponding optimal insider portfolio? We solve this problem in the case of logarithmic utility. In particular, we show that the existence of an optimal portfolio implies an enlargement of filtration property for G_t .

As an example we show that in the case when the price of the risky investment is driven by a Poisson process and the insider knows the terminal value of the risky investment, then the maximal expected utility for the insider is *finite*. This is in contrast to the corresponding Brownian motion case, where it has been proved (Pikovski and Karatzas, 1996) that the maximal expected utility for the insider value is infinite.

The presentation is based on recent joint work with G. Di Nunno, T. Meyer-Brandis and F. Proske, all at CMA, University of Oslo.