# Insider trading in credit markets with dynamic information asymmetry

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Columbia-Polytechnique Conference on
New Directions in Quantitative Finance
Paris, May 19–21 2008

**Abstract**

We study an equilibrium model for a defaultable bond in the setting of Back-Pedersen. The market consists of noise traders, an insider and a risk-neutral market maker. Under the assumption that the insider observes the firm value continuously in time we study the optimal strategies for the insider and the optimal pricing rules for the market maker. We show that there exists an equilibrium where the insider's trades are inconspicuous. In this equilibrium the insider drives the total demand to a certain level at the default time. The solution follows from answering the following purely mathematical question which is of interest in its own: Suppose Z and B are two independent Brownian motions with B(0)=0 and Z(0) is a positive random variable. Let T be the first time that Z hits 0. Does there exists a semimartingale X such that

1) it is a solution to the SDE

$$dX_t = dB_t + g(t, X_t, Z_t)dt$$

with $X(0) = 1$, for some appropriate function $g$,

2) T is the first hitting time of 0 for X, and

3) X is a Brownian motion in its own filtration?