

Continuous-time Models in Corporate Finance

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Course Outline and References

OBJECTIVES Since the influential papers of Black-Scholes (1973) and Merton (1973), continuous time diffusion models have become a standard tool for pricing financial assets. By contrast, it is only recently that corporate finance papers (which aim at understanding how firms structure their financial policy) have started using such models.

This course has 2 objectives:

- synthesize this recent corporate finance literature,
- relate it to the prior asset pricing literature.

MATHEMATICAL PREREQUISITES Basic stochastic calculus: diffusion processes, Ito's formula, Feynman-Kac representation formula.

COURSE OUTLINE

1- INTRODUCTION:

Elements of corporate finance: the Modigliani Miller paradox.
Applying option pricing to corporate finance.

Readings : ⑦ ⑥

2- THE TRADE-OFF THEORY:

Minimizing the difference between bankruptcy costs and tax rebates.

Readings: ⑤

3 LIQUIDITY MANAGEMENT:

Optimizing dividend policy and liquidity management when external financing is impossible.

Readings: ④

4- IMPLICATIONS FOR RISK MANAGEMENT:

Risk management allows to reduce liquidity needs and distribute more dividends.

Readings: ⑧, ⑨

5- IMPLICATIONS FOR ASSET PRICING:

Optimal insurance policy and stock return volatility.

Readings: ②

6- CONTRACT THEORY:

Endogenizing the cost of external financing.

Readings: ①, ③

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