

Bus Ad 239B–Spring 2003
Problem Set 8
Due Thursday March 20

Let W be a K -dimensional Wiener process, \bar{S} an $N + 1$ -dimensional securities price process with

$$\bar{S}(\omega, t) = \bar{S}(\omega, 0) + \int_0^t \bar{\mu}(\omega, s) ds + \int_0^t \bar{\sigma}(\omega, s) dW(\omega, s)$$

and

$$\text{rank } \bar{\sigma}(\omega, t) = N \text{ almost everywhere}$$

1. Give sufficient conditions for constructing a money market account M from the $N + 1$ primitive securities.
2. Assuming that a money-market account exists (but is not necessarily one of the primitive securities), state and prove an analogue of Proposition 4.5 that covers this situation.