

[Source](#) | [Model Presentation](#)

# bsnd

## 1 Description

Then, we assume that  $S_0^i$  is deterministic and we consider the stock  $S_t^i$  satisfying

$$dS_t^i = S_t^i \left( \mu_i dt + \sum_{1 \leq j \leq i} \sigma_{i,j} dB_t^j \right)$$

or, equivalently,

$$S_t^i = S_0^i \exp \left( -t \left( \frac{1}{2} \sum_{1 \leq j \leq i} \sigma_{i,j}^2 - r + \delta_i \right) + \sum_{1 \leq j \leq i} \sigma_{i,j} W_t^j \right)$$

where  $(W_t)_{t \in [0, T]}$  is a brownian motion under the unique risk-neutral probability measure  $\mathbb{P}$  of the market.

## 2 Code Implementation

```
#ifndef _BSND_H
#define _BSND_H

#include "optype.h"
#include "var.h"
#include "error_msg.h"

#define TYPEMOD BSND

typedef struct TYPEMOD{
    VAR Size;
    VAR T;
    VAR S0;
```

```
VAR Sigma;  
VAR Divid;  
VAR Rho;  
VAR R;  
} TYPEMOD;
```

```
#endif
```