Package: convertbonds (via r-universe)

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Type Package

Title Use the Given Parameters to Calculate the European Option Value

Version 0.1.0

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Description Calculate the theoretical value of convertible bonds by given parameters, including B-S theory and Monte Carlo method.

Imports stats

License GPL-2

Encoding UTF-8

LazyData false

RoxygenNote 7.2.3

Repository https://aughunter.r-universe.dev

RemoteUrl https://github.com/aughunter/convertbonds

RemoteRef HEAD

RemoteSha 160b33405b7badc252f842d7486b1e1a796f93ca

Contents

`black_schiles` *Black Schiles Model function Calculating Function Using the Black-Schiles Option Pricing Model*

Description

Black Schiles Model function Calculating Function Using the Black-Schiles Option Pricing Model

Usage

```
black_schiles(
  mode = 1,
  current_price,
  stock_price,
  conver_price,
  stock_var,
  time,
  interest_rate,
  netdebt_value
)
```

Arguments

`mode`	Two calculation methods, respectively 1 and 2
`current_price`	Current price of convertible bonds
`stock_price`	Positive stock price
`conver_price`	Conversion price
`stock_var`	Standard deviation of annualized rate of return for underlying stocks
`time`	Expiration time (annualized remaining period)
`interest_rate`	Risk-free continuous compound interest rate
`netdebt_value`	Pure debt value

Value

Option value per share(numeric)

Examples

```
result<-black_schiles(mode=1,current_price=122.82,
 stock_price=5.9,conver_price=5.43,stock_var=0.2616,time=1.353,
 interest_rate=0.018482, netdebt_value=104.05)
```

`monte_carlo` *Monte Carlo simulation function Predicting Theoretical Value of Options per Share Using Monte Carlo Simulations*

Description

Monte Carlo simulation function Predicting Theoretical Value of Options per Share Using Monte Carlo Simulations

Usage

```
monte_carlo(I, M, S_0, K, Time, r, sigma)
```

Arguments

`I`	number ofsimulation
`M`	number of time steps
`S_0`	The initial price of the underlying stock
`K`	Exercise price (conversion price)
`Time`	Simulate paths over time intervals
`r`	risk free rate
`sigma`	Volatility (Standard Deviation of Return)

Value

No return value, called for side effects

Examples

```
monte_carlo(I=10000,M=50,S_0=5.9,K=5.43,T=1.353,r=0.018482,sigma=0.2616)
```

`option_value` *Option_value functuon Calculate the four value comparisons:Option value of convertible bond,Theoretical value of convertible bonds (pure bond value + option value),The difference between the theoretical price of convertible bonds and the current price,The ratio of the difference between the theoretical price of convertible bonds and the current price*

Description

Option_value functuon Calculate the four value comparisons:Option value of convertible bond,Theoretical value of convertible bonds (pure bond value + option value),The difference between the theoretical price of convertible bonds and the current price,The ratio of the difference between the theoretical price of convertible bonds and the current price

Usage

```
option_value(value_per, current_price, conver_price, netdebt_value)
```

Arguments

value_per	Option value per share(numeric)
current_price	Current price of convertible bonds
conver_price	Conversion price
netdebt_value	Pure debt value

Value

No return value, called for side effects

Examples

```
option_value( value_per=1.02,current_price=122.82,conver_price=5.43,netdebt_value=104.05 )
```

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