

Package ‘visualR’

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Type Package

Title Generates a 3D Visualization of Volatility Skew and Stock Option Parameters Plotted Over Time

Version 2.0.0

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Description Generates a 3D graph which plots the volatility skew of a stock or a selected stock option parameter over time.
The default setting plots the net parameter position of a double vertical spread over time.

License GPL-3

Encoding UTF-8

LazyData true

Depends R (>= 3.5), optionstrat, plotly, dplyr, quantmod, jsonlite

Suggests knitr, rmarkdown

VignetteBuilder knitr

RoxygenNote 6.1.1

NeedsCompilation no

Repository CRAN

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avoc	<i>Available Option Chain</i>
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Description

Finds all available option expirations

Usage

```
avoc(symbol)
```

Arguments

symbol	Stock Ticker
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Value

Returns a vector of dates representing the expirations

Examples

```
avoc("AAPL")
```

visual	<i>Visual Auxiliary Function</i>
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Description

Calculates the net parameter value for a double vertical option spread

Usage

```
visual(type, parameter, s, si, x1, x2, x3, x4, v1, v2 = v1, v3 = v1,
       v4 = v1, ti, t1, t2 = t1, t3 = t1, t4 = t1, r = 0.02, d = 0,
       ls = 1)
```

Arguments

type	Character String: "call" or "put"
parameter	Character String: "premium", "delta", "gamma", "vega", "theta", "rho"
s	Spot Price
si	Initial Spot Price
x1	Option 1 Strike
x2	Option 2 Strike

x3	Option 3 Strike
x4	Option 4 Strike
v1	Option 1 Volatility
v2	Option 2 Volatility
v3	Option 3 Volatility
v4	Option 4 Volatility
ti	Initial Years to Maturity
t1	Option 1 years to maturity
t2	Option 1 years to maturity
t3	Option 1 years to maturity
t4	Option 1 years to maturity
r	Annualized continuously compounded risk-free rate
d	Annualized continuously compounded dividend yield
ls	Numerical either 1 or -1

Value

Returns a Numerical value

Examples

```
visual(type = "call", parameter = "premium", s = 100, si = 100, x1 = 90,
x2 = 95, x3 = 105, x4 = 110, v1 = 0.20, ti = 45/365, t1 = 45/365)
```

visualize

Option Parameter Visualization

Description

Creates a 3D Plot of an Option Parameter plotted over time

Usage

```
visualize(type, parameter, s, si, x1, x2, x3, x4, v1, v2 = v1, v3 = v1,
v4 = v1, ti, r = 0.02, d = 0, ls = 1, low = 75, high = 125,
e1 = (0), e2 = (5/365), e3 = (10/365), e4 = (15/365),
e5 = (20/365), e6 = (25/365), e7 = (30/365), e8 = (35/365),
e9 = (40/365), e10 = (45/365), c1 = 1, c2 = 1, c3 = 1,
c4 = 1)
```

Arguments

type	Character String: "call" or "put"
parameter	Character String: "premium", "delta", "gamma", "vega", "theta", "rho"
s	Underlying Asset Price
si	Initial Price of the underlying asset
x1	Option 1 Strike
x2	Option 2 Strike
x3	Option 3 Strike
x4	Option 4 Strike
v1	Option 1 Volatility
v2	Option 2 Volatility
v3	Option 3 Volatility
v4	Option 4 Volatility
ti	Initial time to maturity in years
r	Annualized continuously compounded risk-free rate
d	Annualized continuously compounded dividend yield
ls	Numerical either 1 or -1
low	Lower Limit for the price range
high	Upper Limit for the price range
e1	Expiration in years, set to 0
e2	Expiration in years, set to 5/365
e3	Expiration in years, set to 10/365
e4	Expiration in years, set to 15/365
e5	Expiration in years, set to 20/365
e6	Expiration in years, set to 25/365
e7	Expiration in years, set to 30/365
e8	Expiration in years, set to 35/365
e9	Expiration in years, set to 40/365
e10	Expiration in years, set to 45/365
c1	Option 1, Number of Contracts
c2	Option 2, Number of Contracts
c3	Option 3, Number of Contracts
c4	Option 4, Number of Contracts

Value

Plots a 3d Graph in the Viewer tab

Examples

```
visualize(type = "put", parameter = "delta", s = 100, si = 100,
  x1 = 90, x2 = 95, x3 = 105, x4 = 110, v1 = 0.20,
  ti = 45/365, r = 0.02, d = 0, ls = 1,
  low = 75, high = 125, e1 =(45/365), e2 = (30/365),
  e3 = (15/365), e4 = (1/365), c1 = 1, c2 = 1, c3 = 1, c4 = 1)
```

volskew

Volatility Skew Visualization

Description

Creates a 3D Plot of the Volatility Skew

Usage

```
volskew(symbol, type = "call", spot = "current", r, ll = 0.75,
  ul = 1.25, days_out = 50, d1 = 0, d2 = 0, d3 = 0, d4 = 0,
  d5 = 0)
```

Arguments

symbol	Ticker symbol for a publicly traded company
type	"call" or "put" option volatility skew
spot	This is the current price of the stock, if blank it defaults to the previous adjusted close
r	risk-free rate, annualized and continuously-compounded
ll	lower limit, set to 0.75
ul	upper limit, set to 1.25
days_out	keep at 50
d1	dividend yield
d2	dividend yield
d3	dividend yield
d4	dividend yield
d5	dividend yield

Value

Plots a 3d Graph in the Viewer tab

Examples

```
volskew("^SPX", type = "call", spot = 2900, r = 0.02)
```

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