Package 'FinCal'

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Title Time Value of Money, Time Series Analysis and Computational Finance

Description
Package for time value of money calculation, time series analysis and computational finance.

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Contents

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bdy *Computing bank discount yield (BDY) for a T-bill*

Description

Computing bank discount yield (BDY) for a T-bill

Usage

```
bdy(d, f, t)
```

Arguments

d	the dollar discount, which is equal to the difference between the face value of the bill and the purchase price
f	the face value (par value) of the bill
t	number of days remaining until maturity

See Also

bdy2mmy

Examples

```
bdy(d=1500,f=100000,t=120)
```

---

bdy2mmy *Computing money market yield (MMY) for a T-bill*

Description

Computing money market yield (MMY) for a T-bill

Usage

```
bdy2mmy(bdy, t)
```

Arguments

bdy	bank discount yield
t	number of days remaining until maturity

See Also

bdy

Examples

```
bdy2mmy(bdy=0.045,t=120)
```

`candlestickChart` *Technical analysts - Candlestick chart: show prices for each period as a continuous line. The box is clear if the closing price is higher than the opening price, or filled red if the closing is lower than the opening price.*

Description

Technical analysts - Candlestick chart: show prices for each period as a continuous line. The box is clear if the closing price is higher than the opening price, or filled red if the closing is lower than the opening price.

Usage

```
candlestickChart(ohlc, start = NULL, end = NULL, main = "", ...)
```

Arguments

`ohlc`	output from get.ohlc.yahoo or get.ohlc.google
`start`	start date to plot, if not specified, all date in ohlc will be included
`end`	end date to plot
`main`	an overall title for the plot
`...`	Arguments to be passed to ggplot

See Also

get.ohlc.yahoo

get.ohlc.google

Examples

```
# google <- get.ohlc.yahoo("GOOG",start="2013-07-01",end="2013-08-01"); candlestickChart(google)
# apple <- get.ohlc.google("AAPL",start="2013-07-01",end="2013-08-01"); candlestickChart(apple)
```

cash.ratio *cash ratio – Liquidity ratios measure the firm's ability to satisfy its short-term obligations as they come due.*

Description

cash ratio – Liquidity ratios measure the firm's ability to satisfy its short-term obligations as they come due.

Usage

```
cash.ratio(cash, ms, cl)
```

Arguments

cash	cash
ms	marketable securities
cl	current liabilities

See Also

current.ratio

quick.ratio

Examples

```
cash.ratio(cash=3000,ms=2000,cl=2000)
```

coefficient.variation *Computing Coefficient of variation*

Description

Computing Coefficient of variation

Usage

```
coefficient.variation(sd, avg)
```

Arguments

sd	standard deviation
avg	average value

See Also

Sharpe.ratio

Examples

```
coefficient.variation(sd=0.15,avg=0.39)
```

---

cogs *Cost of goods sold and ending inventory under three methods (FIFO,LIFO,Weighted average)*

Description

Cost of goods sold and ending inventory under three methods (FIFO,LIFO,Weighted average)

Usage

```
cogs(uinv, pinv, units, price, sinv, method = "FIFO")
```

Arguments

uinv	units of beginning inventory
pinv	prince of beginning inventory
units	nx1 vector of inventory units. inventory purchased ordered by time (from first to last)
price	nx1 vector of inventory price. same order as units
sinv	units of sold inventory
method	inventory methods: FIFO (first in first out, permitted under both US and IFRS), LIFO (late in first out, US only), WAC (weighted average cost,US and IFRS)

Examples

```
cogs(uinv=2,pinv=2,units=c(3,5),price=c(3,5),sinv=7,method="FIFO")

cogs(uinv=2,pinv=2,units=c(3,5),price=c(3,5),sinv=7,method="LIFO")

cogs(uinv=2,pinv=2,units=c(3,5),price=c(3,5),sinv=7,method="WAC")
```

`current.ratio` *current ratio – Liquidity ratios measure the firm's ability to satisfy its short-term obligations as they come due.*

Description

current ratio – Liquidity ratios measure the firm's ability to satisfy its short-term obligations as they come due.

Usage

```
current.ratio(ca, cl)
```

Arguments

`ca`	current assets
`cl`	current liabilities

See Also

`cash.ratio`

`quick.ratio`

Examples

```
current.ratio(ca=8000,cl=2000)
```

`ddb` *Depreciation Expense Recognition – double-declining balance (DDB), the most common declining balance method, which applies two times the straight-line rate to the declining balance.*

Description

Depreciation Expense Recognition – double-declining balance (DDB), the most common declining balance method, which applies two times the straight-line rate to the declining balance.

Usage

```
ddb(cost, rv, t)
```

Arguments

cost	cost of long-lived assets
rv	residual value of the long-lived assets at the end of its useful life. DDB does not explicitly use the asset's residual value in the calculations, but depreciation ends once the estimated residual value has been reached. If the asset is expected to have no residual value, the DB method will never fully depreciate it, so the DB method is typically changed to straight-line at some point in the asset's life.
t	length of the useful life

See Also

slde

Examples

```
ddb(cost=1200,rv=200,t=5)
```

---

debt.ratio *debt ratio – Solvency ratios measure the firm's ability to satisfy its long-term obligations.*

Description

debt ratio – Solvency ratios measure the firm's ability to satisfy its long-term obligations.

Usage

```
debt.ratio(td, ta)
```

Arguments

td	total debt
ta	total assets

See Also

total.d2e

lt.d2e

financial.leverage

Examples

```
debt.ratio(td=6000,ta=20000)
```

diluted.EPS *diluted Earnings Per Share*

Description

diluted Earnings Per Share

Usage

```
diluted.EPS(ni, pd, cpd = 0, cdi = 0, tax = 0, w, cps = 0, cds = 0,
  iss = 0)
```

Arguments

ni	net income
pd	preferred dividends
cpd	dividends on convertible preferred stock
cdi	interest on convertible debt
tax	tax rate
w	weighted average number of common shares outstanding
cps	shares from conversion of convertible preferred stock
cds	shares from conversion of convertible debt
iss	shares issuable from stock options

See Also

EPS

iss

was

Examples

```
diluted.EPS(ni=115600,pd=10000,cdi=42000,tax=0.4,w=200000,cds=60000)

diluted.EPS(ni=115600,pd=10000,cpd=10000,w=200000,cps=40000)

diluted.EPS(ni=115600,pd=10000,w=200000,iss=2500)

diluted.EPS(ni=115600,pd=10000,cpd=10000,cdi=42000,tax=0.4,w=200000,cps=40000,cds=60000,iss=2500)
```

`discount.rate` *Computing the rate of return for each period*

Description

Computing the rate of return for each period

Usage

```
discount.rate(n, pv, fv, pmt, type = 0)
```

Arguments

`n`	number of periods
`pv`	present value
`fv`	future value
`pmt`	payment per period
`type`	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

`fv.simple`

`fv.annuity`

`fv`

`pv`

`pmt`

`n.period`

Examples

```
discount.rate(n=5,pv=0,fv=600,pmt=-100,type=0)
```

ear — *Convert stated annual rate to the effective annual rate*

Description

Convert stated annual rate to the effective annual rate

Usage

```
ear(r, m)
```

Arguments

r	stated annual rate
m	number of compounding periods per year

See Also

ear.continuous

hpr2ear

ear2bey

ear2hpr

Examples

```
ear(r=0.12,m=12)

ear(0.04,365)
```

ear.continuous — *Convert stated annual rate to the effective annual rate with continuous compounding*

Description

Convert stated annual rate to the effective annual rate with continuous compounding

Usage

```
ear.continuous(r)
```

Arguments

r	stated annual rate

See Also

ear

r.norminal

Examples

```
ear.continuous(r=0.1)

ear.continuous(0.03)
```

---

ear2bey *bond-equivalent yield (BEY), 2 x the semiannual discount rate*

Description

bond-equivalent yield (BEY), 2 x the semiannual discount rate

Usage

```
ear2bey(ear)
```

Arguments

ear	effective annual rate

See Also

ear

Examples

```
ear2bey(ear=0.08)
```

---

ear2hpr *Computing HPR, the holding period return*

Description

Computing HPR, the holding period return

Usage

```
ear2hpr(ear, t)
```

Arguments

ear	effective annual rate
t	number of days remaining until maturity

See Also

hpr2ear

ear

hpr

Examples

```
ear2hpr(ear=0.05039,t=150)
```

EIR *Equivalent/proportional Interest Rates*

Description

An interest rate to be applied n times p.a. can be converted to an equivalent rate to be applied p times p.a.

Usage

```
EIR(r, n = 1, p = 12, type = c("e", "p"))
```

Arguments

r	interest rate to be applied n times per year (r is annual rate!)
n	times that the interest rate r were compounded per year
p	times that the equivalent rate were compounded per year
type	equivalent interest rates ('e',default) or proportional interest rates ('p')

Examples

```
# monthly interest rat equivalent to 5% compounded per year
EIR(r=0.05,n=1,p=12)

# monthly interest rat equivalent to 5% compounded per half year
EIR(r=0.05,n=2,p=12)

# monthly interest rat equivalent to 5% compounded per quarter
EIR(r=0.05,n=4,p=12)

# annual interest rate equivalent to 5% compounded per month
EIR(r=0.05,n=12,p=1)
```

```
# this is equivalent to
ear(r=0.05,m=12)

# quarter interest rate equivalent to 5% compounded per year
EIR(r=0.05,n=1,p=4)

# quarter interest rate equivalent to 5% compounded per month
EIR(r=0.05,n=12,p=4)

# monthly proportional interest rate which is equivalent to a simple annual interest
EIR(r=0.05,p=12,type='p')
```

EPS *Basic Earnings Per Share*

Description

Basic Earnings Per Share

Usage

```
EPS(ni, pd, w)
```

Arguments

ni	net income
pd	preferred dividends
w	weighted average number of common shares outstanding

See Also

diluted.EPS

was

Examples

```
EPS(ni=10000,pd=1000,w=11000)
```

`financial.leverage` *financial leverage – Solvency ratios measure the firm's ability to satisfy its long-term obligations.*

Description

financial leverage – Solvency ratios measure the firm's ability to satisfy its long-term obligations.

Usage

```
financial.leverage(te, ta)
```

Arguments

`te`	total equity
`ta`	total assets

See Also

`total.d2e`
`lt.d2e`
`debt.ratio`

Examples

```
financial.leverage(te=16000,ta=20000)
```

`fv` *Estimate future value (fv)*

Description

Estimate future value (fv)

Usage

```
fv(r, n, pv = 0, pmt = 0, type = 0)
```

Arguments

`r`	discount rate, or the interest rate at which the amount will be compounded each period
`n`	number of periods
`pv`	present value
`pmt`	payment per period
`type`	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

fv.simple

fv.annuity

pv

pmt

n.period

discount.rate

Examples

```
fv(0.07,10,1000,10)
```

`fv.annuity` *Estimate future value of an annuity*

Description

Estimate future value of an annuity

Usage

```
fv.annuity(r, n, pmt, type = 0)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
n	number of periods
pmt	payment per period
type	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

fv

Examples

```
fv.annuity(0.03,12,-1000)

fv.annuity(r=0.03,n=12,pmt=-1000,type=1)
```

fv.simple *Estimate future value (fv) of a single sum*

Description

Estimate future value (fv) of a single sum

Usage

```
fv.simple(r, n, pv)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
n	number of periods
pv	present value

See Also

fv

Examples

```
fv.simple(0.08,10,-300)

fv.simple(r=0.04,n=20,pv=-50000)
```

fv.uneven *Computing the future value of an uneven cash flow series*

Description

Computing the future value of an uneven cash flow series

Usage

```
fv.uneven(r, cf)
```

Arguments

r	stated annual rate
cf	uneven cash flow

See Also

fv.simple

Examples

```
fv.uneven(r=0.1, cf=c(-1000, -500, 0, 4000, 3500, 2000))
```

`geometric.mean` *Geometric mean return*

Description

Geometric mean return

Usage

```
geometric.mean(r)
```

Arguments

r	returns over multiple periods

Examples

```
geometric.mean(r=c(-0.0934, 0.2345, 0.0892))
```

`get.ohlc.google` *Download stock prices from Google Finance (open, high, low, close, volume)*

Description

Download stock prices from Google Finance (open, high, low, close, volume)

Usage

```
get.ohlc.google(symbol, start = "2013-01-01", end = "today")
```

Arguments

symbol	symbol of stock, e.g. AAPL, GOOG, SPX
start	start date, e.g., 2013-07-31
end	end date, e.g., 2013-08-06

See Also

get.ohlc.yahoo

get.ohlcs.google

Examples

```
# get.ohlc.google(symbol="AAPL")
# get.ohlc.google(symbol="AAPL",start="2013-08-01")
# get.ohlc.google(symbol="AAPL",start="2013-07-01",end="2013-08-01")
```

---

get.ohlc.yahoo *Download stock prices from Yahoo Finance (open, high, low, close, volume, adjusted)*

Description

Download stock prices from Yahoo Finance (open, high, low, close, volume, adjusted)

Usage

```
get.ohlc.yahoo(symbol, start = "firstDay", end = "today", freq = "d")
```

Arguments

symbol	symbol of stock, e.g. AAPL, GOOG, SPX
start	start date, e.g., 2013-07-31
end	end date, e.g., 2013-08-06
freq	time interval, e.g., d:daily, w:weekly, m:monthly

See Also

get.ohlcs.yahoo

get.ohlc.google

Examples

```
# get.ohlc.yahoo(symbol="AAPL")
# get.ohlc.yahoo(symbol="AAPL",start="2013-08-01",freq="d")
# get.ohlc.yahoo(symbol="AAPL",start="2013-07-01",end="2013-08-01",freq="w")
```

get.ohlcs.google — *Batch download stock prices from Google Finance (open, high, low, close, volume)*

Description

Batch download stock prices from Google Finance (open, high, low, close, volume)

Usage

```
get.ohlcs.google(symbols, start = "2013-01-01", end = "today")
```

Arguments

symbols	symbols of stock, e.g. AAPL, GOOG, SPX
start	start date, e.g., 2013-07-31
end	end date, e.g., 2013-08-06

See Also

get.ohlc.google

get.ohlcs.yahoo

Examples

```
# get.ohlcs.google(symbols=c("AAPL","GOOG","SPY"))
# get.ohlcs.google(symbols=c("AAPL","GOOG","SPY"),start="2013-01-01")
# get.ohlcs.google(symbols=c("AAPL","GOOG","SPY"),start="2013-01-01",end="2013-07-31")
```

get.ohlcs.yahoo — *Batch download stock prices from Yahoo Finance (open, high, low, close, volume, adjusted)*

Description

Batch download stock prices from Yahoo Finance (open, high, low, close, volume, adjusted)

Usage

```
get.ohlcs.yahoo(symbols, start = "firstDay", end = "today", freq = "d")
```

Arguments

symbols	symbols of stock, e.g. AAPL, GOOG, SPX
start	start date, e.g., 2013-07-31
end	end date, e.g., 2013-08-06
freq	time interval, e.g., d:daily, w:weekly, m:monthly

See Also

get.ohlc.yahoo

get.ohlcs.google

Examples

```
# get.ohlcs.yahoo(symbols=c("AAPL","GOOG","SPY"),freq="d")
# get.ohlcs.yahoo(symbols=c("AAPL","GOOG","SPY"),start="2013-01-01",freq="m")
```

---

gpm *gross profit margin – Evaluate a company's financial performance*

Description

gross profit margin – Evaluate a company's financial performance

Usage

```
gpm(gp, rv)
```

Arguments

gp	gross profit, equal to revenue minus cost of goods sold (cogs)
rv	revenue (sales)

See Also

npm

Examples

```
gpm(gp=1000,rv=20000)
```

harmonic.mean *harmonic mean, average price*

Description

harmonic mean, average price

Usage

```
harmonic.mean(p)
```

Arguments

p	price over multiple periods

Examples

```
harmonic.mean(p=c(8,9,10))
```

hpr *Computing HPR, the holding period return*

Description

Computing HPR, the holding period return

Usage

```
hpr(ev, bv, cfr = 0)
```

Arguments

ev	ending value
bv	beginning value
cfr	cash flow received

See Also

twrr

hpr2ear

hpr2mmy

Examples

```
hpr(ev=33,bv=30,cfr=0.5)
```

hpr2bey *bond-equivalent yield (BEY), 2 x the semiannual discount rate*

Description

bond-equivalent yield (BEY), 2 x the semiannual discount rate

Usage

```
hpr2bey(hpr, t)
```

Arguments

hpr	holding period return
t	number of month remaining until maturity

See Also

hpr

Examples

```
hpr2bey(hpr=0.02,t=3)
```

hpr2ear *Convert holding period return to the effective annual rate*

Description

Convert holding period return to the effective annual rate

Usage

```
hpr2ear(hpr, t)
```

Arguments

hpr	holding period return
t	number of days remaining until maturity

See Also

ear

hpr

ear2hpr

Examples

```
hpr2ear(hpr=0.015228,t=120)
```

`hpr2mmy` *Computing money market yield (MMY) for a T-bill*

Description

Computing money market yield (MMY) for a T-bill

Usage

```
hpr2mmy(hpr, t)
```

Arguments

`hpr`	holding period return
`t`	number of days remaining until maturity

See Also

`hpr`

`mmy2hpr`

Examples

```
hpr2mmy(hpr=0.01523,t=120)
```

`irr` *Computing IRR, the internal rate of return*

Description

Computing IRR, the internal rate of return

Usage

```
irr(cf)
```

Arguments

`cf`	cash flow,the first cash flow is the initial outlay

See Also

pv.uneven

npv

Examples

```
# irr(cf=c(-5, 1.6, 2.4, 2.8))
```

---

irr2 *Computing IRR, the internal rate of return*

Description

This function is the same as irr but can calculate negative value. This function may take a very long time. You can use larger cutoff and larger step to get a less precision irr first. Then based on the result, change from and to, to narrow down the interval, and use a smaller step to get a more precision irr.

Usage

```
irr2(cf, cutoff = 0.1, from = -1, to = 10, step = 1e-06)
```

Arguments

cf	cash flow,the first cash flow is the initial outlay
cutoff	threshold to take npv as zero
from	smallest irr to try
to	largest irr to try
step	increment of the irr

See Also

irr

Examples

```
# irr2(cf=c(-5, 1.6, 2.4, 2.8))
# irr2(cf=c(-200, 50, 60, -70, 30, 20))
```

iss — *calculate the net increase in common shares from the potential exercise of stock options or warrants*

Description

calculate the net increase in common shares from the potential exercise of stock options or warrants

Usage

```
iss(amp, ep, n)
```

Arguments

amp	average market price over the year
ep	exercise price of the options or warrants
n	number of common shares that the options and warrants can be convened into

See Also

diluted.EPS

Examples

```
iss(amp=20,ep=15,n=10000)
```

lineChart — *Technical analysts - Line charts: show prices for each period as a continuous line*

Description

Technical analysts - Line charts: show prices for each period as a continuous line

Usage

```
lineChart(ohlc, y = "close", main = "", ...)
```

Arguments

ohlc	output from get.ohlc.yahoo or get.ohlc.google
y	y coordinates: close, open, high, low or adjusted (yahoo data only)
main	an overall title for the plot
...	Arguments to be passed to ggplot

See Also

get.ohlc.yahoo

get.ohlc.google

Examples

```
# google <- get.ohlc.yahoo("GOOG"); lineChart(google)
# apple <- get.ohlc.google("AAPL"); lineChart(apple)
```

`lineChartMult` *Technical analysts - Line charts: show prices for each period as a continuous line for multiple stocks*

Description

Technical analysts - Line charts: show prices for each period as a continuous line for multiple stocks

Usage

```
lineChartMult(ohlcs, y = "close", main = "", ...)
```

Arguments

`ohlcs`	output from get.ohlc.yahoo.mult or get.ohlc.google.mult
`y`	y coordinates: close, open, high, low or adjusted (yahoo data only)
`main`	an overall title for the plot
`...`	Arguments to be passed to ggplot

See Also

get.ohlcs.yahoo

get.ohlcs.google

lineChart

Examples

```
# googapple <- get.ohlcs.yahoo(c("GOOG","AAPL"),start="2013-01-01");
# lineChartMult(googapple)
# googapple <- get.ohlcs.google(c("GOOG","AAPL"),start="2013-01-01");
# lineChartMult(googapple)
```

`lt.d2e` *long-term debt-to-equity – Solvency ratios measure the firm's ability to satisfy its long-term obligations.*

Description

long-term debt-to-equity – Solvency ratios measure the firm's ability to satisfy its long-term obligations.

Usage

```
lt.d2e(ltd, te)
```

Arguments

`ltd`	long-term debt
`te`	total equity

See Also

`total.d2e`

`debt.ratio`

`financial.leverage`

Examples

```
lt.d2e(ltd=8000,te=20000)
```

`mmy2hpr` *Computing HPR, the holding period return*

Description

Computing HPR, the holding period return

Usage

```
mmy2hpr(mmy, t)
```

Arguments

`mmy`	money market yield
`t`	number of days remaining until maturity

See Also

bdy2mmy

hpr2mmy

hpr

Examples

```
mmy2hpr(mmy=0.04898,t=150)
```

`n.period` *Estimate the number of periods*

Description

Estimate the number of periods

Usage

```
n.period(r, pv, fv, pmt, type = 0)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
pv	present value
fv	future value
pmt	payment per period
type	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

pv

fv

pmt

discount.rate

Examples

```
n.period(0.1,-10000,60000000,-50000,0)

n.period(r=0.1,pv=-10000,fv=60000000,pmt=-50000,type=1)
```

npm *net profit margin – Evaluate a company's financial performance*

Description

net profit margin – Evaluate a company's financial performance

Usage

```
npm(ni, rv)
```

Arguments

ni	net income
rv	revenue (sales)

See Also

gpm

Examples

```
npm(ni=8000,rv=20000)
```

npv *Computing NPV, the PV of the cash flows less the initial (time = 0) outlay*

Description

Computing NPV, the PV of the cash flows less the initial (time = 0) outlay

Usage

```
npv(r, cf)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
cf	cash flow,the first cash flow is the initial outlay

See Also

pv.simple

pv.uneven

irr

Examples

```
npv(r=0.12, cf=c(-5, 1.6, 2.4, 2.8))
```

---

pmt *Estimate period payment*

Description

Estimate period payment

Usage

```
pmt(r, n, pv, fv, type = 0)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
n	number of periods
pv	present value
fv	future value
type	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

pv

fv

n.period

Examples

```
pmt(0.08,10,-1000,10)

pmt(r=0.08,n=10,pv=-1000,fv=0)

pmt(0.08,10,-1000,10,1)
```

pv *Estimate present value (pv)*

Description

Estimate present value (pv)

Usage

```
pv(r, n, fv = 0, pmt = 0, type = 0)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
n	number of periods
fv	future value
pmt	payment per period
type	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

pv.simple

pv.annuity

fv

pmt

n.period

discount.rate

Examples

```
pv(0.07,10,1000,10)

pv(r=0.05,n=20,fv=1000,pmt=10,type=1)
```

pv.annuity *Estimate present value (pv) of an annuity*

Description

Estimate present value (pv) of an annuity

Usage

```
pv.annuity(r, n, pmt, type = 0)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
n	number of periods
pmt	payment per period
type	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

pv

Examples

```
pv.annuity(0.03,12,1000)

pv.annuity(r=0.0425,n=3,pmt=30000)
```

pv.perpetuity *Estimate present value of a perpetuity*

Description

Estimate present value of a perpetuity

Usage

```
pv.perpetuity(r, pmt, g = 0, type = 0)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
pmt	payment per period
g	growth rate of perpetuity
type	payments occur at the end of each period (type=0); payments occur at the beginning of each period (type=1)

See Also

r.perpetuity

Examples

```
pv.perpetuity(r=0.1,pmt=1000,g=0.02)

pv.perpetuity(r=0.1,pmt=1000,type=1)

pv.perpetuity(r=0.1,pmt=1000)
```

---

pv.simple *Estimate present value (pv) of a single sum*

Description

Estimate present value (pv) of a single sum

Usage

```
pv.simple(r, n, fv)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
n	number of periods
fv	future value

See Also

pv

Examples

```
pv.simple(0.07,10,100)

pv.simple(r=0.03,n=3,fv=1000)
```

pv.uneven *Computing the present value of an uneven cash flow series*

Description

Computing the present value of an uneven cash flow series

Usage

```
pv.uneven(r, cf)
```

Arguments

r	discount rate, or the interest rate at which the amount will be compounded each period
cf	uneven cash flow

See Also

pv.simple

npv

Examples

```
pv.uneven(r=0.1, cf=c(-1000, -500, 0, 4000, 3500, 2000))
```

quick.ratio *quick ratio – Liquidity ratios measure the firm's ability to satisfy its short-term obligations as they come due.*

Description

quick ratio – Liquidity ratios measure the firm's ability to satisfy its short-term obligations as they come due.

Usage

```
quick.ratio(cash, ms, rc, cl)
```

Arguments

cash	cash
ms	marketable securities
rc	receivables
cl	current liabilities

See Also

current.ratio

cash.ratio

Examples

```
quick.ratio(cash=3000,ms=2000,rc=1000,cl=2000)
```

---

r.continuous *Convert a given norminal rate to a continuous compounded rate*

Description

Convert a given norminal rate to a continuous compounded rate

Usage

```
r.continuous(r, m)
```

Arguments

r	norminal rate
m	number of times compounded each year

See Also

r.norminal

Examples

```
r.continuous(0.03,4)
```

---

r.norminal *Convert a given continuous compounded rate to a norminal rate*

Description

Convert a given continuous compounded rate to a norminal rate

Usage

```
r.norminal(rc, m)
```

Arguments

rc	continuous compounded rate
m	number of desired times compounded each year

See Also

r.continuous

ear.continuous

Examples

```
r.norminal(0.03,1)

r.norminal(0.03,4)
```

---

r.perpetuity *Rate of return for a perpetuity*

Description

Rate of return for a perpetuity

Usage

```
r.perpetuity(pmt, pv)
```

Arguments

pmt	payment per period
pv	present value

See Also

pv.perpetuity

Examples

```
r.perpetuity(pmt=4.5,pv=-75)
```

sampling.error *Computing Sampling error*

Description

Computing Sampling error

Usage

```
sampling.error(sm, mu)
```

Arguments

sm	sample mean
mu	population mean

Examples

```
sampling.error(sm=0.45, mu=0.5)
```

SFRatio *Computing Roy's safety-first ratio*

Description

Computing Roy's safety-first ratio

Usage

```
SFRatio(rp, rl, sd)
```

Arguments

rp	portfolio return
rl	threshold level return
sd	standard deviation of portfolio retwns

See Also

Sharpe.ratio

Examples

```
SFRatio(rp=0.09,rl=0.03,sd=0.12)
```

Sharpe.ratio *Computing Sharpe Ratio*

Description

Computing Sharpe Ratio

Usage

```
Sharpe.ratio(rp, rf, sd)
```

Arguments

rp	portfolio return
rf	risk-free return
sd	standard deviation of portfolio retwns

See Also

coefficient.variation

SFRatio

Examples

```
Sharpe.ratio(rp=0.038,rf=0.015,sd=0.07)
```

slde *Depreciation Expense Recognition – Straight-line depreciation (SL) allocates an equal amount of depreciation each year over the asset's useful life*

Description

Depreciation Expense Recognition – Straight-line depreciation (SL) allocates an equal amount of depreciation each year over the asset's useful life

Usage

```
slde(cost, rv, t)
```

Arguments

cost	cost of long-lived assets
rv	residual value of the long-lived assets at the end of its useful life
t	length of the useful life

See Also

ddb

Examples

```
slde(cost=1200,rv=200,t=5)
```

`total.d2e` *total debt-to-equity – Solvency ratios measure the firm's ability to satisfy its long-term obligations.*

Description

total debt-to-equity – Solvency ratios measure the firm's ability to satisfy its long-term obligations.

Usage

```
total.d2e(td, te)
```

Arguments

`td`	total debt
`te`	total equity

See Also

`total.d2e`

`debt.ratio`

`financial.leverage`

Examples

```
total.d2e(td=6000,te=20000)
```

twrr — *Computing TWRR, the time-weighted rate of return*

Description

Computing TWRR, the time-weighted rate of return

Usage

```
twrr(ev, bv, cfr)
```

Arguments

ev	ordered ending value list
bv	ordered beginning value list
cfr	ordered cash flow received list

See Also

hpr

Examples

```
twrr(ev=c(120,260),bv=c(100,240),cfr=c(2,4))
```

volumeChart — *Technical analysts - Volume charts: show each period's volume as a vertical line*

Description

Technical analysts - Volume charts: show each period's volume as a vertical line

Usage

```
volumeChart(ohlc, main = "", ...)
```

Arguments

ohlc	output from get.ohlc.yahoo or get.ohlc.google
main	an overall title for the plot
...	Arguments to be passed to ggplot

See Also

get.ohlc.yahoo

get.ohlc.google

Examples

```
# google <- get.ohlc.yahoo("GOOG");
# volumeChart(google)
# apple <- get.ohlc.google("AAPL");
# volumeChart(apple)
```

---

was *calculate weighted average shares – weighted average number of common shares*

Description

calculate weighted average shares – weighted average number of common shares

Usage

```
was(ns, nm)
```

Arguments

ns	n x 1 vector vector of number of shares
nm	n x 1 vector vector of number of months relate to ns

See Also

EPS

diluted.EPS

Examples

```
s=c(10000,2000);m=c(12,6);was(ns=s,nm=m)

s=c(11000,4400,-3000);m=c(12,9,4);was(ns=s,nm=m)
```

wpr *Weighted mean as a portfolio return*

Description

Weighted mean as a portfolio return

Usage

```
wpr(r, w)
```

Arguments

r	returns of the individual assets in the portfolio
w	corresponding weights associated with each of the individual assets

Examples

```
wpr(r=c(0.12, 0.07, 0.03),w=c(0.5,0.4,0.1))
```

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