FUNCTION SIGNATURES

[Maturity, rates,Yields] = readExcelData(filename)

Filename		Name of the spreadsheet file

Discounts = bootstrap(Maturity, Rates)

Maturity, struct containing	depos	Maturity of the depos
	Swaps	Maturity of the swaps
	Bonds	Maturity of the bonds
Rates, struct containing	Depos	Bid and ask of the depos
	Swaps	Bid and ask of the swaps

zrates_curve = zeroRates(Discounts)

Discounts		discount curve computed through bootstrap

Zspread=bootstrapZspread(Discounts,Maturity,yield)

Discounts		discount curve
Maturity		Set of Maturities of the Corporate Bonds
yield		Set of Yields of the Corporate Bonds

Price=Pricer(Zrates,spread,coupon,maturity,t0,national,flag)

Zrates		Risk-free curve
spread		Spread curve
coupon		coupons of the instrument
maturity		maturity of the instrument
t0		Initial date
national		notional of the instrument
flag		Flag="bond" if we consider bonds, "swap" fi we consider swap

[Shocks,Rho,Vertices]=ReadParameters(file,flag)

File		Name of the spreadsheet file
Flag		Flag=" spread" if we consider spread, "rates" fi we consider rates

[Delta,Gamma]=ComputeSensitivity(Zrates,spread,instrument,portfolio,vertex,flag)

Zrates		Risk-free curve
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
portfolio		value of the portfolio at today
vertex		Vertices of the risk factor
flag		flag="cs01" if I want to compute the cs01, flag="pv01" if I want to compute the pv01

Indice=FindIndex(vertex,rates)

vertex		containing the vertices of the ir or cs
rates		zero rates or spread

cs01 =CS01(zrates,spread,instrument,portfolio,choice)

zrates		Risk-free curve
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
portfolio		value of the portfolio at today
choice		number corresponding to the vertex i want to shift, if 0 i don't do the shift

GammaCS01 =GammaCS01(zrates,spread,instrument,portfolio,choice)

zrates		Risk-free curve
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
portfolio		value of the portfolio at today
choice		number corresponding to the vertex i want to shift, if 0 i don't do the shift

pv01 =PV01(zrates,spread,instrument,portfolio,choice)

zrates		Risk-free curve
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
portfolio		value of the portfolio at today

choice		number corresponding to the vertex i want to shift, if 0 i don't do the shift

Gammapv01 =GammaPV01(zrates,spread,instrument,portfolio,choice)

zrates		Risk-free curve
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
portfolio		value of the portfolio at today
choice		number corresponding to the vertex i want to shift, if 0 i don't do the shift

K=ComputeCapital(sensitivities,RW,Rho)

sensitivities		sensitivity of the ir or cs
RW		risk weight vector
Rho		correlation matrix

TimeSerie=ReadTimeSerie(file,formatdate,flag)

file		Name of the spreadsheet file
formatdate		Format date 'dd/mm/yy'
flag		Flag="blue" if we consider the blue time serie, "yellow" fi we consider the yellow time serie

pvalue=ApplyTests(TimeSerie,LbLags,ArchLags,flag)

TimeSerie, struct contaning	Dates	Dates of the time series
	DeltaZrates	Zero rates of the time series
	DeltaSpread	Spread of the time series
LbLags		Number of legs for Ljung-Box test
ArchLags		Number of legs for Arch test
flag		Flag="rates" if we consider rates, "spread" fi we consider spread

VaR=FullMonteCarloVaR(TimeSerie,Zrates,vertex,spread, instrument,Portfolio,DeltaT,c)

TimeSerie, struct contaning	Dates	Dates of the time series
	DeltaZrates	Zero rates of the time series
	DeltaSpread	Spread of the time series
Zrates		Risk-free curve

vertex		Vertices of the risk factor
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
Portfolio		value of the portfolio at today
DeltaT		Time horizon
c		Confidence level

X_delta=cumulativesum(X_1,delta)

X_1		Delta rates of the time serie
delta		Time horizon

VaR=DeltaNormalVaR(TimeSerie,Zrates,vertex,spread,instrument,portfolio,DeltaT,c)

TimeSerie, struct contaning	Dates	Dates of the time series
	DeltaZrates	Zero rates of the time series
	DeltaSpread	Spread of the time series
Zrates		Risk-free curve
vertex		Vertices of the risk factor
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
portfolio		value of the portfolio at today
DeltaT		Time horizon
c		Confidence level

VaR=GammaNormalVaR(TimeSerie,Zrates,vertex,spread,instrument,portfolio,DeltaT,c)

TimeSerie, struct contaning	Dates	Dates of the time series
	DeltaZrates	Zero rates of the time series
	DeltaSpread	Spread of the time series
Zrates		Risk-free curve
vertex		Vertices of the risk factor
spread		Spread curve
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
portfolio		value of the portfolio at today
DeltaT		Time horizon
c		Confidence level

Var=HSVAR(TimeSerie,Zrates,spread,vertex,instrument,DeltaT,c,file,flag)

TimeSerie, struct contaning	Dates	Dates of the time series
	DeltaZrates	Zero rates of the time series
	DeltaSpread	Spread of the time series

Zrates		Risk-free curve
spread		Spread curve
Vertex		Vertices of the risk factor
Instrument, struct containing	Maturity	Maturity of the instruments
	Coupon	Coupon of the instruments
	Notional	Notional of the instruments
DeltaT		Time horizon
c		Confidence level
file		Name of the spreadsheet file
flag		"Blue" if i consider the blue serie, "Yellow" if i consider the yellow serie

[Rates,Spread]= ComputeCurves(TimeSerie,Zrates,spread,vertex,flag,file)

TimeSerie, struct contaning	Dates	Dates of the time series
	DeltaZrates	Zero rates of the time series
	DeltaSpread	Spread of the time series
Zrates		Risk-free curve
spread		Spread curve
Vertex		Vertices of the risk factor
file		Name of the spreadsheet file
flag		"Blue" if i consider the blue serie, "Yellow" if i consider the yellow serie

[minimum,index] = minposition(array)

array		Vector of the erros