```
   Help
#define WITH_formula 1
#include  "bs1d_lim.h"

static int CallUpOut_ReinerRubinstein(double s,double k,
    double l,double rebate,double t,double r,double divid,double si
    gma,double *ptprice,double *ptdelta)
{
  int phi,eta;
  double A,B,C,D,E,F;
  double dA,dB,dC,dD,dE,dF;

  phi=1;
  eta=-1;
  formula(s,k,r,divid,sigma,t,l,rebate,phi,eta,&A,&B,&C,&D,
    &E,&F,
    &dA,&dB,&dC,&dD,&dE,&dF);
  if (k>=l)
    {
      *ptprice=F;
      *ptdelta=dF;
    }
  else
    {
      *ptprice=A-B+C-D+F;
      *ptdelta=dA-dB+dC-dD+dF;
    }
  return OK;
}

int CALC(CF_CallUpOut)(void*Opt,void *Mod,PricingMethod *
    Met)
{
  TYPEOPT* ptOpt=( TYPEOPT*)Opt;
  TYPEMOD* ptMod=( TYPEMOD*)Mod;
  double r,divid,limit,rebate;

  r=log(1.+ptMod->R.Val.V_DOUBLE/100.);
  divid=log(1.+ptMod->Divid.Val.V_DOUBLE/100.);
  limit=((ptOpt->Limit.Val.V_NUMFUNC_1)->Compute)((ptOpt->    Limit.Val.V_NUMFUN
  rebate=((ptOpt->Rebate.Val.V_NUMFUNC_1)->Compute)((ptOpt-
```

```
    >Rebate.Val.V_NUMFUNC_1)->Par,ptMod->T.Val.V_DATE);

  return CallUpOut_ReinerRubinstein(ptMod->S0.Val.V_PDOUB
    LE,(ptOpt->PayOff.Val.V_NUMFUNC_1)->Par[0].Val.V_PDOUBLE,
            limit,rebate,ptOpt->Maturity.Val.V_DATE-pt
    Mod->T.Val.V_DATE,
            r,divid,ptMod->Sigma.Val.V_PDOUBLE,&(Met->
    Res[0].Val.V_DOUBLE),&(Met->Res[1].Val.V_DOUBLE));
}

static int CHK_OPT(CF_CallUpOut)(void *Opt, void *Mod)
{Option* ptOpt=(Option*)Opt;
  TYPEOPT* opt=(TYPEOPT*)(ptOpt->TypeOpt);

  if ((opt->Parisian).Val.V_BOOL==WRONG)
    return strcmp( ((Option*)Opt)->Name,"CallUpOutEuro");
  return WRONG;

}

static int MET(Init)(PricingMethod *Met,Option *Opt)
{
  if ( Met->init == 0)
    {
      Met->init=1;
    }

  return OK;
}

PricingMethod MET(CF_CallUpOut)=
{
  "CF_CallUpOut",
  {{" ",PREMIA_NULLTYPE,{0},FORBID}},
  CALC(CF_CallUpOut),
  {{"Price",DOUBLE,{100},FORBID},{"Delta",DOUBLE,{100},FORB
    ID} ,{" ",PREMIA_NULLTYPE,{0},FORBID}},
  CHK_OPT(CF_CallUpOut),
  CHK_ok,
  MET(Init)
} ;
```

References