

Help

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/*-----*/
/*  Monte Carlo algorithm for caplet prices in one-factor LMM with jumps  */
/*  Algorithm of Glasserman/Merener                                         */
/*                                                                           */
/*-----*/
/*  Sonke Blunck, Premia 2005                                             */
/*-----*/

#include "glassermanmerener.h"

extern "C" {
#include "lmm_jump1d_std.h"
#include "enums.h"

#if defined(PremiaCurrentVersion) && PremiaCurrentVersion < (2007+2) //The "#els
    static int CHK_OPT(MC_GM)(void *Opt, void *Mod)
    {
        return NONACTIVE;
    }
    int CALC(MC_GM)(void *Opt, void *Mod, PricingMethod *Met)
    {
        return AVAILABLE_IN_FULL_PREMIA;
    }
#else

    static int mc_glassermanmerenenr_caplet(NumFunc_1 *p, double l0, double t0, do
    {

        capletMat = capletMat - t0;

        return lmm_jump_caplet_MC_pricer(tenor, capletMat, strike, l0, sigma, number
    }

    int CALC(MC_GM)(void *Opt, void *Mod, PricingMethod *Met)
    {
        TYPEOPT *ptOpt = (TYPEOPT *)Opt;
        TYPEMOD *ptMod = (TYPEMOD *)Mod;
        int init_mc;
        init_mc = pnl_rand_init(Met->Par[0].Val.V_ENUM.value, 1, Met->Par[1].Val.V_L

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    if (init_mc != OK) return init_mc;
    return mc_glassermanmerenenr_caplet(ptOpt->PayOff.Val.V_NUMFUNC_1, ptMod->10
                                         ptMod->T.Val.V_DATE,
                                         ptMod->Sigma.Val.V_PDOUBLE,
                                         ptOpt->BMaturity.Val.V_DATE,
                                         ptOpt->FixedRate.Val.V_PDOUBLE,
                                         ptOpt->ResetPeriod.Val.V_DATE,
                                         Met->Par[0].Val.V_ENUM.value,
                                         Met->Par[1].Val.V_LONG,
                                         &(Met->Res[0].Val.V_DOUBLE));

}
static int CHK_OPT(MC_GM)(void *Opt, void *Mod)
{

    if ((strcmp(((Option *)Opt)->Name, "Caplet") == 0))
        return OK;
    else
        return WRONG;
}

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

        Met->Par[0].Val.V_ENUM.value = 0;
        Met->Par[0].Val.V_ENUM.members = &PremiaEnumRNGs;
        Met->Par[1].Val.V_LONG = 100;
    }
    return OK;
}

PricingMethod MET(MC_GM) =
{
    "MC_GlassermanMerener",
    { {"RandomGenerator", ENUM, {100}, ALLOW},
      {"N Simulation", LONG, {100}, ALLOW},

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        {" ", PREMIA_NULLTYPE, {0}, FORBID}
    },
    CALC(MC_GM),
    {"Price", DOUBLE, {100}, FORBID}/*,{"Delta",DOUBLE,{100},FORBID}*/ , {" ",
    CHK_OPT(MC_GM),
    CHK_ok,
    MET(Init)
} ;
}
```