

[Help](#)

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#include "pad.h"

static NumFunc_2 call =
{
    Call_StrikeSpot2, /*(Spot-Average)+*/
    {" ", PREMIA_NULLTYPE, {0}, FORBID, SETABLE}},
    CHK_call
};

static NumFunc_2 asian =
{
    Asian,
    {
        {"StartingDate", DATE, {0}, ALLOW, SETABLE},
        {"FinalDate", DATE, {0}, IRRELEVANT, UNSETABLE},
        {"Frequency", PDOUBLE, {0}, IRRELEVANT, UNSETABLE},
        {"InitialValue", PDOUBLE, {100}, IRRELEVANT, UNSETABLE}
    },
    {"Average", PDOUBLE, {100}, ALLOW, SETABLE},
    {" ", PREMIA_NULLTYPE, {0}, FORBID, SETABLE}
},
/*The average At at time t is given by: A0+S0+Sh+S2h+...+
    Snh/n with:*/
/*h=Frequency, nh=t-StartingDate */
/*frequency doesn't matter for continuous average*/
    CHK_call
};

static TYPEOPT AsianCallFloatingAmer =
{
    /*Maturity*/          {"Maturity", DATE, {0}, ALLOW, SETA
        BLE},
    /*PayOff*/            {"Payoff", NUMFUNC_2, {0}, FORBID, SETA
        BLE},
    /*PathDep*/           {"PathDep", NUMFUNC_2, {0}, FORBID, SETA
        BLE},

    /*MinOrElse*/         {"Average", PADE, {AVERAGE}, ALLOW, UNSE
        TABLE},
    /*EuOrAm*/            {"Amer", BOOL, {AMER}, FORBID, UNSETABLE

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    },
    /*PartOrTot*/    {"Total", BOOL, {TOTAL}, FORBID, UNSETA
        BLE},
    /*ContOrDisc*/    {"Continuous", BOOL, {CONT}, FORBID, UN
        SETABLE},

};

static int OPT(Init)(Option *opt, Model *mod)
{
    TYPEOPT *pt = (TYPEOPT *) (opt->TypeOpt);

    if (opt->init == 0)
    {
        opt->init = 1;
        opt->nvar = 7;
        opt->nvar_setable = 3;

        pt->PayOff.Val.V_NUMFUNC_2 = &call;
        pt->PathDep.Val.V_NUMFUNC_2 = &asian;

        (pt->MinOrElse).Val.V_PADE = AVERAGE;
        (pt->EuOrAm).Val.V_BOOL = AMER;
        (pt->PartOrTot).Val.V_BOOL = TOTAL;
        (pt->ContOrDisc).Val.V_BOOL = CONT;

        (pt->PathDep.Val.V_NUMFUNC_2)->Par[0].Val.V_DATE = 0.
0;
        (pt->PathDep.Val.V_NUMFUNC_2)->Par[1].Val.V_DATE = 0.
0;
        (pt->PathDep.Val.V_NUMFUNC_2)->Par[2].Val.V_PDOUBLE =
0.0;
        (pt->PathDep.Val.V_NUMFUNC_2)->Par[3].Val.V_PDOUBLE =
0.0;
        (pt->PathDep.Val.V_NUMFUNC_2)->Par[4].Val.V_PDOUBLE =
0.0;

        (pt->Maturity).Val.V_DATE = 1.0;
    }
}

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    return OK;  
}  
  
MAKEOPT(AsianCallFloatingAmer);
```

References