

[Help](#)

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#include "
href.././mod/bsld/bsld_stda/bsld_stda_h_src.pdfstda.h"
#include "
href.././common/error_msg_h_src.pdferror_msg.h"
#include " premia_obj.h"

static NumFunc_1 put =
{
    Put,
    {"Strike", PDOUBLE, {100}, FORBID, UNSETABLE}, {" ", PREMIA_NULLTYPE, {0}, FORBID, UNSETABLE}, {"CHK_call", PDOUBLE, {0}, FORBID, UNSETABLE}
};

static TYPEOPT GMIB =
{
    /*PayOff*/ {"Payoff", NUMFUNC_1, {0}, FORBID, UNSETABLE},
    /*EuOrAm*/ {"Euro", BOOL, {AMER}, FORBID, UNSETABLE},
    /*Maturity*/ {"Maturity", DATE, {0}, ALLOW, SETABLE},
    /*DeemedContribution*/ {"Deemed Contribution", PDOUBLE, {0}, IRRELEVANT, UNSETABLE},
    /*InitialAge*/ {"Initial Age", PDOUBLE, {0}, FORBID, UNSETABLE},
    /*Premium*/ {"Premium", PDOUBLE, {0}, IRRELEVANT, UNSETABLE},
    /*MinimumGuaranteed*/ {"MinimumGuaranteed", PDOUBLE, {0}, ALLOW, SETABLE},
    /*Number of Monitoring Dates*/ {"Number of Monitoring Dates", PINT, {0}, FORBID, UNSETABLE},
    /*Alpha*/ {"Alpha", RGDOUBLE, {0}, FORBID, UNSETABLE},
    /*Alpha_m*/ {"Alpha_m", RGDOUBLE, {0}, FORBID, UNSETABLE},
    /*MultiplierCPPI*/ {"MultiplierCPPI", PDOUBLE, {0}, IRRELEVANT, UNSETABLE},
    /*Ratchet*/ {"Ratchet at the Monitoring Dates(Boolean)", BOOL, {0}, FORBID, UNSETABLE},
    /*Gamma*/ {"Gamma", PDOUBLE, {0}, FORBID, UNSETABLE},
    /*Bonus B*/ {"Bonus", PDOUBLE, {0}, FORBID, UNSETABLE},
    /*WithdrawalRate G*/ {"WithdrawalRate", PDOUBLE, {0}, FORBID, UNSETABLE},
    /*Base case surrender charges*/ {"SurrenderCharges", PNLVECT, {0}, IRRELEVANT, UNSETABLE},
    /*Base case surrender Times*/ {"SurrenderTimes", PNLVECT, {0}, IRRELEVANT, UNSETABLE},
    /*Mortality*/ {"MortalityData", FILENAME, {0}, FORBID, UNSETABLE},
    /*Maximum WithdrawalRate G*/ {"MaximumWithdrawalRate", PDOUBLE, {0}, FORBID, UNSETABLE},
    /*RateAccumulation*/ {"RateAccumulation", PDOUBLE, {0}, FORBID, UNSETABLE},
    /*PremiumPercentage*/ {"PremiumPercentage", PDOUBLE, {0}, ALLOW, SETABLE},
    /*RollUpRate*/ {"CompoundRollUpRate", PDOUBLE, {0}, ALLOW, SETABLE},
    /*ForceOfMortality*/ {"ForceOfMortality", PDOUBLE, {0}, FORBID, UNSETABLE},
    /*TermCertainAnnuityMaturity*/ {"TermCertainAnnuityMaturity", DATE, {0}, ALLOW, SETABLE}
}
```

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};

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

    if (opt->init == 0)
    {
        opt->init = 1;
        opt->nvar = 24;
        opt->nvar_setable = 4;
        pt->PayOff.Val.V_NUMFUNC_1 = &put;

        (pt->Maturity).Val.V_DATE = 6;
        (pt->PremiumPercentage).Val.V_PDOUBLE = 1.0;
        (pt->CompoundRollUpRate).Val.V_PDOUBLE = 0.0;
        (pt->MinimumGuaranteed).Val.V_PDOUBLE = 0.101;
        (pt->TermCertainAnnuityMaturity).Val.V_DATE = 30;
    }

    return OK;
}

MAKEOPT(GMIB);

```