```
   Help
#include  "stda.h"

static NumFunc_1 put =
{
  Put,
  {{"Strike", PDOUBLE, {100}, ALLOW, SETABLE}, {" ", PREMIA
    _NULLTYPE, {0}, FORBID, SETABLE}},
  CHK_call
};

static TYPEOPT iCPPI =
{
  /*PayOff*/      {"Payoff", NUMFUNC_1, {0}, ALLOW, SETABLE
    },
  /*EuOrAm*/       {"Euro", BOOL, {AMER}, IRRELEVANT, UNSE
    TABLE},
  /*Maturity*/     {"Maturity", DATE, {0}, ALLOW, SETABLE},
  /*DeemedContribution;*/ {"Deemed Contribution", PDOUBLE,
    {0}, IRRELEVANT, UNSETABLE},
  /*InitialAge*/ {"Initial Age", PDOUBLE, {0}, IRRELEVANT,
    UNSETABLE},
  /*Premium;*/ {"Premium", PDOUBLE, {0}, ALLOW, SETABLE},
  /*MinimumGuaranteed*/ {"MinimumGuaranteed", PDOUBLE, {0},
     ALLOW, SETABLE},
  /*Number of Monitoring Dates*/ {"Number of Monitoring Da
    tes", PINT, {0}, ALLOW, SETABLE},
  /*Alpha*/ {"Alpha", PDOUBLE, {0}, IRRELEVANT, UNSETABLE},
  /*Alpha_m*/ {"Alpha_m", PDOUBLE, {0}, IRRELEVANT, UNSETA
    BLE},
  /*MultiplieriCPPi*/ {"MultiplieriCPPi", PDOUBLE, {0}, ALL
    OW, SETABLE},
  /*Ratchet*/{"Ratchet", BOOL, {0}, IRRELEVANT, UNSETABLE},
  /*Gamma*/ {"Gamma", PDOUBLE, {0}, IRRELEVANT, UNSETABLE},
  /*Bonus B*/ {"Bonus", PDOUBLE, {0}, IRRELEVANT, UNSETABLE
    },
  /*WithdrawlRate G*/ {"WithdrawlRate", PDOUBLE, {0}, IRREL
    EVANT, UNSETABLE},
  /*Base case surrender charges.*/{"SurrenderCharges", PNLV
    ECT, {0}, IRRELEVANT, UNSETABLE},
    /*Base case surrender Times.*/{"SurrenderTimes", PNLVEC
```

```
    T, {0}, IRRELEVANT, UNSETABLE},
  /*Mortality*/{"MortalityData", FILENAME, {0}, IRRELEVANT,
     UNSETABLE},
  /*Maximum WithdrawlRate G*/ {"MaximumWithdrawlRate", PDO
    UBLE, {0}, FORBID, UNSETABLE},
  /*RateAccumulation*/ {"RateAccumulation", PDOUBLE, {0},
    FORBID, UNSETABLE},
  /*PremiumPercentuage*/ {"PremiumPercentuage", PDOUBLE, {0
    }, FORBID, UNSETABLE},
  /*RollUpRate*/ {"CompoundRollUpRate", PDOUBLE, {0}, FORB
    ID, UNSETABLE},
/*ForceOfMortality*/ {"ForceOfMortality", PDOUBLE, {0}, FO
    RBID, UNSETABLE},
  /*TermCertainAnnuitiyMaturity*/ {"TermCertainAnnuitiyMatu
    rity", DATE, {0},FORBID,UNSETABLE},
};

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 = 5;

      pt->PayOff.Val.V_NUMFUNC_1 = &put;

      (pt->Maturity).Val.V_DATE = 1.0;
      (pt->Premium).Val.V_PDOUBLE = 100.;
      (pt->MultiplieriCPPi).Val.V_PDOUBLE = 2.;
      (pt->MinimumGuaranteed).Val.V_PDOUBLE = 90.;
      (pt->NumberofMonitoringDates).Val.V_PINT = 52;
    }

  return OK;
}

MAKEOPT(iCPPI);
```

References