Generated by: calypso_user, DataServer: localhost Time: Fri Jun 28 03:39:21 EDT 2024
Name: FxTARF
Calculator: ForwardPayoff
Description:

Script: Variables

```
Constant StartDate As ReferenceDate From Product.StartDate
Constant AccrualSchedule As PaymentDate[]
Constant BuySell As Integer From Product.BuySell
Constant FxQuotable As Quotable From Product.Underlying
Constant Notional As Double From Product.Notional
Constant NotionalCcy As Currency From Product.Currency
Constant SettleCcy As Currency
 Constant LeverageRatio As Double
Constant CallPut As Enum 'Call', 'Put'
Constant FinalPaymentType As Enum 'Full', 'ExactStrike', 'ExactNotional', 'None'
Constant Strike As Double
Constant KOLevel As Double
Constant SettlementType As Enum 'Cash','Physical'
CallPutSign As Double
KnockedOut As Boolean
AccrueAbove As Double
AccrueBelow As Double
PeriodStrike As Double
PeriodAccruedNotional As Double
TotalAccruedNotional As Double
PeriodAccruedIntrinsicValue As Double
TotalAccruedIntrinsicValue As Double
AdjustedStrike As Double
AdjustedNotional As Double
OptionNPV As Measure To NPV
m_ProbKo As Measure
m_PayoutCap As Measure
m_KOLevel As Measure
A1_Fixing As ScheduleMeasure From AccrualSchedule
 A2_PerStrike As ScheduleMeasure From AccrualSchedule
A3_PerNotional As ScheduleMeasure From AccrualSchedule
A4_PerProfit As ScheduleMeasure From AccrualSchedule
A5_AccProfit As ScheduleMeasure From AccrualSchedule
```

Script: Forward

```
StartDate:
  Select Case CallPut
    Case 'Call'
      CallPutSign = 1.0
      AccrueAbove = Notional
      AccrueBelow = (Notional * LeverageRatio)
    Case 'Put'
      CallPutSign = -1.0
      AccrueAbove = (Notional * LeverageRatio)
      AccrueBelow = Notional

   EndSelect
  m_KOLevel = KOLevel
  m_PayoutCap = (Notional * KOLevel)
AccrualSchedule:
  A1_Fixing = FxQuotable
  If Not(KnockedOut) Then
```

```
   PeriodAccruedNotional = If((FxQuotable > Strike), AccrueAbove, AccrueBelow)
   PeriodStrike = Strike
   Select Case CallPut
     Case 'Call'
       PeriodAccruedIntrinsicValue = Max(0, (FxQuotable - PeriodStrike))
     Case 'Put'
       PeriodAccruedIntrinsicValue = Max(0, (PeriodStrike - FxQuotable))

    EndSelect
   If ((TotalAccruedIntrinsicValue + PeriodAccruedIntrinsicValue) >= KOLevel) Then
     KnockedOut = True
     m_ProbKo = 1.0
     Select Case FinalPaymentType
       Case 'Full'
         Select Case SettlementType
           Case 'Physical'
             OptionNPV += PhysicalFx(NotionalCcy, ((BuySell * CallPutSign) *
PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, 'KNOCK_OUT', 1)
           Case 'Cash'
             OptionNPV += CashFx(SettleCcy, NotionalCcy, ((BuySell * CallPutSign) *
PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, 'KNOCK_OUT', 1)

          EndSelect
       Case 'ExactStrike'
         AdjustedStrike = (FxQuotable - (CallPutSign * (KOLevel -
TotalAccruedIntrinsicValue)))
         PeriodStrike = AdjustedStrike
         Select Case SettlementType
           Case 'Physical'
             OptionNPV += PhysicalFx(NotionalCcy, ((BuySell * CallPutSign) *
PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, 'KNOCK_OUT', 1)
           Case 'Cash'
             OptionNPV += CashFx(SettleCcy, NotionalCcy, ((BuySell * CallPutSign) *
PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, 'KNOCK_OUT', 1)

          EndSelect
       Case 'ExactNotional'
         AdjustedNotional = (PeriodAccruedNotional * ((KOLevel -
TotalAccruedIntrinsicValue) / PeriodAccruedIntrinsicValue))
         PeriodAccruedNotional = AdjustedNotional
         Select Case SettlementType
           Case 'Physical'
             OptionNPV += PhysicalFx(NotionalCcy, ((BuySell * CallPutSign) *
PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, 'KNOCK_OUT', 1)
           Case 'Cash'
             OptionNPV += CashFx(SettleCcy, NotionalCcy, ((BuySell * CallPutSign) *
PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, 'KNOCK_OUT', 1)

          EndSelect
       Case 'None'
         OptionNPV += 0

      EndSelect
   Else
     Select Case SettlementType
       Case 'Physical'
         OptionNPV += PhysicalFx(NotionalCcy, ((BuySell * CallPutSign) *
PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, '', 1)
       Case 'Cash'
```

```
          OptionNPV += CashFx(SettleCcy, NotionalCcy, ((BuySell * CallPutSign) *
 PeriodAccruedNotional), FxQuotable, PeriodStrike, 1, '', 1)

       EndSelect
    EndIf
    TotalAccruedNotional += PeriodAccruedNotional
    TotalAccruedIntrinsicValue += PeriodAccruedIntrinsicValue
    A2_PerStrike = PeriodStrike
    A3_PerNotional = PeriodAccruedNotional
    A4_PerProfit = PeriodAccruedIntrinsicValue
    A5_AccProfit = TotalAccruedIntrinsicValue
  EndIf
```

Script: BOEvents

```
KNOCK_OUT|KnockedOut
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Script: BarrierDescriptors

AccrualSchedule|KOLevel|TotalAccruedIntrinsicValue|Up|Out|Closing|False