```
Sub Calc_Hend(delt As Double, Nsize As Integer, T_dif As Double, H As Variant, H_end As Variant)
  'returns the H_end matrix corresponding to T_dif years from the
  'begining of zone with single transition matrix H
  Dim n_zone As Integer
  Dim n1 As Integer
  Dim n2 As Integer
  Dim i As Integer
  Dim j As Integer
    n_zone = T_dif / delt
    n1 = Int((Log(n_zone)) / Log(2))
    n2 = Round((n_zone - 2 ^ n1), 0)

   'Htemp = H
  'H_end = H

Dim Z As Variant: ReDim Z(Nsize, Nsize)

For i = 1 To Nsize: For j = 1 To Nsize: Z(i, j) = H(i, j): Next j: Next i
H_end = WorksheetFunction.MMult(Z, Z)

For i = 1 To (n1 - 1): H_end = WorksheetFunction.MMult(H_end, H_end): Next i
If (n2 > 0) Then
    For i = 1 To n2
      H_end = WorksheetFunction.MMult(H_end, H)
    Next i
Else
    'nothing
End If

End Sub
```