**VBA code for Cholesky Decomposition**

Sub Chol\_Decomp()

Dim z() As Double, a As Double, incov() As Double, chol() As Double

Randomize

numvar = 5

r = numvar

ReDim z(r), incov(r, r), chol(r, r)

'

'The desired covariance matrix must be read into incov()

'

For i = 1 To r

For j = 1 To r

incov(i, j) = Sheets("Sheet1").Cells(i, j)

Next j

Next i

a = incov(1, 1) ^ 0.5

i = 1

Do Until i > r

chol(i, 1) = incov(i, 1) / a

i = i + 1

Loop

chol(2, 2) = (incov(2, 2) - chol(2, 1) ^ 2) ^ 0.5

i = 3

Do While i <= r

j = 2

Do While j < i

' Figure out the sum

sumval = 0

For m = 1 To j - 1

sumval = sumval + chol(i, m) \* chol(j, m)

Next m

'

chol(i, j) = (incov(i, j) - sumval) / chol(j, j)

j = j + 1

Loop

'

' compute another sum

sum2 = 0

For j = 1 To i - 1

sum2 = sum2 + chol(i, j) ^ 2

Next j

chol(i, i) = (incov(i, i) - sum2) ^ 0.5

i = i + 1

Loop

For i = 1 To r

For j = 1 To r

Sheets("Sheet2").Cells(i, j) = chol(i, j)

Next j

Next i

End Sub

**SAS Code for Propensity Scores Utility Measure**

**Data** Synthetic;

input x1-x5 y;

cards;

--- Data ---

**proc** **logistic**;

model y = x1-x5

x1\*x2 x1\*x3 x1\*x4 x1\*x5 x2\*x3 x2\*x4 x2\*x5 x3\*x4 x3\*x5 x4\*x5;

score out = scores;

**SAS Code for Confidentiality Measure**

**Data** Synthetic2;

input Id1 X1-X5 Id2 Y1-Y5;

cards;

--- Data ---

**proc** **cancorr**; var x1 x3 x4 x5; with y1 y3 y4 y5;