BigA = C'\*A

for ii in 2:pD

BigA = [BigA; C'\*A^ii]

end

ThAD = [C'\*A^(ii - 1)\*B for ii in 1:pD];

# adding zeros to the matrix

aD = ThAD

DynMD = aD

for ii in 1:(mD - 2)

aD = [zeros(ny,nu);aD[1:(pD-1)\*ny,:]]

DynMD = [DynMD aD]

end

# adjusting dynamic matrix for since p > m (last column)

bD = C'\*B

AiD = I(nx)

for ii = 1:(pD - mD)

AiD = AiD + A^ii

bD = [bD;C'\*AiD\*B]

end

BigB = [DynMD [zeros(ny\*(mD-1),nu);bD]]

# selecting inputs from controller

BigS = [ones(pD,1) zeros(pD,2)]

# for computing the current state

BigX = A^(pD - 1)\*B

for ii in (pD - 2):-1:0

BigX = [BigX A^ii\*B]

end