

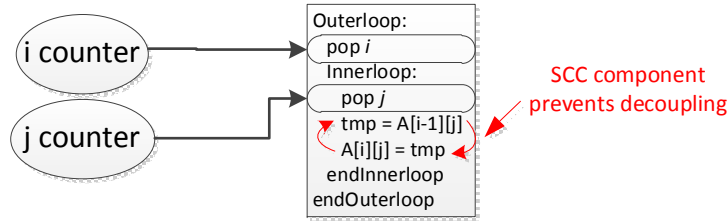
Outerloop:For i = 1 to M  
 InnerLoop:For j= 1 to N  
**Load:** tmp = A[i-1][j]  
**Store:** A[i][j] = tmp  
 Endfor  
 barrier  
 Endfor

Ensure ordering  
 across different outer  
 (i) loop iterations

$\&A[i'-1][j'] \neq \&A[i''][j'']$   
 if  $i'-1 \neq i''$

$\&A[i'-1][j'] = \&A[i''][j'']$   
 if  $i' = i''-1$  and  $j' = j''$

With mem dependency edge added from  
 store to load



With mem Barrier inserted after  
 innerLoop

