

Again, there are two possibilities

(1) Change in a nonbasic column  $a_j$  of  $A$  (Change in  $A_{nj}$ )

In this case, primal feasibility is not affected. Dual solution  $y$  remains unchanged.

The only changes are in the  $j$ th component of  $s_j$

i.e.  $s_j = (c_j - a_j^T y)$ .

If  $s_j \leq 0$  we are STILL OPTIMAL.

Else we can reoptimize using the primal Simplex method.

(2) Changes in a basic column  $a_j$  of  $A$ .

THIS IS THE MOST DIFFICULT CASE, since it affects BOTH primal and dual feasibility

Since  $x_B = A_B^{-1} b$   $x_B$  changes

Also since  $A_B^T y = c_B$   $y$  changes.