## Case 4

path A - wa - U4 - w5 - U2 - w8 - U5 - w6

input delay = 0

AND (U4)

input transition = 0.9

Cell delay = 0.3553

Cell transition = 0.3854

FF (U2)

setup time = 0.2802

hold time = 0.0417

$t_{cq}$ = 0.5275

output transition = 0.5081

path A - wa - U3 - w4 - U1 - w2 - U4 - w5 - U2 - w8 - U5

input delay = 0

INV (U3)

input transition = 0.9

cell delay = 0.3598

cell transition = 0.3987

FF (U1)

setup time = 0.2411

hold time = 0.0560

$t_{cq}$ = 0.5006

output transition = 0.38294

AND (U4)

Input transition = 0.38294

cell delay = 0.3857

cell transition = 0.3327

FF (U2)

setup time = 0.2804

hold time = 0.0417

$t_{cq}$ = 0.5279

## Timing analysis (Path 1)

### Input to Reg

arrival time = 0 + 0.3553 = 0.3598

required time = 3 + 1 − 0.2802 = 3.7198

slack = 3.36

## Timing analysis (Path 2)

### Input to Reg

arrival time = 0.3598

required time = 3 + 1 − 0.2411 = 3.7589

slack = 3.3991

### Reg to Reg

arrival time = 1 + 0.5006 + 0.3857 = 1.8863

required time = 3 + 1 − 0.2804 = 3.7196

slack = 1.8333