

Merger simulation using Bertrand model shown on pages 741-742 of Church and Ware:

ONLY change cells B10 - B23, which are estimated demand parameters, pre-merger marginal costs and anticipated efficiencies. Rest adjusts automatically.

$$q_1 = 125 - 4 \cdot p_1 + 0.5 \cdot p_2 + 0.75 \cdot p_3$$

$$c_1 = 19$$

$$q_2 = 105 + 0.5 \cdot p_1 - 3.5 \cdot p_2 + 0.8 \cdot p_3$$

$$c_2 = 10$$

$$q_3 = 175 + 0.75 \cdot p_1 + 0.8 \cdot p_2 - 5.5 \cdot p_3$$

$$c_3 = 12$$

Cost efficiencies: $e_1 = 0.99$ (post-merger: $c_1 \cdot e_1$)

Cost efficiencies: $e_2 = 0.97$ (post-merger: $c_2 \cdot e_2$)

a1: 125

a2: 105

a3: 175

b: 4

d: 0.5

e: 0.75

f: 3.5

g: 0.8

h: 5.5

c1: 19.00

c2: 10.00

c3: 12.00

e1: 0.99

e2: 0.97

Pre-merger Bertrand Equilibrium							
Good	p	q	c	$s(pq)$	$profits$	Tot. π :	2231.5
1	29.10	40.4	19.00	0.27	408.0	CS:	
2	25.02	52.6	10.00	0.30	789.3	TS:	
3	25.71	75.4	12.00	0.44	1034.2	HHI:	3502

Post-merger Bertrand Equilibrium									
Good	p	q	c	$s(pq)$	$profits$	Tot. π :	2280.3	% Δ p:	% Δ π :
1	30.06	37.0	18.81	0.25	416.3	CS:		3.3	2.1
2	25.75	50.6	9.70	0.30	811.7	TS:		2.9	2.8
3	25.83	76.1	12.00	0.45	1052.3	HHI:	5053	0.5	1.7