

The Hendricks-McAfee Model Simulator

Vertical Merger Assessment

- This takes several minutes to compute. Please be patient.
- If program times out, use seeing the computation in action
- You may enter new values at any time, then press calculate to restart calculations.
- To increase the number of firms (maximum 50), enter a new value for n.
- Information about inputs is available [here](#).
- For a complete discussion of the theory, see our [paper](#).
- To see the computations in action, click [here](#).

Enter Market Data

Downstream demand elasticity, η :	<input type="text" value="3"/>
Retailing cost elasticity, η :	<input type="text" value="5"/>
Upstream production cost elasticity, η :	<input type="text" value="2"/>
The number of firms, n :	<input type="text" value="4"/>
Intermediate to final good price ratio, η :	<input type="text" value="0.4"/>
Type of merger (1, 2, or 3):	<input type="text" value="3"/>

Merger of Firms 1 and 2. Type=1 merges downstream only, type=2 upstream only, type=3 merges both.

Firm	Downstream Share	Upstream Share
1	<input type="text" value="20"/> %	<input type="text" value="20"/> %
2	<input type="text" value="20"/> %	<input type="text" value="20"/> %
3	<input type="text" value="20"/> %	<input type="text" value="20"/> %
4	<input type="text" value="20"/> %	<input type="text" value="20"/> %
Fringe	<input type="text" value="20"/> %	<input type="text" value="20"/> %

The last row is for a price-taking competitive fringe.

Fringe:	<input type="text" value="0"/> %	<input type="text" value="0"/> %
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Calculate

Current Time: Seconds: FindRoots:

Warnings

Error: Nonpositive fringe beta detected, set to beta.

Error: Nonpositive fringe eta detected, set to eta.

Calculated Values						
Input Parameters						
Alpha	3	Beta	5	Eta	2	
Number of Firms	4	Fringe Beta	5	Fringe Eta	2	
Type	3	This is a merger of both upstream and downstream assets.				
Market Calculations						
Variable		Pre-Merger Level		Post-Merger Level		
Intermediate/Final Price		40. %		40.2 %		
MHI		2.91 %		4.37 %		
Percentage of Efficient Quantity		95.5 %		93.1 %		
Percentage Price Increase		---		0.85 %		
Percentage Quantity Increase		---		-2.51 %		
Intermediate Price Increase		---		1.37 %		
Individual Firm Calculations						
Firm	Downstream Shares		Upstream Shares		Initial Capacity Shares	
no.	Pre-merger	Post-Merger	Pre-merger	Post-Merger	Downstream	Upstream
1	20. %	37.1 %	20. %	37. %	20.4 %	20.5 %
2	20. %	0 %	20. %	0 %	20.4 %	20.5 %
3	20. %	20.9 %	20. %	20.9 %	20.4 %	20.5 %
4	20. %	20.9 %	20. %	20.9 %	20.4 %	20.5 %
Fringe	20. %	21. %	20. %	21.1 %	18.2 %	18.2 %
72 solutions to two-dimensional FindRoots, using 1331 steps.						

The Hendricks-McAfee Model Simulator		
Enter Market Data		
Downstream demand elasticity, α :	<input type="text" value=".333333"/>	
Retailing cost elasticity, β :	<input type="text" value="5"/>	
Upstream production cost elasticity, η :	<input type="text" value=".5"/>	
The number of firms, n :	<input type="text" value="15"/>	
Intermediate to final good price ratio, θ :	<input type="text" value=".7"/>	
Type of merger (1, 2, or 3):	<input type="text" value="3"/>	
Firm	Downstream Share	Upstream Share
1	<input type="text" value="9.7"/> %	<input type="text" value="7"/> %
2	<input type="text" value="8.9"/> %	<input type="text" value="7"/> %
3	<input type="text" value="19.2"/> %	<input type="text" value="26.4"/> %
4	<input type="text" value="17.8"/> %	<input type="text" value="21.5"/> %
5	<input type="text" value="16"/> %	<input type="text" value="16.6"/> %
6	<input type="text" value="20.4"/> %	<input type="text" value="13.8"/> %
7	<input type="text" value="6.8"/> %	<input type="text" value="5.4"/> %
8	<input type="text" value="0"/> %	<input type="text" value="2.3"/> %
9	<input type="text" value=".3"/> %	<input type="text" value="0"/> %
10	<input type="text" value=".2"/> %	<input type="text" value="0"/> %
11	<input type="text" value=".2"/> %	<input type="text" value="0"/> %
12	<input type="text" value=".2"/> %	<input type="text" value="0"/> %
13	<input type="text" value=".1"/> %	<input type="text" value="0"/> %
14	<input type="text" value=".1"/> %	<input type="text" value="0"/> %
15	<input type="text" value=".1"/> %	<input type="text" value="0"/> %
Fringe	<input type="text" value="0"/> %	<input type="text" value="0"/> %
The last row is for a price-taking competitive fringe.		
Fringe:	β : <input type="text" value="0"/> %	η : <input type="text" value="0"/> %
<input type="button" value="Calculate"/>		

Current Time: <input type="text"/>	Seconds: <input type="text"/>	FindRoots: <input type="text"/>

Warnings

Calculated Values						
Input Parameters						
Alpha	0.3333	Beta	5	Eta	0.5	
Number of Firms	15	Fringe Beta	5	Fringe Eta	0.5	
Type	3	This is a merger of both upstream and downstream assets.				
Market Calculations						
Variable		Pre-Merger Level		Post-Merger Level		
Intermediate/Final Price		70. %		70.2 %		
MHI		20. %		21.3 %		
Percentage of Efficient Quantity		94.7 %		94.4 %		
Percentage Price Increase		---		0.953 %		
Percentage Quantity Increase		---		-0.316 %		
Intermediate Price Increase		---		1.25 %		
Individual Firm Calculations						
Firm	Downstream Shares		Upstream Shares		Initial Capacity Shares	
no.	Pre-merger	Post-Merger	Pre-merger	Post-Merger	Downstream	Upstream
1	9.7 %	17.5 %	7. %	13.3 %	9.33 %	6.2 %
2	8.9 %	0 %	7. %	0 %	8.48 %	6.2 %
3	19.2 %	19.5 %	26.4 %	26.6 %	19. %	29.5 %
4	17.8 %	18. %	21.5 %	21.7 %	17.8 %	22.2 %
5	16. %	16.2 %	16.6 %	16.7 %	16. %	16.1 %
6	20.4 %	20.7 %	13.8 %	13.9 %	22. %	13. %
7	6.8 %	6.9 %	5.4 %	5.45 %	6.36 %	4.72 %
8	0 %	0 %	2.3 %	2.32 %	0 %	1.97 %
9	0.3 %	0.304 %	0 %	0 %	0.267 %	0 %
10	0.2 %	0.203 %	0 %	0 %	0.178 %	0 %
11	0.2 %	0.203 %	0 %	0 %	0.178 %	0 %
12	0.2 %	0.203 %	0 %	0 %	0.178 %	0 %
13	0.1 %	0.101 %	0 %	0 %	0.0888 %	0 %
14	0.1 %	0.101 %	0 %	0 %	0.0888 %	0 %
15	0.1 %	0.101 %	0 %	0 %	0.0888 %	0 %
Fringe	0 %	0 %	0 %	0 %	0. %	0. %
360 solutions to two-dimensional FindRoots, using 5433 steps.						