



# Merger simulation

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# Simulation methods predict post-merger prices and quantities

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- Requirements
  - Pre-merger prices and quantities
  - Pre-merger margins
  - Willingness of consumers to substitute between products
  - Incremental cost efficiencies
- Application to common models of competition
  - Price setting in markets with differentiated goods
    - ◆ Case examples: H&R Block/TaxAct and Pioneer/Pannar
  - Bidding models
    - ◆ Case examples: CCC/Mitchell and Oracle/PeopleSoft

## Takeaway points

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- The quantification of effects will be important in two situations
  - (1) when it is necessary to balance efficiencies and unilateral effects
  - (2) when model predictions likely diverge from standard structural presumptions about likely effects
- Pre-merger margins can be as important as diversions
- Sometimes simulation techniques are not helpful or, even worse, generate misleading results

# Price setting models: South Africa corn seed merger between Pioneer & Pannar

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- Background
  - 3-to-2 merger in the short term: Monsanto, Pioneer, Pannar
  - Large merger-specific incremental cost reductions for Pannar
  - Lower trait fees for Pannar also affected Monsanto's pricing decisions
  - 3-year price cap remedy proposed for Pannar's prices
- UPP not useful in this case
  - UPP for Pioneer would be large under the assumption that diversion is proportional to share
  - UPP cannot account for the effect on Monsanto's pricing
- Applied price setting model assuming linear demand
  - Diversion proportional to market shares
  - Cost information compiled from accounting information

## Pioneer/Pannar: select simulation results on price

All RSA Pioneer stake in Pannar 20%–100%	Base Case		Pannar All Hybrid Remedy	
	Smith Table 32	Smith Table 38	Pannar price cap on all hybrids	
	Price changes excluding efficiencies	Price changes including efficiencies	Price changes excluding efficiencies	Price changes including efficiencies
<b>Diversion proportional to share</b>				
Pioneer	16.8%	13.6%	8.3%	9.2%
Pannar	19.6%	10.2%	0.0%	0.0%
Monsanto	6.2%	1.5%	1.3%	-1.0%
Change in avg. expenditure per unit/agg. volume	<b>12.0%</b>	<b>6.5%</b>	<b>2.6%</b>	<b>1.6%</b>
Change in Laspeyres price index	<b>11.7%</b>	<b>6.3%</b>	<b>2.6%</b>	<b>1.6%</b>
Change in Paasche price index	<b>11.1%</b>	<b>5.8%</b>	<b>2.5%</b>	<b>1.2%</b>

Note: The analyses presented in this table do not include dynamic efficiencies

## Bidding models

- Two types of bidding models: sealed bid and open auction
- An open auction's unilateral effects are driven by pre-merger margins and the frequency of which merging parties are the winner or runner up
- Effects varying the shares and margins of the merging parties in a 4-firm market assuming no efficiencies

4 to 3 merger			
Average pre-merger margin	Merging parties' shares (per firm)		
	30%	25%	20%
40%	11%	7%	4%
25%	7%	4%	2%
10%	3%	2%	1%

## Limitations of simulation models

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- The focus on price competition may be inappropriate
- Models may not be able to incorporate important factors
  - Example: Pannar licensed all of its genetic material from Monsanto for an important segment of its sales
- Status quo analysis may be biased if the market is moving in a predictable direction
  - Example: Pannar's share was declining. A simulation based on current market conditions would likely overestimate the anticompetitive effects of the transaction, assuming the decline continued



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