

Many stores make some form of “Price Match” promise to their customers. How might game theory help us to understand why they do this?

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In a market without collusion, firms aggressively compete with one another until price equals marginal cost and profit is equal to zero. The prisoner’s dilemma game below demonstrates how this may occur.

		Firm B		
Firm A		High Prices	Low Prices	
	High Prices	3,3	1,4	
	Low Prices	4,1	2,2	

Bertrand-Nash Equilibrium

For simplicity I will assume that firms have a choice between high and low pricing. If they charge high prices they will share a monopoly profit, and low prices will yield zero/normal profit. The above matrix-type diagram shows that both Firm A and B have a strictly dominant strategy to set prices at the lower level. Each firm’s best response is low prices because they each receive a higher payoff by charging low prices, irrelevant of the other firm’s strategy. Therefore the Bertrand-Nash Equilibrium is found where both firms charge low prices, with each receiving a payoff of 2. This is not a Pareto efficient outcome.

As long as the firms know the number of periods in a game, they will continue to defect again and again by charging low prices. Only when the game is played an infinite number of times and firms value their future sufficiently high enough, is there a possibility for firms to conform to achieve a Pareto optimal outcome.

In the real world, firms are unaware of when competition with other firms will end (games are played an infinite number of times). It is possible for firms to collude in order to achieve high prices and a share of monopoly profits. Referring to the above game they could each achieve a payoff of 3, which is higher than the Bertrand-Nash Equilibrium. However, once an agreement has been made there is a high incentive for either firm to deviate from their agreement by pricing marginally below their competitor. In this case, the deviator would capture the entire market and almost the full monopoly profits.

It could be argued that firms have created a method of charging high prices without the risk of being undercut by competitors. This is a “Price Match” promise. A Price Match promise involves one firm promising to match another firm’s price, should it be lower. So if one firm deviates from an agreement to collude and charge high prices, by cutting their prices, the other firm will punish them by charging low prices forevermore. Firms can confidently charge high prices, as their competitors have no incentive to deviate. Using my previously example, if firm A were to lower its prices, firm B would instantly match the new price. Neither party would benefit by a reduction in prices, therefore the Price Match promise is a credible enough threat to remove any risk of price competition. This is clearly undesirable for consumers.

Some firms have developed the Price Match promise further, offering to refund more than the difference when matching a competitor’s price. This is often called a Price Match Plus. PC World state, “We’ll not only match the price but also beat it by 10% of the difference.”¹ If firms have colluded agreeing on a set price, one firm could undercut their competitor without lowering their price. To do so they advertise their prices above the agreed amount, then by conducting a Price Match Plus, refund the difference plus an extra amount making the new price lower than agreed.

With many firms offering similar products, it may be hard to believe that all firms offering Price Match policies are involved in some form of collusion. It could be used as a marketing tool, encouraging consumers to buy with confidence. Many firms offer a time period after purchase for consumers to seek a lower price and receive the difference refunded. A famous example being John Lewis, who offer a 28-day time period². As long as collusion is not occurring, a Price Match can be beneficial to consumers, in particular those with high searching costs. They can confidently make a purchase from a firm offering a Price Match, as it is possible to search for a lower price at a more convenient time.

To conclude, game theory demonstrates how firms can sustain collusion by offering a “Price Match” promise to their customers. This is undesirable for consumers, as consumer welfare is lost with a price maintained well above the market equilibrium level. However if collusion is not evident, it may be an innocent marketing tool used to increase brand loyalty. In this case, consumers can make a purchase with the confidence that they are receiving a good deal.

Word Count: 748

References:

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- Morten Hviid, Summary of the literature on price guarantees, July 2010, ESRC Centre for Competition Policy and UEA Law School

¹ PC World, Price Promise, <http://www.pcworld.co.uk/gbuk/Price-Promise-875-theme.html>

² John Lewis, Our Price Commitment, http://www.johnlewis.com/jl_assets/pdf/nku_oct08.pdf