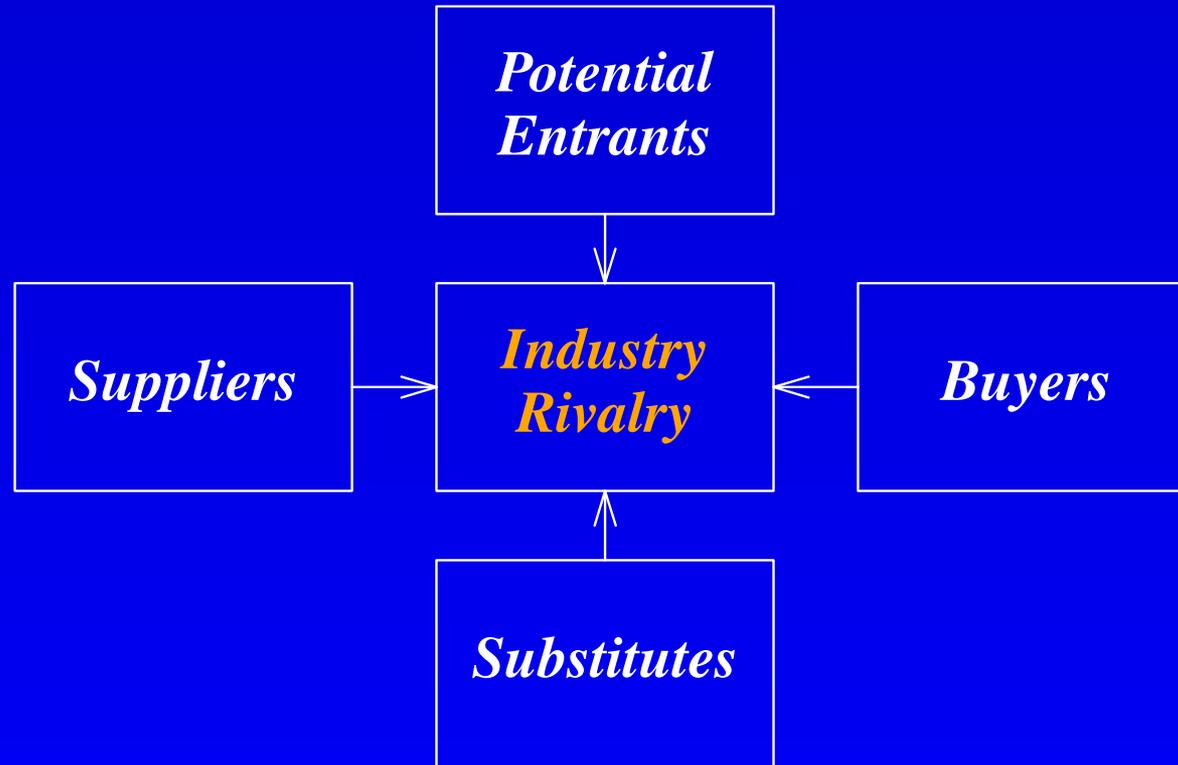


SM 1: RIVALRY

Professor Robert Marks

- 1. Why Rivalry?**
- 2. Goal is the Bottom Line: a Duopoly Game.**
- 3. Pricing is a Prisoner's Dilemma.**
- 4. Reputation in Rivalry.**
- 5. Market Structure.**
- 6. Changing the Rules.**

Porter's Five Forces:



Forces/Threats Driving Industry Competition

Industry Rivalry

1. Who Is Your Rival?

- **the potential entrant**
 - to the industry
 - to the segment
- **established firms**
 - in your segment or not?

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2. How do you compete?

- **innovation**
- **pricing**
- **capacity**
- **advertising/marketing**
- **alliances**
- **differentiation**

Rivalry

- **What is rivalry?**
 - **What forms does rivalry take?**
 - **What other ways can we think about business interactions?**

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Rivalry

- **What is rivalry?**
 - **What forms does rivalry take?**
 - **What other ways can we think about business interactions?**
- **Pricing rivalry**
 - **What is pricing rivalry?**
 - **Is it always (ever?) a good idea?**
 - **How does market structure affect dynamic strategies?**
 - **A case study of rivalry: Boeing v. Airbus**

In Managers, Markets, and Prices:

You learnt:

- **about applying the *tools of game theory* to analyse *oligopolies* (markets with few sellers), including two-seller *duopolies***
- **with the concept of *Nash equilibrium*: a situation where no player wants to alter its strategy, given others' strategies**
- **Oligopolies (including duopolies) can be modelled as *Prisoner's Dilemmas*:**
 - **collectively you'd both be better off *cooperating*, but**
 - **individually you're each better *defecting* (cutting your price in a price war, or expanding your capacity as in OPEC)**

Repetition and Reputation

- but *repetition* may allow firms, players, to escape from this logic, without recourse to contracts, trust, or third parties — indeed, even without direct communication — to sustain cooperative behaviour, by developing a *reputation*.

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Today: we explore repeated rivalry, and why some industries have more cooperation, while others are more competitive.

A Case: The Post v. The News.

- **Rupert Murdoch's *New York Post* takes on the *New York Daily News*.**

	<i>N.Y. Post</i>	<i>N.Y. News</i>
January 1994	40¢	40¢

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	(in Staten Island)	
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Until Feb 1994 both papers were sold at 40¢. Then the *Post* raised its price to 50¢ but the *News* held to 40¢ (since it was used to being the first mover).

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So both were now priced at 50¢ everywhere in NYC.

Question: Left or Right?

You can choose Left or Right:

Profits:

	<i>Left</i>	<i>Right</i>
You	\$40 m	\$80 m
Rival	\$20 m	\$160 m

A Pricing Rivalry Duopoly Game

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- **If one seller charges a lower price, then that seller gets all the sales.**

Demand For The Product

The industry demand for the product is as follows:

<i>Industry Demand</i>	
<i>Price</i>	<i>Quantity</i>
\$9	0
\$8	1
\$7	2
\$6	3
\$5	4
\$4	5
\$3	6
\$2	7
\$1	8
\$0	9

Profits and Costs

- **If you price at \$4 and the other team at \$5, then you make all the sales, selling 5 units for a sales revenue of \$20. The other team has zero revenue.**



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$$\pi = \$20 - (5 \times \$2) = \$10$$

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➤ Your aim is to maximise your team's *profit*.

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- **What patterns of play can you see across the score sheet?**

Dynamic Pricing Rivalry

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 - **Because most interactions in most markets are repeated.**

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This interaction is very similar to a *repeated PD*.

Reminder: The Prisoner's Dilemma (the lower the better)

		<i>Kelly</i>	
		Spill	Mum
<i>Ned</i>	Spill	8, 8	0, 20
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- ∴ Spill is a *dominant strategy* for Ned, and Mum is a *dominated strategy*.
- Likewise for Kelly.

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- **Need to consider more than just one period's profit**
 - *Look forward and reason backwards*
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- **Depends on:**
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 - the *discount rate* and the time horizon
- **Some general concerns:**
 - How quickly can my rivals respond?
 - What is the difference between defection profits versus monopoly profits?
 - Will my actions in this market affect other markets?

Coordinating an Equilibrium



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Highly context- or situation-specific.
Difficult to coordinate in turbulent markets.
Sometimes facilitated by traditions and conventions.

A Scenario

- **Suppose you are meeting a friend in Paris on the 6th of June next.**
- **You know the time and the day, but not the place.**
- **You don't have their email address or mobile number.**
- **Where will you wait?**
- **(Write it down.)**

Focal Points

- **Firms need a *focal point* — a strategy so compelling that it is natural to adopt and expect others to adopt**
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- **Tit-For-Tat is such a strategy (remember, you met it in MMP)**
 - **a variation of the “eye-for-an-eye” rule of behaviour**
 - **cooperation in the first period (nice), then mimic your rival’s action from the previous period**

Four Attributes for an Effective Strategy

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 - **Niceness:** it starts out cooperating.
 - **Provocability:** one defection and you're on.
 - **Forgiving:** if its rival cooperates, then it relents.
- ∴ Not easily exploited!***

An Ideal Strategy?

➤ **Tit-For-Tat manages to encourage cooperation wherever possible, but avoids exploitation.**



An Ideal Strategy?

- **Tit-For-Tat manages to encourage cooperation wherever possible, but avoids exploitation.**
- **But flaws?**
 - **Misperceptions costly: mistakes “echo” back and forth**
 - **No way of saying “enough is enough”**
 - **And what if there is more than one other player?**

➤ **Other possibilities?**

—

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- ***Tat for Two Tits***: need two successive cooperates by the other player to stop defecting.
- ***Always Defect***: you bastard!

Signals

We assume others in our industry know what we mean:

- **despite noise,**
- **despite ambiguity,**
(“I thought you would see that I was punishing them, not you”)
- **despite possible inconsistency.**

Case: Price wars.

Case: David Jones

Case: How misunderstanding can lead to price wars

It may be that many real-life price wars are not started by deliberate attempts by one firm to steal business from its competitors, but instead flow from misreads and misunderstanding of rivals' behaviour.

Such as Besanko's tyre manufacturers (in the handout).

More Questions.

- **What conditions influence the intensity of price competition in a market?**
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- **When should a firm match the price of a rival, and when should it do its own thing?**

Price competition is a dynamic, strategic process: a firm's decisions will affect how rivals and the firm itself behave in the future.

➤

More Questions.

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Price competition is a dynamic, strategic process: a firm's decisions will affect how rivals and the firm itself behave in the future.

- What if the *NY News* had understood the *NY Post's* intentions better in the example above (or the Sydney interaction several years earlier)?

Price Competition

So far we have discussed:

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- How do repeated interactions with rivals affect a firm's decisions?**

Price Competition

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Now:

- **An Exercise: Boeing and Airbus (from JGD)**
- **Which conditions influence the intensity of price competition?**
- **What is the value of committing to match any prices charged by rivals?**
- **Why are firms in some markets able to coordinate prices while others engage in price wars?**

Shared Beliefs in the Management Team

Critical beliefs within the firm:

- **How does this business work?**
- **What will your rivals do? (reputation)**
- **How do you shape your rivals' expectations about you? (signalling)**

Your Firm's Reputation

- **What your rivals expect you to do.**
- **Extrapolated from past behaviour.**
- **Reputation as an asset or liability?**

Syndicate Exercise: Boeing v. Airbus (from JGD)

Strategic Instability

Markets shift from calm coexistence (“live and let live”, or it could be rivalrous dance) to turbulent rivalry:

- if a firm behaves in a way inconsistent with its reputation,**
- a declining leader who holds the line,**
- difficult (costly) to reestablish mutually consistent expectations.**

Reputations as Assets

- **A core business**
- **Cut-throat pricing**
- **Has lower ROI requirements than we do**
- **Dangerous when bitten**
- **Irrational!**

One Approach

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A route to a stable equilibrium?

- signalling
- reputation
- focal points

Common Patterns

High product differentiation (brands):

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Low product differentiation and high “fixed” costs:

- incentives to sell at any margin above avoidable cash cost
- differences in commitment
- reputation (again)

How market structure affects the sustainability of cooperative pricing

Under certain market structures firms will find it difficult to coordinate on a focal strategy, and their behaviour may be influenced by market structure.

Four conditions of market structure that may affect the attainment of cooperative pricing and competitive stability:

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- 3. Asymmetries among firms,**
- 4. Multi-market contact between firms.**

Conditions for collusion.

Four reasons why a firm's response to its rivals' actions might be delayed:

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- 2. lags in confirming rivals' prices**
- 3. ambiguities in identifying exactly who (among a group) is cutting price**
- 4.**

Conditions for collusion.

Four reasons why a firm's response to its rivals' actions might be delayed:

- 1. infrequent interactions,**
- 2. lags in confirming rivals' prices**
- 3. ambiguities in identifying exactly who (among a group) is cutting price**
- 4. difficulties in separating falls in sales due to rivals' stealing from those due to unanticipated contractions in market demand.**

All of these slow the firm's reaction time, and so the effectiveness of retaliatory price cuts against defecting firms.

Moderating Influences

Several structural conditions affect the importance of these factors:

- **Market concentration**
- **Lumpiness of Orders**
- **Information about sales transactions**
- **The number and size of buyers**
- **Volatility of demand and cost conditions**

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- **Strategic use of inventories and order backlogs**

Most-favoured-customer (MFC) clauses.

**Under a MFC clause, a supplier undertakes to give the favoured customer (MFC) a price at least as low as the best price given to its other customers.
(Remember meeting them in MMP.)**

So a discount to any customer requires a discount to the MFC too.

MFC clauses can be retrospective or contemporaneous.

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- **raise barriers to entry (*entry effect*)**

The Bottom Line

- **Price competition may be more harmful than helpful**
 - **Weigh benefits versus costs**
- ***Look forwards and reason backwards.***
- **Notice the signals from other players in the game, without explicit collusion.**
- **Your firm's reputation can be both an asset and a liability in matters of industry rivalry.**