EE481: Industrial Economics

SCP and NEIO

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Homework

**** Due: Friday 14th September at 2pm in class. (late homework counts as 50% if your marks)**

** Adapted from Industrial Organization: A Strategic Approach by Church & Ware. Practice Question in Chapter 10. You can also try other problems as your practice for the midterm exam.

Suppose that demand is given by $P = 300 - Q$ and marginal cost equals 10. Firms are Cournot competitors and play a supergame. The collusive agreement being considered is for each to produce one-fourth of the monopoly output (there are 4 firms in this industry).

(a) What is the critical discount factor to sustain collusion using grim punishment strategies if detection of deviation requires 2 periods (so, the cheating firm enjoys high profit for 2 periods)?

(b) Do you think the value of the critical discount factor will be higher or lower if detection of deviation requires 3 periods? Explain.

(b) Do you think the value of the critical discount factor will be higher or lower if the number of firms increases to 5? Explain.

Summary

- The SCP framework can be used to analyze firms' performance.
- SCP analyzes 1) Industry Structure 2) Firms' Conducts 3) Firms' Performance.
- Some measures of structure and performance will be discussed in this class.
  - measures of structure: HHI, CR4, etc.
  - measures of performance: price-cost margin, Tobin's Q
- Market power = ability to charge price above cost (has positive margin).
- Market power comes from high concentration, low price-elasticity, ability to collude.

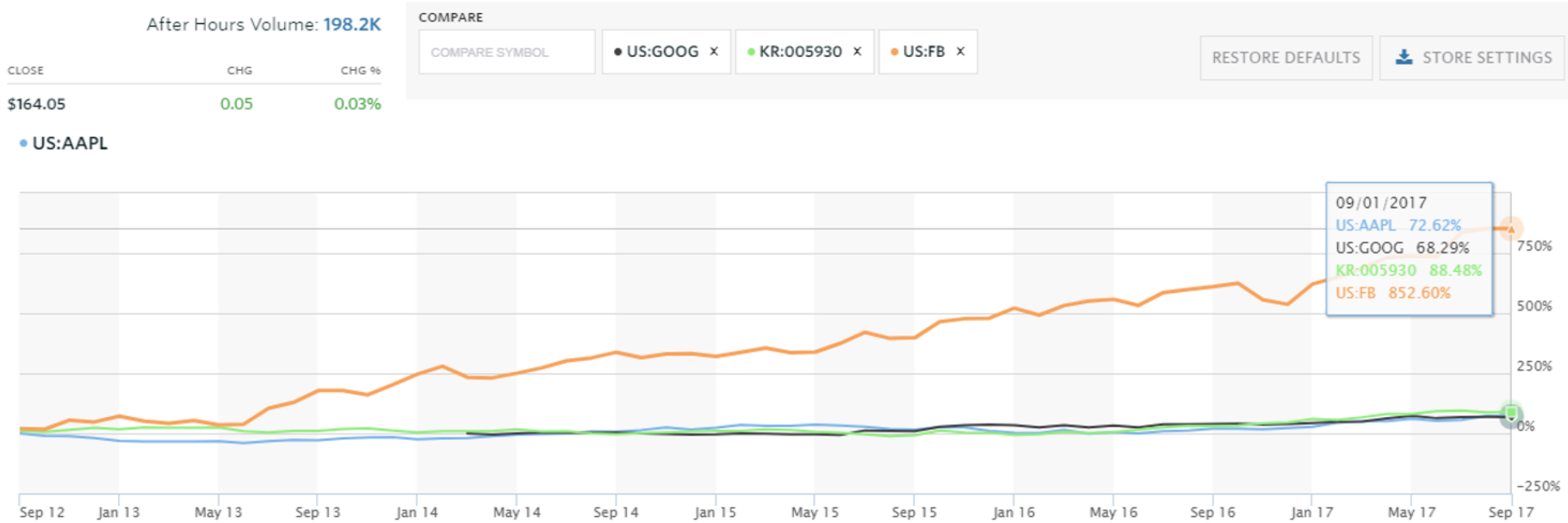
Some Observations

Alibaba stock outperformed that of Amazon, Apple and Ebay during the past year.

source: http://www.marketwatch.com

Some Observations

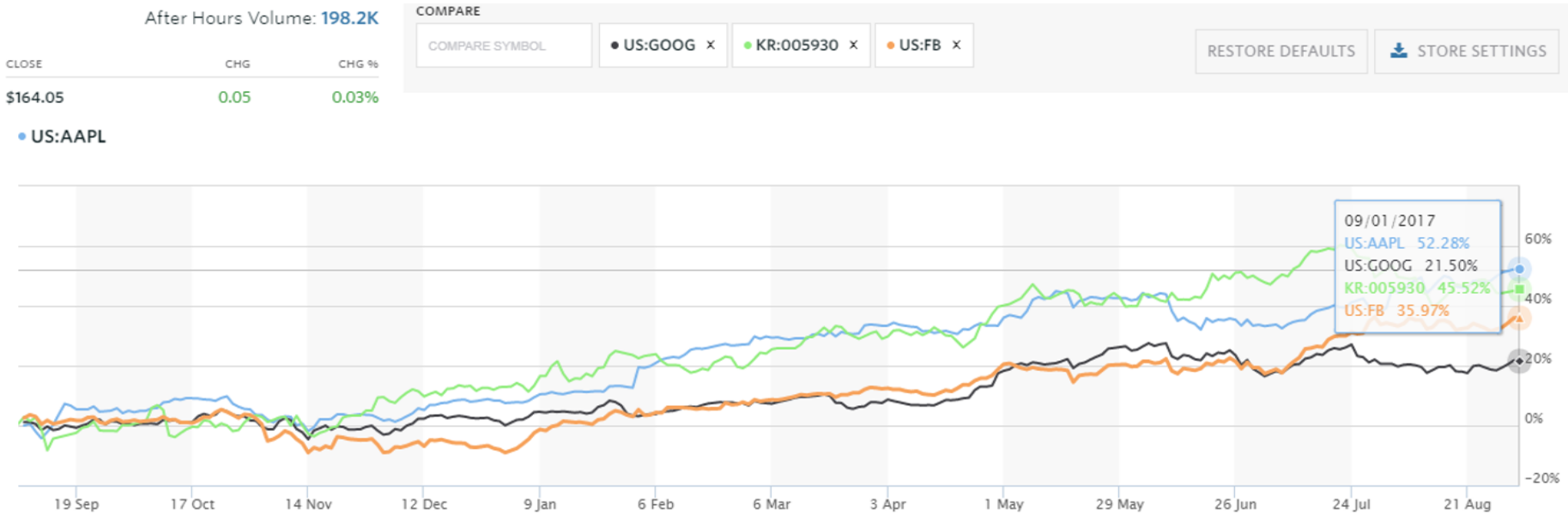
If you put money in the Facebook stock 5 years ago, you would get a 852% return.



source: http://www.marketwatch.com

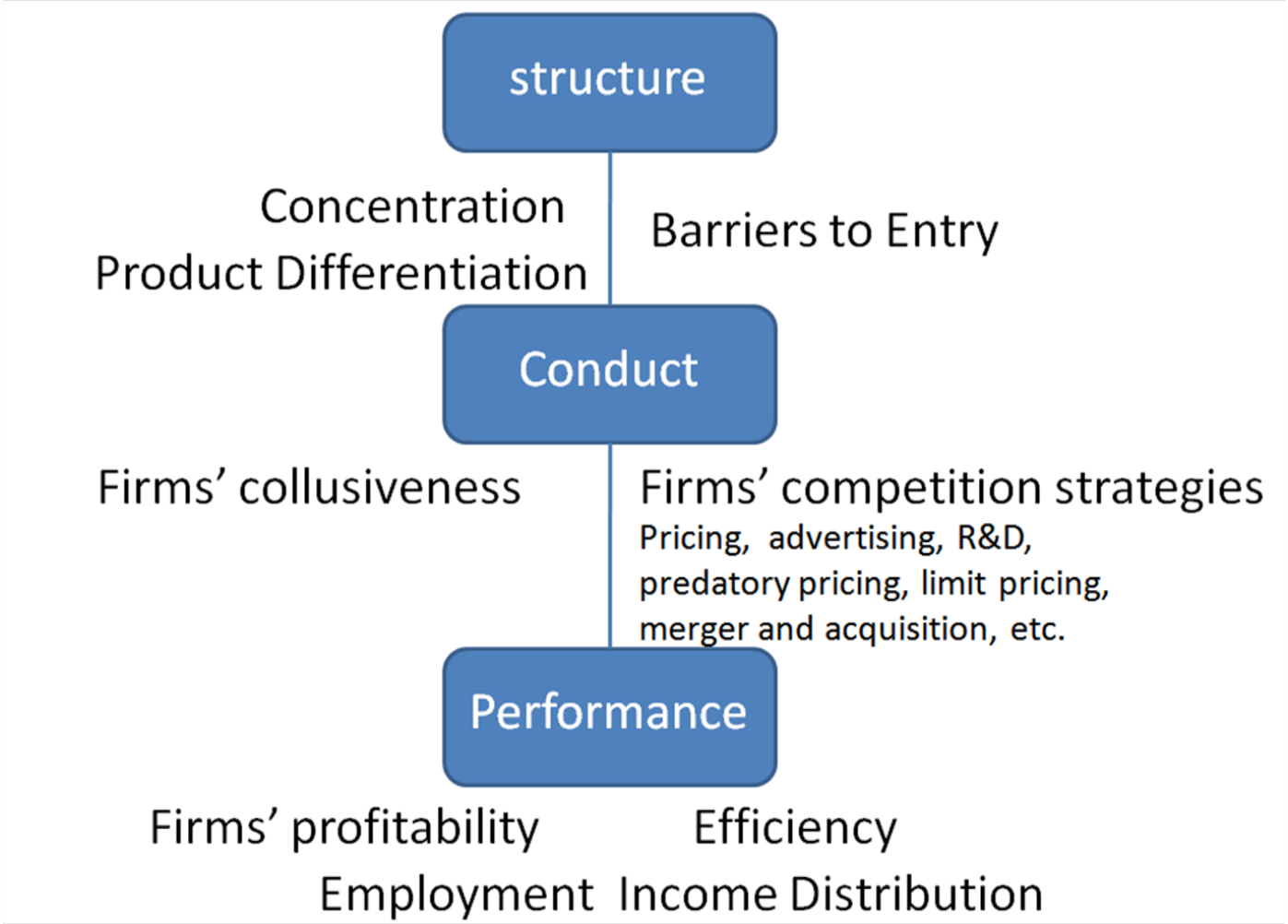
Some Observations

Consider the performance of Apple, Google, Samsung and Facebook during the past year.



source: http://www.marketwatch.com

Structure Conduct Performance (SCP)



Measures of Market Structure

1. Industry Concentration (number of firms)
2. Barriers to Entry (is it easy to enter?)
3. Product Differentiation (are all products the same?)
4. Unionization (do the workers form a strong labor union?)
5. etc.

These factors determine the basis (potential competitiveness) of the industry.

Concentration

- Industry Concentration - the higher the number of firms, the less industry concentration (production activity is not concentrated within just a few firms)

1. **Herfindahl-Hirschman Index**

2. **Concentration ratio (CR4 and CR8)**

Lower market concentration -> likely to be more competitive.

Barriers to Entry

- Barriers to entry may also determine industry performance
  - Economies of Scale
  - Product Differentiation
  - Absolute Cost Advantage
  - Government Regulations

  Lower barrier to entry -> likely to be more competitive.

Unionization

- A strong labor union can take a big share of profit away from firm.
- This increase marginal cost and may increase price.
- A firm that makes a lot of money may not turn out to be that profitable.
- Unionization may discourage entries.

Strong labor union -> likely to be less competitive.

Example of Market Structure Analysis

Market Conditions	Industry 1	Industry 2	Industry 3
Seller Concentration (CR4)	100%	100%	$> 95\%$
Buyer Concentration (CR4)	$< 0.0001\%$	$< 0.0001\%$	$>8\%$
Homogenous Product	almost	no	almost
Barriers to Entry			
Large Plant Scales	no	no	yes
Large Investment Costs	no	no	yes
Government License	yes	no	no

Conduct (what firms do)

- Collusion
- Pricing Strategies
- Quality Choice
- Advertising Strategies
- R&D
- Predatory Pricing, Limit Pricing
- Merger and Acquisition
- Franchise

(Most of these conducts will be discussed in later on in this class.)

Theories of Price Markups and Economics Profits

Predictions Based on Market Structure	$p - MC$	π_{SR}	π_{LR}
Competition	0	+ or -	0
Monopolistic competition	+	+ or -	0
Monopoly	+	+ or -	+ or 0
Oligopoly	+	+ or -	+ or 0

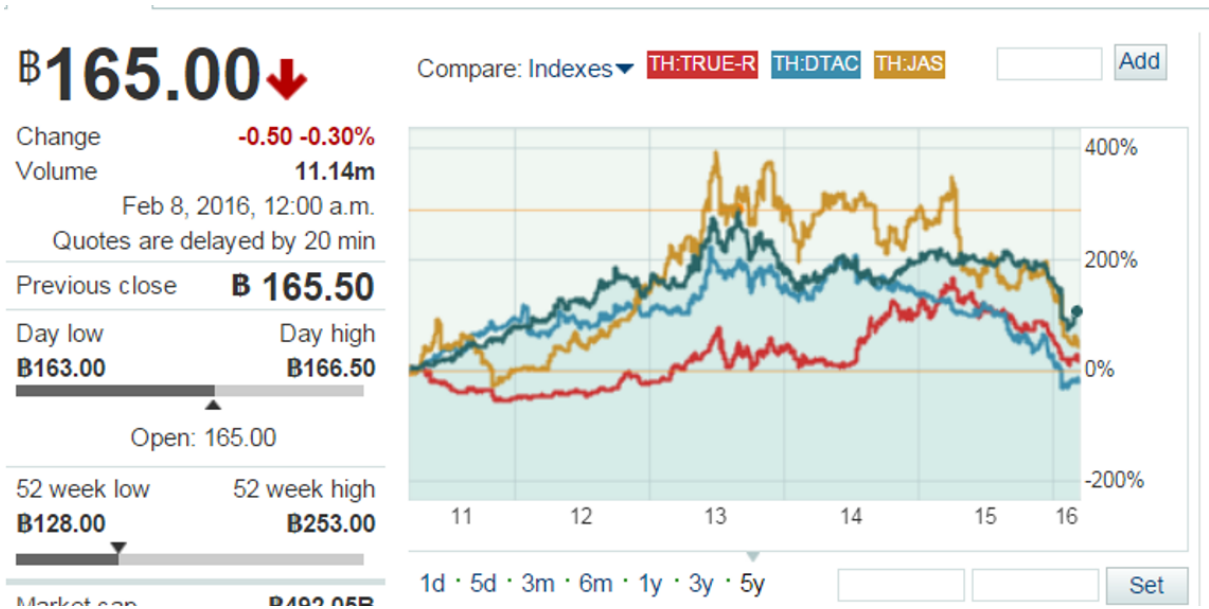
- Market power = ability to charge price above marginal cost.
- π_{SR} is not informative.
- π_{LR} reflects whether there is free-entry, not market power.
- Using $P - MC$ is more informative about the market power than using profits.

Measurements of Market Performace

- Rates of Return - how much is earned per 1 baht (dollar) of investment.
- Lerner's index (or adjusted price-cost margin - $\frac{P-MC}{P}$).
- Other measures such as Tobin's q ratio ($\frac{\text{Market Value}}{\text{Value based on replacement cost}}$)
- In industrial organization, we usually use price-cost margin.

Structure vs. Performance

- Industrial Organization researchers have not been able to find a universal pattern of how structure relates to performance.
  - High market concentration does not nescessarily lead to high profit
  - The relationship differs industry by industry.



source: http://www.marketwatch.com

NEIO

NEIO (New Industrial Industrial Organization)

- Usually studies 1 industry at a time.
- Estimates degree of market power and sources of market power in each industry.
    - i.e. does not assume a stable relationship across industries between structural variables and performance
- Market power = ability to charge price higher than marginal cost.

Price-Cost Margins

Price-cost margin is usually used to measure the degree of market power:

$$\text{Price-Cost Margin} = P - MC$$

$$\text{Lerner's Index (or adjusted price-cost margin)} = \frac{\text{Price-Cost Margin}}{P}$$

When MC is not available, people use AVC in practice.

Derivation of the Lerner's Index

The Market's Lerner's Index

The market's Lerner's index is practically the firms' weighted-average Lerner's index.

Market Power Comes from 3 Sources

From the market Lerner's Index, we can infer that market power comes from 3 sources.

1. High Market Concentration
2. Low Price elasticity of demand
3. Ability to Collude

Reference and Further Reading I

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Rand Journal of Economics 17: 1-17, 1986.

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