Graduate School of Business

Overview of Competition Economics

Overview of Competition Economics

Key measures of competition in economic analysis

Market power: the ability of firms to control the price and use it as a competitive weapon. Market power implies price is above marginal cost.

Ability of firm to earn economic profit in the long run. Economic profit implies that price is above average cost

Market Structure

Effective competition

Market Power

Important measures of Market Power

Concentration ratio (Market Share)

Herfindhal-Hirschman Index (Market Share)

Price elasticity of demand

Lerner Index

Cross-price elasticity of demand

Effective competition and relevant market

Effective competition and relevant market

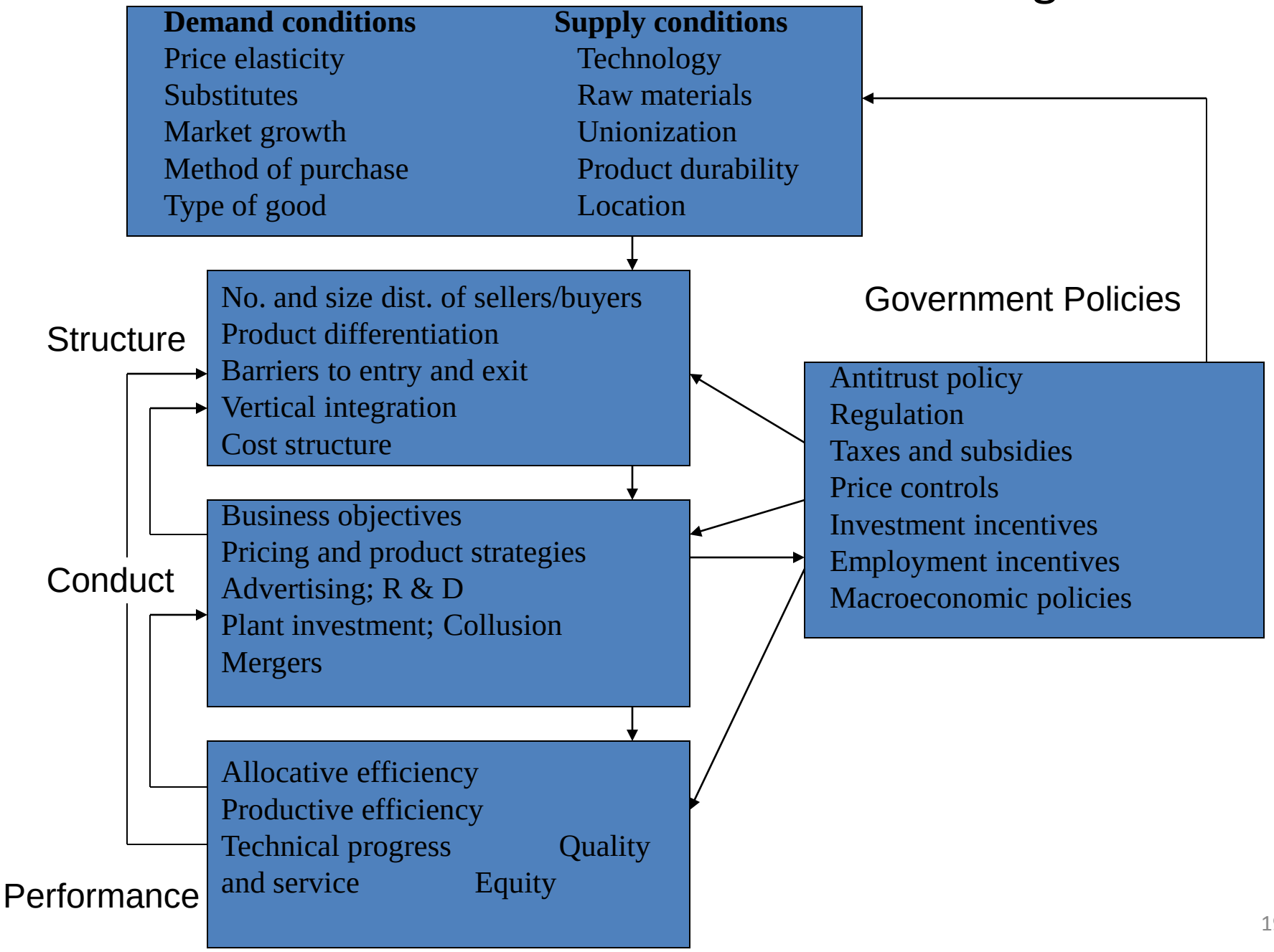
Economic benefits of Competition law

Competition and Social Economic Efficiency

Industrial Organisation

Structure-Conduct-Performance paradigm (SCP)

Structure-Conduct-Performance Paradigm



Price theory paradigm

Contestable market approach

SCP – Empirical Example 1
Tung, Lin and Wang (2010)

THE MARKET STRUCTURE, CONDUCT AND PERFORMANCE PARADIGM RE-APPLIED TO THE INTERNATIONAL TOURIST HOTEL INDUSTRY

This study uses balanced panel data (36 hotels × 11 years), based on operational analysis reports for international tourist hotels, as obtained from the Taiwan Tourism Bureau, for the period of 1995-2006.

Proceeding from the prior studies and theoretical background on the SCP model of the hotel sector, this paper treats three endogenous hotel variables, market share, advertising, and profitability jointly determined.

$$MS = f(AD, PF, X_1)$$
$$AD = f(MS, PF.X_2)$$
$$PF = f(MS, AD, X_3)$$

Where MS denotes market share, AD denotes firm advertising, and PF denotes firm profitability. X_1, X_2, and X_3 are vectors of exogenous variables.

A simultaneous-equation system (3-stage least square) is used to model the above relationship, because ordinary least squares (OLS) estimation of system equations will generate biased and inconsistent estimators due to correlation between independent variables and disturbance term of equations.

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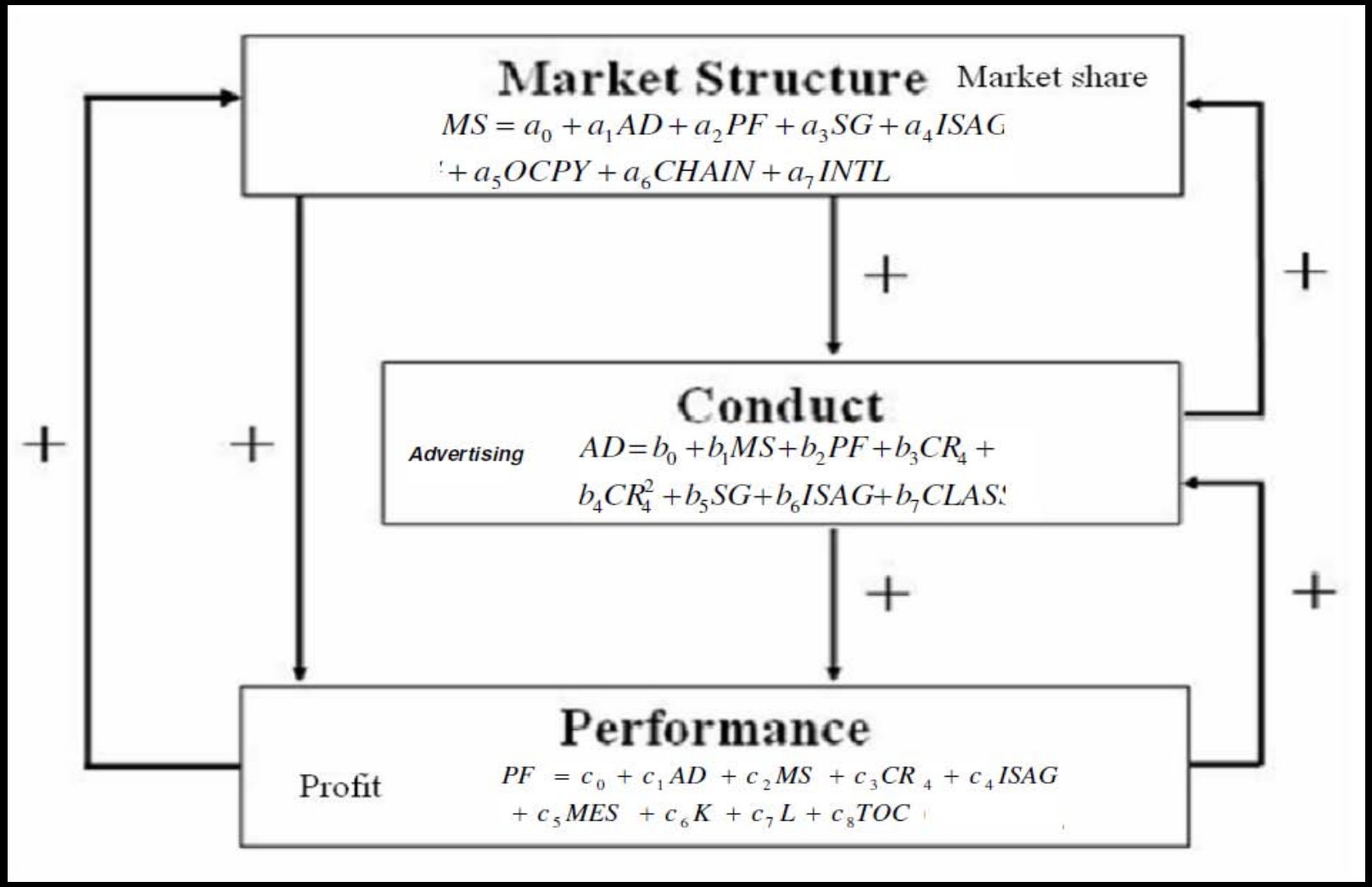

SCP – Empirical Example 1
Tung, Lin and Wang (2010)

$$MS = f(AD, PF, X_1)$$
$$AD = f(MS, PF.X_2)$$
$$PF = f(MS, AD, X_3)$$

$$MS = a_0 + a_1 AD + a_2 PF + a_3 SG + a_4 ISAC + a_5 OCPY + a_6 CHAIN + a_7 INTL$$

$$PF = c_0 + c_1 AD + c_2 MS + c_3 CR_4 + c_4 ISAG + c_5 MES + c_6 K + c_7 L + c_8 TOC$$

$$AD = b_0 + b_1 MS + b_2 PF + b_3 CR_4 + b_4 CR_4^2 + b_5 SG + b_6 ISAG + b_7 CLAS$$

Variables	Definition and measurement
MS (market share)	The percentage of total revenue in the hotel market, as captured by firm i
AD (advertising intensity)	Advertising expenses divided by revenue
PF (profitability)	Aggregated, before tax, ratio of accounting profits to total revenue , shown as a percentage
SG (sales growth rate)	Firm i changes to sales dividends, as compared with the previous year's total revenue
ISAG (industrial sales growth rate)	Industry i changes in revenue dividends, as compared to the previous year's total revenue
OCPY (average occupation rate)	Actual daily revenue divided by the total number of available room
CHAIN (local chain)	A dummy variable, which assumes a value of 1 if the hotel is a member of local chain, and 0 otherwise
INTL (international brand)	A dummy variable, which assumes a value of 1 if the hotel is a member of an international chain, and 0 otherwise
CR_4 (concentration rate)	The sum of the market share of hotels ranked within the top four firms
CLASS (class of hotels)	Hotel class
MES (the minimum efficiency scale)	The average revenue of those firms whose sum is over 50% of the total industrial revenue
K (capital intensity)	Firm i total assets over total revenue in each year
L (labor intensity)	Firm i number of employees over total revenue in each year
TOC (total operating costs)	Total cost

SCP – Empirical Example 1
Tung, Lin and Wang (2010)

Variables	MS	AD	PF
Constant	-0.002 (0.007)	-0.003 (0.012)	-0.082 (0.131)
AD	-0.222* (0.130)		1.690 (1.619)
MS		0.098* (0.059)	1.012* (0.551)
PF	0.002 (0.006)	0.005 (0.007)	
CR_4		1.438 (7.041)	-7.803 (11.359)
CR_4^2		-3.469 (13.167)	
SG	-0.004 (0.012)	-0.001 (0.014)	
ISAG	0.285*** (0.109)	0.161 (0.140)	-1.081 (1.806)
MES			0.459 (0.304)
K			-0.068*** (0.006)
L			-0.463 (0.330)
TOC			-0.263*** (0.464)
OCPY	-0.004 (0.070)		
CHAIN	-0.046 (0.046)		
INTL	1.241*** (0.088)		
CLASS		0.300*** (0.047)	
R2	0.291	0.121	0.316
Hausman test	25.48***	8.26***	0.66
Wooldridge test	0.672	0.151	1.373
Groupwise heteroscedasticity test	140.27***	135.88***	175.36***

Note: a. *, ** and *** denote statistical significance at 10%, 5%, and 1% level of significance, respectively. b. Standard errors in parenthesis.

PF: the effect of market share is positively significant on hotel profit. Higher market shares assist in creating more profit.

AD: advertising does not affect hotel profits but the directions of coefficients were as expected. Most consumers prefer the well-known hotels. Less celebrated hotels do not benefit from their advertising.

Minimum efficiency scale does not exert significant effect on the profitability that could be the low concentration structure of the hotel market in Taiwan.

SCP – Empirical Example 1
Tung, Lin and Wang (2010)

This paper identifies two-way causes and effects that exist between market structure and their strategic behaviors. It identifies a positive response of market share to advertising, BUT a negative effect of advertising to market share.

A hotel with higher market shares is able to sustain heavy advertising intensity. However, any hotel that engages in high advertising costs may create unexpected market share advantages due to the specificities from monopolistic market in Taiwan. This implies that policymakers who perceive optimal advertising expenditures may avoid possible deadweight effects.

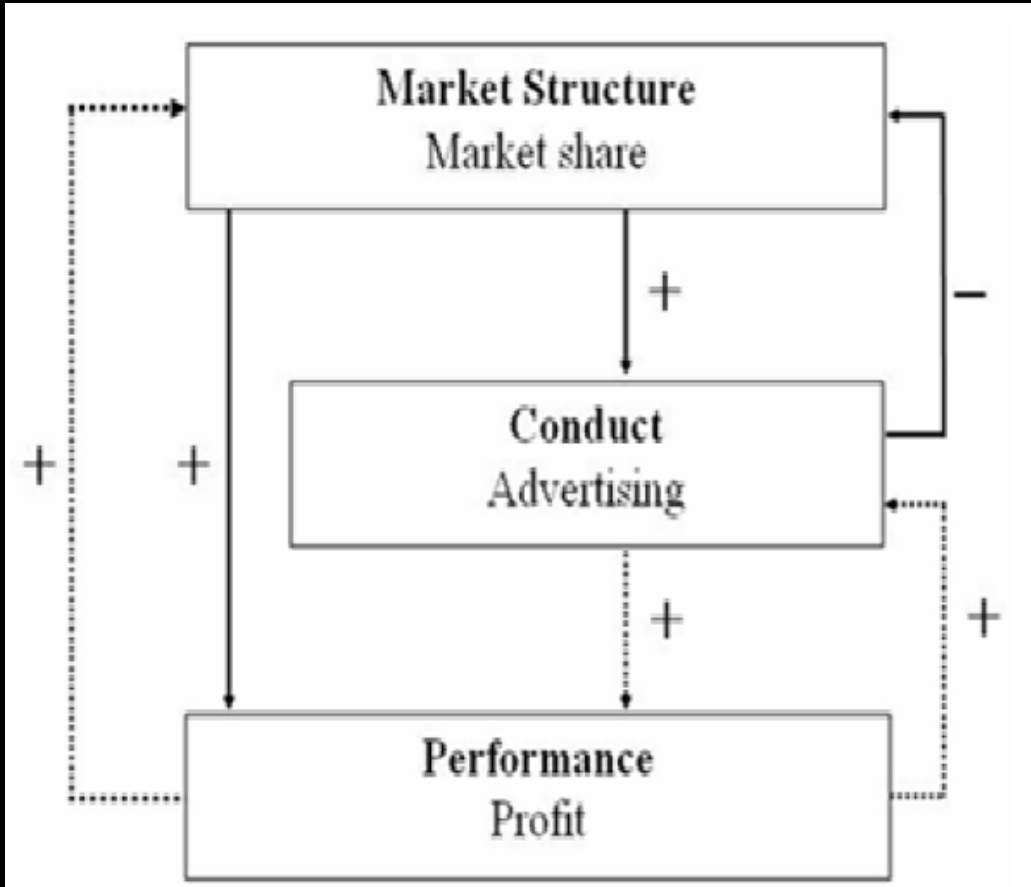

Figure 3. The empirical results of SCP model of hotels. Note: Significant effects (solid lines) and insignificant effects (dash line).

Some Methodological Concerns

Defining the right variables

Aggregate vs disaggregate analysis.

e.g. classify manufacturing firms into 4-digit industries.

Data availability (Proxy?) & method of estimation.

Some Methodological Concerns

Pool / Panel Series

- If N > T, dynamic panel GMM is preferable.
- If T > N, panel unit root and panel cointegration tests are preferable.
- Causality test can be conducted within both frameworks.

Time Series

- Standard unit root and cointegration tests.
- Vector error correction modeling and causal effects to be conducted to capture the dynamic path of S-C-P.
- If exogenous variables present, structural VARX and VECMX to be conducted.

Thank You

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