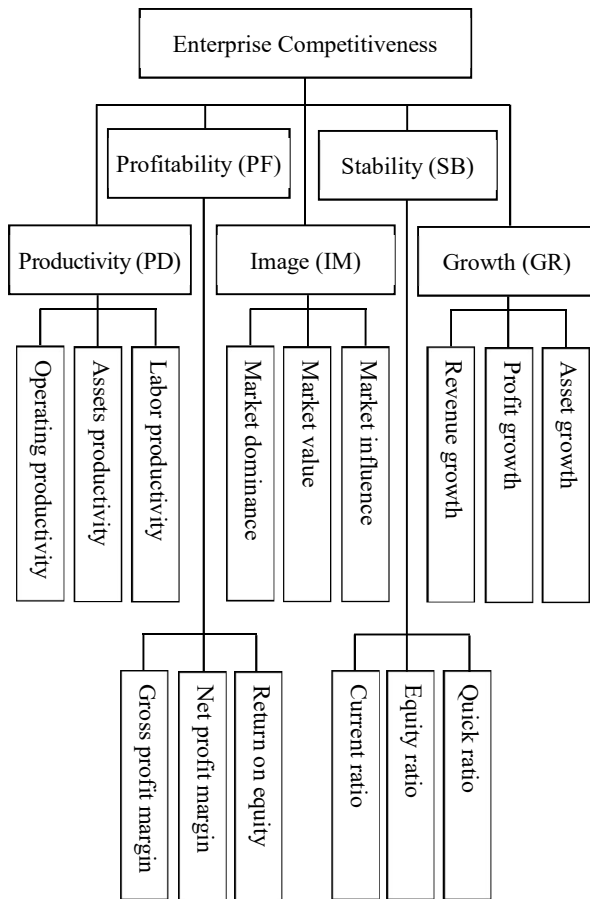


Measuring the Enterprise Competitiveness of Taiwanese Listed Companies: A Compromise Solution Approach

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I. Structure



II. Syntheses

1. The scores of the indicators under each pillar are averaged to form the pillar score.
2. The five pillar scores are synthesized using two types of weight to form the enterprise competitiveness index (ECI).

III. Weight

1. A priori weight: solicited from experts.
2. A posteriori weight: calculated via compromise programming.

IV. Compromise Programming

1. Ideal score of Company i , EC_i^*

$$EC_i^* = \text{Max } w_{11}PD_i + w_{12}PF_i + w_{13}IM_i + w_{14}SB_i + w_{15}GR_i$$

$$\text{s.t. } \sum_{j=1}^5 w_{ij} = 1$$

$$L_j \leq w_{ij} \leq U_j, \quad j=1, 2, 3, 4, 5$$

2. Compromise weight, w_j

$$\text{Min } \sum_{i=1}^n (EC_i^* - EC_i)^2$$

$$\text{s.t. } EC_i^* = w_1PD_i + w_2PF_i + w_3IM_i + w_4SB_i + w_5GR_i$$

$$\sum_{j=1}^5 w_j = 1,$$

$$L_j \leq w_j \leq U_j, \quad j=1, 2, 3, 4, 5$$

V. The Taiwan Case

1. 1800 listed companies in 2024
2. A priori weight:
(0.188, 0.252, 0.272, 0.132, 0.156)
3. A posteriori weight:
(0.160, 0.150, 0.429, 0.171, 0.090)
4. Combined weight:
(0.174, 0.201, 0.351, 0.151, 0.123)
5. Top 10 companies

	Company	Sector	ECI
1	Taiwan Semiconductor Manu. Co. (TSMC)	Semiconductor	9.8641
2	Hon Hai Precision	Electronics	9.7037
3	Mediateck	Semiconductor	9.0184
4	Formosa Petrochemical	Oil, electricity, gas	8.9685
5	Delta Electronics	Electronic components	7.6492
6	Quanta Computer	Computer & peripheral	7.5776
7	ASE Technology Holding	Semiconductor	6.7938
8	Chunghwa Telecom	Telecom & networking	6.7921
9	Uni-President Enterprise	Food	6.3923
10	Cathay Financial Holding	Finance	5.9266