

O.R. Applications

Measuring the national competitiveness of Southeast Asian countries

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Abstract

National competitiveness is a measure of the relative ability of a nation to create and maintain an environment in which enterprises can compete so that the level of prosperity can be improved. This paper proposes a methodology for measuring the national competitiveness and uses the 10 Southeast Asian countries for illustration. The basic idea is to deconstruct the complicated concept of national competitiveness to measurable criteria. The observations (data) on the criteria are then aggregated according to their importance to obtain an index of national competitiveness. For data collected from questionnaire surveys, a calibration technique has been devised to alleviate bias due to personal prejudice. In data aggregation, the importance is expressed by both *a priori* weights and *a posteriori* weights. These two types of weights consistently show that Singapore, Malaysia, and Thailand have the highest national competitiveness, while Myanmar, Cambodia, and Laos are the least competitive countries. The performance of each country in every criteria measured also provides directions for these countries to make improvements and for investors to allocate resources.

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1. Introduction

In an increasingly open and integrated world economy, competitiveness has become a central pre-occupation of both advanced and developing countries (Porter, 1990). Interestingly, there seems to be no agreed definition of national competitiveness (Krugman, 1996). Scholars of different disciplines

usually look at the problem from different points of view (Buckley et al., 1988). Competitiveness at the company level is clear, where companies compete for markets, and it is measured by looking at market shares or profitability. Competitiveness at the country level has been assumed to be similar. Unfortunately, market shares fail to give insights into countries' balance of trade and economic strength through their failure to consider imports (Krugman and Hatsopoulos, 1987). Moreover, market shares ignore sales arising from foreign

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affiliates and foreign licensed sales, since only exports are considered. Regarding profitability, the study of [Blaine \(1993\)](#) on Japanese and American firms in the 1980s indicates that highly profitable firms do not necessarily lead to highly competitive industries or countries, and the opposite is also true. Many American firms have remained extremely profitable despite the declining strength of both their industries and the US economy as a whole; conversely, most Japanese firms have remained relatively unprofitable despite the growing competitiveness of the Japanese economy. For these reasons, competitiveness at the country level cannot be measured the same way as that at the company level.

How then do we define competitiveness at the country level? The [OECD's \(1996\)](#) definition is “the degree to which a country can, under free and fair market conditions, produce goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real income of its people over the longer term.” [Scott and Lodge \(1985\)](#) refer to national competitiveness as “a country's ability to create, produce, distribute, and/or service products in international trade while earning rising returns on its resources.” The Institute for Management Development ([IMD, 2003](#)) defines competitiveness of nations as “how nations create and maintain an environment which sustains the competitiveness of its enterprises.” The definition from the World Economic Forum ([WEF, 2003](#)) is “the set of institutions and economic policies supportive of high rates of economic growth in the medium term.” While these definitions are not exactly the same, they share a common spirit, that is, creation of an environment conducive to improving the prosperity of a country. It is this broad definition that has attracted considerable attention from policy makers, enterprises, and the public, and rankings based on the spirit of this definition regularly appear in policy statements and the media.

Many indicators, models, and indices have been proposed to measure national competitiveness. Indicators such as the relative price or cost indices published by the IMF and the OECD show various levels of countries' competitiveness. [Boltho \(1996\)](#) believes the real exchange rate is a short-term measure of competitiveness and trend productivity growth a long-term measure. The most appropriate indicator of competitiveness, according to [Porter \(1990\)](#), would be total productivity. [Buckley et al. \(1988\)](#) study a wide variety of publications on com-

petitiveness and conclude that single measures of competitiveness do not capture all the elements of the concept. Useful measures should encompass competitive performance, its sustainability through the generation of competitive potential, and the management of the competitive process. [Fagerberg \(1996\)](#) also finds that most analysts use a broader definition of competitiveness and focus on structural factors affecting medium to long-term economic performance: productivity, innovation, skills, and so on.

[Porter \(1990\)](#) develops the diamond model through studying competitive performance among 10 countries. The model is based on four country-specific determinants: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry, and two external variables: chance and government. This model has been widely applied in studying the competitiveness of different countries ([Bellak and Weiss, 1993](#); [Hodgetts, 1993](#)). However, it is flawed in some aspects. [Dunning \(1993\)](#) argues that this model underestimates the significance of globalization and markets for the competitive advantage of nations. [Grant \(1991\)](#) finds that the breadth and relevance of Porter's analysis have been achieved at the expenses of precision and determinancy – its empirical data are chosen selectively and interpreted subjectively. In studying the Austrian economy, [Bellak and Weiss \(1993\)](#) point out that Porter's framework of analysis on competitiveness has shortcomings for small, open economies.

In addition to Porter's diamond model, there are two leading indices that measure national competitiveness. One is prepared by the IMD and appears in the *World Competitiveness Yearbook*, and the other is contained in the *Global Competitiveness Report* of the WEF. The former uses approximately 300 criteria to rank 60 countries, while the latter uses approximately 170 variables to rank 117 countries. Note that the number of criteria for the two indices differs from year to year and the number of countries being ranked has been increasing over the years. Both indices rely on evidence-based *hard* data and opinion-based *soft* data. The major difference between these two indices is that the WEF places greater reliance on soft data (around two-thirds), while for the IMD this is reversed. [Lall \(2001\)](#) points out that the *Global Competitiveness Report* has deficiencies at several levels. It suffers from several analytical, methodological, and quantitative weaknesses. For example, some of its implicit

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