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Concentration in the Greek private hospital sector: A descriptive analysis☆,☆☆

Zoe Boutsioli[a,b,*]

[a] *University of Kent, UK*
[b] *14 Solomou Street, 10683 Athens, Greece*

Abstract

Over the last 20 years, governments all around the world have attempted to boost the role of market and competition in health care industries in order to increase efficiency and reduce costs. The increased competition and the significant implications on costs and prices of health care services resulted in health care industries being transformed. Large firms are merging and acquiring other firms. If this trend continues, few firms will dominate the health care markets. In this study, I use the simple concentration ratio (CR) for the largest 4, 8 and 20 companies to measure the concentration of Greek private hospitals during the period 1997–2004. Also, the Gini coefficient for inequality is used. For the two different categories of hospitals used (a) general and neuropsychiatric and (b) obstetric/gynaecological it is evident that the top four firms of the first category accounted for 43% of sales in 1997, and 52% in 2004, while the four largest firms of the second category accounted for almost 83% in 1997, and 81% in 2004. Also, the Gini coefficient increases over the 8-year period examined from 0.69 in 1997 to 0.82 in 2004. It explains that the market of the private health care services becomes less equal in the sense that fewer private hospitals and clinics hold more and more of the share of the total sales. From a cross-industry analysis it is clear that the private hospital sector has the highest concentration rate. Finally, it appears that the market structure of the private hospitals in Greece resembles more closely to an oligopoly rather than a monopolistic competition, since very few firms dominate the market.

Keywords: Private hospital sector; Market concentration; Market share; Greece

1. Introduction

The health care industry is analysed within the spectrum of the standard microeconomic theory. In the relevant literature, it can be characterized as an imperfectly competitive market, and it is considered as monopolistic competitive. One method of measuring the degree of competition is to use the concentration rate, i.e. the dominance of relative few firms.

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* Correspondence address: 14 Solomou Street, 10683 Athens, Greece. Tel.: +30 6972093388; fax: +30 2103847734.
E-mail address: zb5@kent.ac.uk.

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The purpose of this paper is to measure the concentration of Greek private hospitals[1] using the simple concentration ratio (CR) for the largest 4, 8 and 20 companies. Also, the Gini coefficient for inequality is used. Some developments and trends of the Greek hospital market structure are also provided. This study will offer some information and data about the concentration of the Greek private hospital sector, which may be of interest to policy makers.

Including this introduction, this paper is organized into six sections. Section 2 presents measurements of concentration. Section 3 outlines the characteristics of health care industry. Section 4 briefly presents the Greek health care sector. Section 5 provides measurements of the concentration ratios of the Greek private hospitals, and the Gini coefficient results. Section 6 discusses the results and concludes.

2. The concentration of the firms in an industry and the measurement of inequality

The market concentration is an important aspect of industrial structure. Concentration measures the degree of firms' domination, using market share data. Hence, by looking at the concentration in a market, we can assess whether the firms have market power. Concentration is affected by two factors:

- The number of firms in the market.
- The relative size of the firms.

Considering the extreme case of only one firm, i.e. a monopolist, it would have the highest level of concentration (100%). On the other hand, a perfectly competitive market would have the lowest level of concentration, determined by the large number of firms. The market share (μ_i) of each firm is given by

$$\mu_i = \frac{q_i}{\sum q_i}$$

where q_i is the quantity produced by the ith firm.

Generally, concentration is a function of the number of firms and the degree of inequality in their market share. For a given number of firms, concentration increases with inequality. If all firms in a market have the same market share, concentration decreases as the number of firms rises.

There are two commonly used measures of market concentration: the concentration ratio (CR), and the Herfindahl-Hirschman index (HHI).

2.1. Concentration ratio

The concentration ratio (CR) is a measure, which reflects both the number of firms and the inequality in their market shares. CR is a non-weighted sum of the market shares of the (m) largest firms in the market. The four-firm concentration ratio CR_4 measures the percentage of industry sales accounted for by the four largest firms. Similarly, there is a CR_8 and a CR_{20}.

- $\mathrm{CR}_m = \sum_{i=1}^{m} \mu_i, \quad \frac{m}{n} \leq \mathrm{CR}_m \leq 1$

2.2. Herfindahl–Hirschman

The HHI is a measure of concentration that also reflects the number of firms and the inequality of their market shares. The HHI is a weighted sum of the market shares of all firms in the market.

- $H = \sum_{i=1}^{n} (\mu_i)^2, \quad \frac{1}{n} \leq H \leq 1$

where m is the number of the (x) largest firms, n the total number of firms and μ_i is the market share of the ith firm.

These two measures of market concentration are useful tools to examine the trends in market structure as well as doing cross-industry analysis. For example, they can be used over time to examine whether an industry has become more concentrated and presumably less competitive or they can be used to compare, for a given period of time, whether some industries are more concentrated than the others, which might result in government action to reduce monopolistic practices in certain markets.

Another measure for the magnitude of inequalities in health is the Gini coefficient. The Gini coefficient, resulting from the Lorenz curve, ranges from 0 to 1. The Lorenz curve comes from economic theory, and it is usually used to describe distributions of wealth or income [1]. The Gini coefficient is commonly used

[1] Private hospitals include the general, neuropsychiatric and obstetric/gynaecological hospitals.