Chapter 8

EVALUATION OF HEALTH CARE SYSTEMS OF CIS COUNTRIES BY PANEL DATA ANALYSIS METHOD

Fuad SALAMOV[1]

INTRODUCTION

Health expenditures, which are indicative of the country's welfare level, have also increased significantly in the Commonwealth of Independent States (CIS) (Azerbaijan, Belarus, Armenia, Kazakhstan, Kyrgyzstan, Moldiva, Uzbekistan, Russian Federation, Tajikistan and Ukraine) as well as all over the world due to the aging of the population and increasing public demand. As a percentage of GDP, health expenditures in 2015 did not exceed 5% in any of these countries and they were on average around 2.89%. The World Health Organization points out that a country's health spending share should be at least 5% of that country's GDP and that developing or underdeveloped countries make it a target (Dastan and Chetinkaya, 2015). Recently, it is seen that there is an increasing tendency in the health system to increase resources and reallocate health expenditures in the CIS countries.

While the average life expectancy at birth in the CIS countries in 2010 was 69.44%, it was seen that it increased to 71.35 in 2015. While trying to minimize the costs of health services, countries make reforms and policies to improve access and quality of health care services for their citizens, and to use resources more effectively and efficiently. For this reason, the average number of hospitals in 2015 has been 1127,8 while it was 1324,6 in 2010 . At the same time period, it is seen that there is a change in the employment of health employees depending on the reforms (CIS Statistics).

In this article, the panel data model was applied to measure and evaluate the importance of the factors that determine the criteria for health care outcomes widely accepted in literature. In this context, by using the fixed effects and random effects method as an independent variable, which are one of the panel data analysis methods; infant mortality rate under one year of age, infant mortality rate under four year of age, 5, vaccination rate of children under one year of age against hepatitis B virus, health expenditures (% GDP) and life expectancy at

---
[1]   Assistant Professor Dr. Mus Alparslan University, School of Health, Department of Health Management, f.salamov@alparslan.edu.tr

In line with all these results, increasing the level of employment in the health sector, which is seen as one of the macroeconomic and socio-economic targets in the countries covered by the analysis, can make a significant contribution to the reduction of infant and child mortality rates, which is also an indicator of the economic and social development index in countries. The results of the study supported the theoretical and empirical literature.

There are also some constraints in this study, which was conducted by the CIS health sector. The first of these is related to the universe of research. Although there is a statistical institution for the CIS countries, the difficulty of obtaining the necessary data from this institution. Therefore, the universe of the research was limited to the years 2010-2015. Secondly, the political and economic relations between the countries (such as Russia and Ukraine, Azerbaijan and Armenia) included in the scope of the analysis and the existence of hot conflicts among them and the different social policies of the countries have affected the results. It is thought that these constraints can be solved in time and better relations between countries will be established and more comprehensive research can be done in the future.

REFERENCES

1. Akinci, G. Y., Akinci, M. and Yilmaz O. (2013). "The Relationship Between Economic Globalization and Financial Freedom: A Panel Data Analysis", *Journal of Academic Researches and Studies*, 5(9), 80-99.
2. Bakhtin, K. (2009). *The Measurement and the Comparison of Technical Efficiency of Russian Manufacturing and Trade Companies*, Moscow: New Economic School.
3. Baltagi, B. H. (2005). *Econometric Analysis of Panel Data*, 3rd Edition, New York: John Wiley.
4. CIS, "Statistics", http://www.cisstat.com/ 26 May 2018
5. Dastan, I. and Cetinkaya, V. (2015). "Comparing Health Systems, Health Expenditures and Health Indicators in OECD Countries and Turkey", *Journal of Social Security*, 5 (1), 104-134.
6. Erdem, E. and Tugcu, C. T. (2012). "Economic Freedom and Employment in Azerbaijan, Kazakhstan, Kyrgyzstan and Turkey: A Panel Data Analysis", *Conference Paper, International Conference on Euroasian Economies*, Session 3B, 207-211.
7. Hayaloglu, P. and Bal, H. Ç. (2015). "The Relationship between Health Expenditures and Economic Growth in Upper Middle-Income Countries", *Journal of Business and Economics Studies*, 3(2) 35-44.
8. Hsiao, C. (2003). *Analysis of Panel Data,* Cambridge: Cambridge University Press.
9. Klevmarken, N. A. (1989). "Panel studies: What can we learn from them? Introduction", *European Economic Review*, 33, 523–529.
10. Kutlar, A. (2012). *Ekonometriye Giriş*, 3rd Edition, Ankara: Nobel.
11. Mohan, R. and Mirmirani, S. (2017-2018). "An Assessment of OECD Health Care System Using Panel Data Analysis", *Southwest Business and Economics Journal*, 16, 21-35.

12. Pazarlıoğlu, M.V. and Gürler, Ö. K. (2007). "Telecommunications Infrastructure and Economic Growth: Panel Data Approach". *Finans Politik & Ekonomik Yorumlar*, 44(508), 35-43.

13. Sadoxina, E. (2003), "CIS Members National Production Efficiency Estimation, Macroeconomic Aspects, 1991-2001 years", CyberLeninka: https://cyberleninka.ru/article/n/makroekonomicheskaya-otsenka-effektivnosti-natsionalnogo-proizvodst-va-stran-sng-v-1991-2001-gg 06 August 2018.

14. Semionova, E. and Mitryuk, M. (2017). "Stochastic Frontier Analysis as the Evaluation Method of the Rural Development Level of Peasant Farms in the Republic of Moldova", *Studia Universitatis Moldaviae*, 7(107), 127-135.

15. The World Medical Association (2017). "WMA Statement on Physicians and Public Health", https://www.wma.net/policies-post/wma-statement-on-physicians-and-public-health/ 30 August 2018

16. Yildiz, B. and Yildiz, G. (2018). "The Effect of Health Expenditures on Economic Growth: The Case of Europe and Central Asia Countries", *Journal of Finance*, 174, 203-218.

17. WHO, "World Health Statistics", www.who.int/gho/publications/world_health_statistics 26 May 2018.