THE EFFECT OF HEALTH EXPENDITURES ON ECONOMIC GROWTH IN OECD ECONOMIES

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Extended Abstract

Introduction

The two main factors in the formation of the human capital in economies are education and health expenditures. While educational expenditures provide the development of the individuals' knowledge, skills and abilities; health expenditures not only make it easier for individuals to participate in production more efficiently and effectively but also increase their motivation.

Intrinsic growth models, based on Romer (1986) and Lucas (1988) and later developed by other economists, emphasize the importance of human capital, as well. Becker, Murphy and Tamara, who took the population growth and human capital accumulation from the intrinsic growth models as a decision variable, emphasize the importance of human capital on the economic growth in their work in 1990.

Methodology

In this study, the impact of health expenditures per capita on GDP is tested empirically with the data between 2010-2014 from 34 OECD countries including Turkey. In the study, while, as a dependent variable, countries' total GDP values indexed to the US dollar in 2010 were used; as a descriptive variable, the health expenditures per capita indexed to the US dollar in 2011 were used in the countries mentioned. Relations between variables were examined by cointegration and causality tests and furthermore, Fully Modified OLS (FMOLS), which was developed by Pedroni (2000 and 2001) and is suitable for panel data analysis, was used.

The relationship between the variables in the study was tested by panel data analysis. All the analyzes made in this framework took place in four stages. First, panel unit root tests were implemented with the aim of testing whether the series are stationary. In the second phase, the existence of cointegration among the variables used in the study was tested. In the third phase, estimates of cointegration coefficients in the long and short term were made. In the last stage, the existence of causality relation among variables in the long and short term was tested.

Results

According to the results of panel unit root tests; the null hypothesis for GDP series is accepted for all the tests. In the HEXP series, the null hypothesis is rejected only as a serial unit root in the LLC unit root test and the alternative hypothesis which claims that the series is stationary is accepted. However, the null hypothesis was accepted for all other tests for the HEXP series. As a result, it was decided that all variables were not stable in the level values and it was observed that they were not stationary when the first differences of the series were taken. For both GDP and HEXP series, when the first differences were taken in all models, the null hypothesis was rejected at the 1% significance level in the unit root tests and all the series became stationary.
When we analyze the long-term relationship between GDP and per capita health expenditures, which is the first model that we take GDP as a dependent variable, the statistics of all tests except panel-v and group-rho test are significant at 1% level when we look at the results of Pedroni cointegration analysis. According to this, five of the tests that constitute the Pedroni Cointegration test show significant results at 1% level, indicating cointegration between variables. The statistical values of the Kao Cointegration test were significant at the 5% level. The result of this analysis shows the cointegration between variables. In the Johansen Cointegration test, both no real root and at least one real root test gave significant results at 1% level. As a result, null hypothesis (no cointegration between variables) was rejected in these three models. On the other hand, the alternative hypothesis (cointegration between the series) is accepted.

In the second model in which we analyzed the long-term relationship between health expenditures per capita and GDP, and which health expenditures per capita was taken as a dependent variable, the statistics of the other six tests except Panel-v test gave significant results at 1% and 5% levels when the results of the Pedroni Cointegration analysis are examined. The statistical values of the Kao Cointegration test were significant at the 5% level. The result of this analysis is an indication of the cointegration between variables. In the Johansen Cointegration test, both no real root and at least one real root test gave significant results at 1% level. As a result, null hypothesis (no cointegration between variables) was rejected in these three models. On the other hand, the alternative hypothesis (cointegration between the series) is accepted.

After a long-term relationship between GDP and per capita health expenditures and per capita health expenditures and GDP has been established, there is a linear relationship between GDP and per capita health expenditures with the significance of 1% when the panel FMOLS results, which provide estimates of the long-term coefficients without deviation among variables, are examined. Accordingly, the increase in per capita health expenditures in the long term increases GDP. In the sample examined, when the long-term HEXP per capita for OECD countries increases by 1%, GDP increases by 1.47%.

Finally, a Panel VECM analysis was conducted to determine the direction of the short and long-term causality relationship between GDP and per capita health expenditures. According to the results of this analysis, it was observed that there are bilateral relations between the variables in both long and short term.

**Conclusion and Discussion**

As a result, since these analyzes reveal the existence of a meaningful relationship between economic growth and health expenditures, it is estimated that an increase of the investments of the private sector and the public sector in health services will increase the quality of the human capital. For this reason, it is necessary to increase the health expenditures more, especially for the developing economies, such as Turkey. It is also important for the Turkish economy to increase the health expenditures to the average of OECD countries because Turkey has one of the lowest economic rates among OECD countries. In this regard, it is thought that the increasing human capital will accelerate the economic growth and development by increasing the production quality and productivity.