The Long-Term Impact of Health on GDP in 19 OECD Countries

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ABSTRACT

Health is assumed to influence the economy through many channels. It reduces infant mortality and increases life expectancy and adult survival rates. Health level and life expectancy affects long-term savings decisions of individuals. This study examines the relationship between health indicators and economic growth in 19 OECD countries during the period 1970-2009 within a panel data analysis. The authors employ three different measures of health. Results show that an increase in health expenditures and a decrease in infant mortality positively affect GDP in compatible with the theoretical assumptions. However, life expectancy is detected to affect GDP negatively in contrast with the theoretical expectations. In conclusion, health expenditures and services concluded to influence GDP by improving human capital. Furthermore, the authors make suggestions about how economies can remove the burden of aging population.

Keywords: GDP, Health Expenditures, Human Capital, Life Expectancy, OECD Countries

1. INTRODUCTION

Recent theoretical debates, which are about economic growth literature, intensify around the concept of ‘human capital’. Indeed, Adam Smith, Marshall and Mill are accepted as the first economists that mentioned about human capital. However, like Bowman (1990) says the modern human capital literature is less impressed by the opinions of these three authors (Kibritcioğlu, 1998). The related theory is based on the pioneer studies of Becker (1962, 1964) and Schultz (1961, 1962) who are the economists emphasized the importance investment in human capital (Kibritcioğlu, 1998). Schultz (1962) states that people can improve their capabilities by investing in themselves. Also, these investments are a strong explanatory of differences in income, wages and salaries. He constructs a theory by propounding three matters: (i) according to the assumption that the ratio of all capital to income is constant and the stock of physical capital has been declining, another compound of capital, which is human capital, has been rising relatively to time. Thus, if the ratio of all capital to income remains constant, the unexplained economic growth can be explained by the rise in the stock of human capital. (ii) the structure of wages and salaries is determined by some factors (schooling, health, on the job training, searching for information about job opportunities and investment in migration) including

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investment in people. (iii) increase in the ratio of human capital to all capital is more effective on equalizing income and providing a fair income distribution than other factors such as progressive taxation, income transfers. Becker (1964) elaborately explains four resources of investment in human capital. These are, (i) on the job training, (ii) schooling, (iii) other knowledge and (iv) productive wage increases. Lucas (1988) emphasizes the importance of ‘human capital accumulation’ and ‘learning by doing’ concepts (Arrow, 1962) was the first economist who modeled the concept of ‘learning by doing’). Mankiw, Romer, and Weil (1992) set up a model, which is known as ‘human capital extended Solow model’, by incorporating human capital into capital concept. The authors claim that their model is able to explain 80% of income differences among the countries. Their empirical findings support the Solow model, which states that per capita output is equal to the rate of technological progress at the steady state level (Jones, 1998).

As some of which are mentioned above, human capital involves several factors such as education, health, brain drain, quantity of people in dynamic population (Yumuşak & Yıldırım, 2009). The two of these factors of human capital are standing out: Health and education. However, the majority of empirical studies focus on the effect of education on economic growth. Only in the last two decades, empirical studies have started to intensify on analyzing the influence of health on growth (Brempong & Wilson, 2004). We prefer to focus on the impact of health on economic growth, because of this reason.

Health is assumed to influence the economy through many channels. It reduces infant mortality and increase life expectancy and adult survival rates. Health level and life expectancy affects long-term savings decisions of individuals. Improvements in health services indicate its impact on students’ cognitive and learning ability and also reduce absenteeism, so lead to a better education. Early life nutrition affects people’s mental and immunosuppressive capability and it increase individuals’ life, education and economic standards.

In this study, we investigate health and economic growth relationship including 19 OECD countries’ data over the period 1970-2009. Our dependent variable is GDP and explanatory variables are infant mortality rates, life expectancy at birth and health expenditures. We use the data of these countries: Austria, Australia, Belgium, Canada, Denmark, Finland, Germany, Iceland, Ireland, Japan, United Kingdom, Netherlands, New Zealand, Norway, Portugal, Spain, Switzerland, Turkey and USA. From our point of view, the findings of our study are reliable because of the fact that we make a long-term analysis. Furthermore, panel data approach is a useful method to overcome multicollinearity problem. Another advantageous feature of our study is that we supply the data from OECD Health Data and because of the fact that the majority of the countries we choose are the developed countries, so the possibility of the data to be trustable is very high.

The next section of the study presents information about health and economic growth relationship. Section 3 presents a literature review. Section 4 makes an econometric analysis by using panel data approach. Section 5 interprets empirical results of the study. Section 6 makes a conclusion.

2. HEALTH AND ECONOMIC GROWTH

As we mentioned in the previous section, growth-related studies focus on education level of countries more than health when they attempt to explain the resources of economic growth. However, in the last two decades, health takes part in the related literature more often compared with previous decades.

Kar and Taban (2004) explain four different reasons, which indicate health level of country. We also know that these reasons indirectly affect economic growth according to the results of many empirical studies. These are; infant and child mortality rates, average lifetime, in-
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