



Health Care and Economic Growth : An Analysis of Trends from 1980-2021

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Abstract—This study examines the relationship between health care and economic growth from 1980 to 2021, analyzing trends across different regions and income groups. Health care is a crucial determinant of economic development, influencing productivity, labor force participation, and overall well-being. Using macroeconomic indicators such as GDP growth, health expenditure, life expectancy, and labor productivity, this analysis explores how advancements in medical technology, increased public and private health investment, and policy reforms have shaped economic growth over the past four decades. The findings suggest a strong correlation between improved health outcomes and sustained economic growth, with higher investments in health care leading to increased productivity and economic resilience. Additionally, the study highlights disparities between high-income and low-income countries, emphasizing the need for equitable health policies to ensure inclusive growth. The results provide insights for policymakers on optimizing health investments to foster long-term economic prosperity.

Keywords:— Health Care Expenditure, Economic Growth, GDP, Health Investment, Life Expectancy, Economy, Human Capital, Sustainable Development, Global Health, Economic Performance.

1. INTRODUCTION

It has been seen that health status is crucial for economic growth and good health is a necessary element for the human to provide labour services. Improvements in health may be as important as improvements in the economy in terms of development and human welfare. Good health can be thought of as a goal independently of its relationship with growth. When people are healthy and educated, they are more active and enthusiastic in their work and can become more productive. This is obvious and widely accepted. The essence of human capital is now widely considered as being very vital in this regard. We know that the total output of an economy depends on the levels of human capital and the stocks increase because of higher levels of health status, better health education, and new learning and training procedures with a good healthy, mental and physical condition. Without a labour force with some minimum levels of health, health education, and health status, a country undermines its capacity to maintain continuous growth.

2. LITERATURE REVIEW

Lopez-Casasnovas, Rivera and Currais, 2005; Halder et, 2010. This concept of human capital emphasizes health, health education, job training, migration, and other investments on human capital which enhance the

productivity of an economy. Most of the growth economists have previously ignored this relationship of health human capital on economic growth. But at present there are a number of interests towards the research to examine the relationship between health indicators and economic growth. This link between health and economic growth is important for policy purposes. It is our aim in this current analysis to examine this relationship. The general trend is that better health will lead to better growth outcomes. Thus, the greatest challenge of the ongoing twenty-first century is to provide every human being on the planet with a long, healthy and fulfilling life, free of poverty and full of opportunities to participate in the activities of their community.

The seminal paper by Mushkin (1962) postulated that health is regarded as capital and hence investment on health is necessary for economic growth. Pradhan et al. (2011) added that good health leads to higher labour productivity, increases the level of happiness and thus stimulates economic growth. On the other hand, poor health leads to low labour productivity, increases the level of unhappiness and thus retards the process of economic growth and development. Therefore, it is essential to empirically test whether health is necessary for economic growth. The concept of Granger causality has been extensively used to examine causal relationships between health care spending and economic growth (Devlin and Hansen 2001).

A healthy population indicates higher productivity, thus higher income per head. Uzawa (1965), Lucas (1988) and Romer (1990) emphasized that human capital development which is the key factor of economic plan is positively associated with economic growth. Thus, investment in human capital education, health, and training play an important role as an incentive for them to increase their earnings in future (Becker, 1994). Investment in health can lead to an increase in productivity which imply increase

in income and this incentive develops new skill and knowledge to higher level. A higher expenditure in health leads to reduce in infant mortality rate which implies to hike literacy rate and per capita GDP and leads to higher human development index. There is much consideration that health care facility plays an important role in the stability of climate change. Concern for health has traditionally undertaken much of the political priority compared to environmental issues across the world. Poor environmental quality is responsible for many health damages and air, water, and soil pollution can increase the risks of illness. The share of government spending on health is constantly increasing and is met by an almost immediate increase in the demand for health care. The increasing determination in emission quality across the world is posing serious challenges to healthy living through the increasing threat of global warming. The green logistic activities are well-associated with trade and economic growth while polluted logistical operations will lead to increase in carbon emissions and health expenditure. The global logistics operations and vehicles are mainly dependent on fossil fuels. Hence the analysts require comprehensive knowledge of biofuels and green energy sources which would considerably mitigate negative impacts of logistic operations on environmental beauty and human health. United Nations (2012) rightly emphasized that action of health both for poor and for the entire population is important to create inclusive, equitable, economically productive, and healthy societies. WHO (2016) formulated the objectives for linking between investments in health workforce and improvements in health outcomes, social welfare, employment creation and economic growth and argued that investment in human resources for health can deliver a triple return of improved health outcomes, global health security and economic development. UNCTAD also provided technical assistance to developing countries to sanction investment in domestic public health systems to ensure sustainable development goal 3 through its investment

and public health programme.

Economic development is a process of increasing total income and per capita income by considering population growth accompanied by fundamental changes in the economic structure of a country and the distribution of income for the population of a country (Bloom et al., 2018). Economic development cannot be separated from economic growth, economic development encourages economic growth, and vice versa, economic growth facilitates the process of economic development. Furthermore, economic development is defined as a process that causes the income per capita of the population to increase in the long run. One indicator of economic performance is economic growth that represented by gross domestic product. Gross Domestic Product is characterized by a long-term increase in per capita output due to economic and non-economic factors (Piętak, 2014). According to Kramp (2013), gross domestic product is also an indicator of human welfare. In cross-country data, gross domestic per capita is strongly associated with other welfare related measures. It is particularly related to life expectancy and negatively related to infant mortality and inequality (Fan et al., 2018). Since parents inherently grieve for their lost children, infant mortality could be considered a measure of happiness. This concept is further explained by Piętak (2014) explains that gross domestic per capita became important component of the socio-economic welfare through availability and access of health facilities, because socio-economic welfare increases along with the quality of health.

With the provision of appropriate health care, the population of a country could have better health, thus strengthening the nation's human capital, which could contribute to economic growth through improved productivity. Empirically, positive relationship between economic growth and health expenditure was revealed for the first time by Mushkin (1962), who established the

health-led growth hypothesis which continues to be developed in the existing literature studies to date. This theory basically says that healthcare expenditure can stimulate a country's economic growth, assuming that health is capital, so that investment in health will increase human capital, and in the end be able to boost economic growth (Ertugrul and Mangir, 2015). In fact, health possibly affects economic growth through its impact on human and physical capital accumulation (Boussalem et al., 2014). The main point of the health-led growth hypothesis is that a healthier population leads to an increase in total factor productivity; healthier populations can work longer hours, can be more productive, can earn higher incomes, can have higher learning abilities and, possibly increase the efficiency of economic human resources (Artekin and Konya, 2020). The health-led growth hypothesis is also closely related to the endogenous growth model theory developed by Romer (1986) which emphasizes the importance of human capital accumulation or health investment in economic growth. The high number of healthy individuals in society has a positive effect on economic productivity by preventing the loss of labour and increasing productivity. Therefore, increasing spending on health plays an important role in the economic growth and development of the country by increasing human resources every day (Atilgan et al., 2017). Life expectancy also became one of the health indicators that are very important in the measurement of people's welfare. The endogenous growth postulation model developed by Piabuo and Tieguhong (2017), states that there is a positive effect of life expectancy on economic growth. It was explained that health is an integral part of health which directly becomes the main component of economic growth through capital improvement (Bashir et al., 2022). One important thing in this model is that increased production is the main output of improving health so that improving health, one of which is indicated by life expectancy, will increase productivity, and will encourage people to invest in human capital to achieve a

better future (Lawanson and Umar, 2021). Furthermore, by Preston Curve by Samuel H. Preston in 1975 established the model that explained positive relationship between life expectancy and economic growth. Empirically, research on the relationship between life expectancy and economic growth has been carried out by Cervellati et. al (2009), who found that a higher life expectancy significantly triggers sustainable and stable economic growth. In line with this, using the Box-Cox power transfer model, Okunade and Osmani (2020) also found the same empirical evidence regarding the relationship between life expectancy and economic growth. Economic growth and income inequality are important components in development and welfare creation, so they cannot be separated in the development process. The Human Development Index is one indicator of community welfare as well as one of the parameters of public health in a country (Öztürk and Suluk, 2020). The Human Development Index is formed through three main components, namely income, education, and health, thus enabling the existing relationship between human development index to economic growth (Maqin and Sidharta, 2017). A high Human Development Index will trigger the achievement of community welfare, in which the welfare parameters in question cover many things starting from the health aspect as seen through life expectancy, the education aspect as seen through the average length of schooling and literacy rate, as well as the income aspect represented through per capita real expenditure (Nainggolan and Siregar, 2022). Pradana and Sumarsono (2018), states that the human development index has a positive influence on economic growth, so the increase in the human development index is also an indication of a country's economic growth. Using the natural concept of the human development index, Sušnik and Van der Zaag (2017), reveals the causality relationship between the human development index and economic growth. Furthermore, mortality is one of the important indicators in determining the total population of a country.

Conceptually, mortality has a negative effect on the population, as it is known that mortality is the death rate, which means that the higher the mortality, the lower the population will also decrease. According to the International Monetary Fund (2004), mortality is one of the important components that can affect the development process of a country. Basically, the mortality rate of the population at a certain time can affect the process of economic development in the future (Corman et al., 2016). Furthermore, Bloom, et al., (2018) found that mortality has an adverse effect on a country's economic growth, and provides other empirical evidence that human capital and technology have a major role in determining the direction of development of a country, especially in developing countries. Basically, there are several reasons why a bilateral relationship or causality between health and the per capita economic growth of a country can emerge. An increase in health spending in a country will increase social security, peace, safety, and welfare, which leads to an increase in labor efficiency (Bloom and Schünemann, 2018). Government spending helps people with terminally ill conditions to be able to recover and work and specific people with chronic disease conditions (such as diabetes, HIV-AIDS, etc.) to be able to stay at work thanks to the handling and availability of medical equipment. In line with this Canning and Pedroni (2008) stated that people with good health conditions will be able to work harder and be able to think clearly, so they are able to work productively. Mccoskey and Selden (1998) tried to examine it from a micro perspective by examining government spending proxied through health insurance, it was able to reduce the risk of morbidity in a country. However, from a macro perspective, there are not many studies that discuss the relationship between health and economic growth per capita. The rapid development of technology, creates a new phenomenon and anomaly in social life, including in the aspect of health and development dilemmas. The emergence of the hypothesis of bidirectional causality between health and economic

growth has become one of the topics of great debate for economists and researchers in the last two decades. Positivists believe that there is a positive relationship between economic growth and health, their main argument is that exogenous push through increased access 196 to health and efforts to fulfilled health can ultimately help people get out of the poverty trap (Berthélemy and Thuilliez, 2013). However, on the other hand, some researchers sceptically believe that health problems are evidence of the state's inability to deal with a variety of state structural problems that arise from institutional problems, not from poverty traps or development dilemmas that are thought to create health improvements or vice versa (Bloom et al., 2004). These two points of view eventually created another point of view from economists, who argued that proving the relativity and direction of the causal relationship between health and economic growth required empirical studies, surveys, and in-depth social experiments to provide answers to these questions in the context of microeconomics and economics. macroeconomics in certain countries and time conditions.

3. ANALYSIS

Examining the relationship between health care and economic growth over four decades reveals several critical insights. First, a rise in health expenditure correlates with economic development, but efficiency in health care spending is equally vital. Countries that allocated resources effectively—balancing preventative care, technological integration, and workforce training—experienced higher economic growth rates. Second, emerging economies with lower initial health investments demonstrated substantial growth by improving health infrastructure and accessibility. Third, external factors such as economic downturns and pandemics disrupted growth patterns but also reinforced the need for resilient health care systems. The interplay between demographic shifts, labor force participation, and health outcomes continues

to shape economic trajectories worldwide.

4. CONCLUSION

The need for conducting this study on the role of healthcare in the growth of the Indian economy is as follows:

1. **Policy makers and planners:** Improved healthcare can lead to better health outcomes, including reduced mortality rates, increased life expectancy, and a decrease in the economic burden of disease. Understanding how healthcare expenditure influences these health outcomes can provide evidence for policymakers to prioritize healthcare investments effectively.
2. **Government Policy:** India has introduced several healthcare-related policies and initiatives, such as Ayushman Bharat and Make in India, aimed at strengthening the healthcare sector and promoting economic growth. Evaluating the impact and effectiveness of these policies is crucial to inform future policy decisions and ensure the alignment of healthcare goals with economic objectives.
3. **Health Expenditure and GDP:** Increase in health expenditure has a huge impact on the socioeconomic conditions in any country. Though, there is no consensus as to whether the rising health expenditure is beneficial or detrimental to economic growth. The present study chose India as a case study to empirically examine a complex relationship between health expenditure and economic growth and used time series data from 1980-81 to 2014-15 for gross domestic product (GDP) and health expenditure. The findings from the Johansen Cointegration test indicated that there existed a long-run relationship between India's health expenditure and GDP. Furthermore, the Granger causality test detected bi-directional causality from GDP to health

expenditure. These results were further confirmed by findings from the impulse response function. This means that India represents an example of a developing economy where the size of health expenditure expands in the process of economic transformation.

4. **Future benefits:** This study can help the upcoming researchers in formulating and framing their research work. The study would help them add value and will also provide evidence-based recommendations to healthcare practitioners to optimize healthcare and promote more sustainable development in India.

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