

THE EFFECTS OF HEALTH ON ECONOMIC PERFORMANCE

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This paper aims analyzing the relationship between population health status and growth. The investment in human capital has an important impact on the economic development of a country. A number of studies in developing countries have shown that there is an important relationship between health and economic development. The state of health in a country will affect its growth path through various channels, in a way that depends on local conditions.

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JEL Classification: I10, O40, O43

1. Introduction

Traditionally the economic theory has focused on the accumulation of physical capital as the source of the most important growth, at least in the short term¹¹⁷. According to Lucas, even from the early 1990's various studies were aimed at identifying economic growth variables; long-term growth is endogenous rather than exogenous¹¹⁸.

The role of human capital (including health care, education and skills) is almost universally regarded as indispensable. Sustained economic growth depends on the levels of human capital, whose characteristics increase as a consequence of the higher levels health care, education and new teaching and skill acquiring methods¹¹⁹. In the absence of a workforce with minimal levels of education and health, a country is incapable of sustained growth¹²⁰.

Health is a major determinant for productivity and many developing countries depend more on physical labor, therefore it is desired to prioritize having a healthier workforce to attain maximum productivity. Besides, there are threshold values for health levels, below which functioning and productivity will be serious affected.

117 Sushil Haldar, Effect of Health Human Capital Expenditure on Economic Growth in India: A State Level Study, Asia-Pacific Social Science Review 8:2, 2008, pp. 79-97.

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120 Lopez-Casasnovas, G., Rivera, B., and Currais, L., The Role Health Plays in Economic Growth, 2005 In G. Lopez-Casasnovas & B. Rivera (Eds.), Health and Economic Growth: Findings and Policy Implications, Massachusetts: MIT Press, pp.1-15.

2. The Relationship between Health Care and Growth

Studies on the effects of health over income and its increase divide the literature in two main branches. On the first side we have international data over longer periods to help us estimate the impact of national health care decisions on national incomes and their evolution. On the other side there are studies on individual level containing one or more measures of health status among other data. Healthier populations tend to have higher productivity, as workers are physically vigorous, mentally robust and have fewer workdays lost due to illness, theirs or of the members of the family.

There is a series of assertions that the health of a population influences growth and should be treated as another element of economic productivity.

One such study is the one carried out by Arora (2001)¹²¹ who takes into consideration the integrated relation between income and health, health care innovations lead to economic growth, but not vice versa. Observations made by Arora are similar to those reported by Fogel (1994, 1997) in a study on western economies considering a period of two centuries – from 1780 to 1979. Analyzing international data of the last 25 years, Bloom and Sachs obtained empirical evidence that health status and demographic variables play a key role in determining growth rates. More recent studies examined the effects of life expectancy on growth for the next 15-25 years and found strong direct and indirect effects, which operate through investment rates in physical capital and the demographic profile of the population (Barro¹²², 1997). Bhargava, Jamison, Lau and Murray (2004)¹²³ estimated the effects of initial health status on growth for a 5-year term in a group of countries and found, also, strong effects, but only for low-income countries. A series of macroeconomic studies at international level also found proof of a major impact of health status (measured by life expectancy) on growth¹²⁴.

According to Barro¹²⁵, different theories on growth lead to different answers to the question of the way in which the status of health care system affects per capita GDP growth.

For example, neoclassical growth theory proposed by Solow and Swan¹²⁶ suggests that, on the long term, only per capita GDP levels will be affected by global rate of technological advancement. The first generation of endogenous growth models, in which the rate of technological progress varies from country to country, according to local economic conditions, predicts a permanent effect on development¹²⁷. Health status of a country's population will affect its development through various channels, in a way that is dependent on local conditions. The nature of these effects will depend on the convergence group to which the country belongs. For example, a slight change of parameters in the countries from a first group will impact on the long-term levels of per capita GDP in comparison with the technological leaders, without

121 Arora, S., Health Human Productivity and Long-Term Economic Growth, *Journal of Economic History*, 61(3), 2001, pp. 699-749.

122 Barro, R.J., *Determinants of Economic Growth*. Massachusetts: MIT Press, 1997 apud Sushil Haldar, Effect of Health Human Capital Expenditure on Economic Growth in India: A State Level Study, *Asia-Pacific Social Science Review* 8:2, 2008, pp. 79-97.

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125 Barro, Robert J., and Jason R. Barro, Three Models of Health and Economic Growth, Preliminary Draft, September, 1996.

126 Solow, Robert M., A Contribution to the Theory of Economic Growth." *Quarterly Journal of Economics* 70, February 1956, pp.65-94, Swan, Trevor W., Economic Growth and Capital Accumulation, *Economic Record* 32, November 1956, pp.334-61 apud Howitt Peter, Health, human capital and economic growth: a schumpeterian perspective, Brown University, February 9, 2005, at http://www.econ.brown.edu/fac/Peter_Howitt/publication/PAHO.pdf.

127 Ibidem.

affecting their long term growth, while, the same change in a country from the second group will impact on its long term growth rate. Also, a significant alteration of parameters may move the country from one convergence group to another. Howitt identifies six channels through which the level of population health influences economic growth¹²⁸:

Productive efficiency

Healthier workers are more productive from a variety of reasons – increased vigor, strength, alertness, stamina, creativity and so forth. This means that, when health status improves, the country is able to produce more output with any given combination of skills, physical capital and technologic knowledge. One way to look at this effect is to treat health status as any other element of human capital, analog to the skill element.

Life expectancy

Higher life expectancy has a direct effect on population's level of training, influencing the rate of work-related deaths, which constitutes the rate of effective skill depreciation.

Where infant mortality rates are dominant, and work-related death rate is rising, the above effects cannot be switched. This effect may explain why so many developing countries that seemed to grow just as fast as the developed world in the first half of the XX century, later produced disappointing results.

Learning capacity

Health status has a key role in determining the result of educational processes. Children that are well fed, vigorous and alert will assimilate more from a given amount of education than those that are malnourished and suffer from disease effects.

Creativity

One of the benefits of good health status, especially in the case infants and mothers, is that it tends to make a person more creative. Just as a healthy person is more efficient producing goods and services, the same person will be more effective in producing new ideas. In other words, one of the effects one can expect to increase as the health status of the population improves.

Adaptive skills

Another benefit of improving health is that young people develop a better ability to cope with stress, and hence to adapt to the frequently disruptive and stressful effects of rapid technological change.

Inequality

Empirically, there is a strong negative correlation between different indicators of population health and measures of income inequality. Even if a causal interpretation of this correlation is yet an open question, many measures that increase population health will lead to a decrease in inequality, as the main impact will be on the least privileged members of society and those individuals for whom better health status means a better life.

Howitt (2005) notes that these will lead to increased productivity and GDP per capita of a country which is sufficiently well off to be growing at the same rate as the world technology leaders, they will raise the growth rate of per-capita GDP in a country whose growth rate is below that of technology leaders, and they will allow some countries finally to stabilize the relative gap in living standards that separates them from the technology leaders. The one possible exception is an increase in life expectancy, which acts primarily by reducing the infant mortality rate.

A number of studies conducted in developing countries have shown that there is a strong relationship between education and health of the new generation, measured in terms of life

¹²⁸ Idem p.14.

expectancy; the mechanism by which this relationship is revealed resides in the survival rates of the infants and children.¹²⁹

Le Vine (1987) and McMahon (1999) argue that education and increased level of potential gain from education allows parents to provide a healthy environment to their families, although the mechanism by which this occurs is still unclear. Regression proposed by McMahon shows that infant mortality rates depend on the rate of educated women, lagged 20 years¹³⁰. Campino et al considers that height, educational results and health status have a positive impact on income. Therefore, investments in human capital formation, either during childhood or at a later stage, and health status in adulthood, suggest the probability of individuals to obtain higher income, better access to medical services, health and education.

Hurd and Kaptevn (2003)¹³¹ in the paper Health, Wealth, and the Role of Institutions, used data from the two countries (U.S. and Netherlands) argued that income and inequality of income is closely related to inequality of health.

Deaton (2003)¹³² does not find a significant correlation between life expectancy and income inequality in developed countries; infant mortality in developing countries is primarily a consequence of poverty hence, conditioned by average income, income inequality is important only because it is, effectively, a measure of poverty.

The relationship between socio-economic status and health is one of the most robust findings of the health economy. A positive relationship between socio-economic status and health was seen worldwide¹³³. A dominant view in the literature is that socio economic status leads to reductions in psychosocial and environmental risk factors¹³⁴. However, very few studies were aimed at revealing whether there are qualitative differences in how health affects growth and vice versa (double causality). Studies made by Bhargava (2001) and Hurd, McFadden, Merrill and Ribeiro (2003) are truly exceptional in this regard. Bhargava, etc. notes that the survival rates of adults leads to growth in developing countries. Most studies analyzing the connection between income and investment in health systems focus on developed countries¹³⁵.

3. Conclusions:

Sustained economic growth depends on human capital levels, its characteristics growing as a result of higher levels of health, education and new methods of learning and training.

If one asks himself why the performance of poor countries is weak, then we have as a determining factor - the state of health that affects the productivity of individuals thus influencing the welfare of a country.

The impact of health on income is an important issue that has motivated many researches in the field. Most studies analyzing the connection between income and investment in health systems focus on developed countries. Investments in health system will lead to better results in health; on the one hand a higher economic growth affects the health status and better health claims increase revenue, on the other.

¹²⁹ Campino A.C.C., Monteiro C.A., Conde W.L. , Machado F.M.S. Health, human capital and economic growth in Brazil, São Paulo (BR), 2004, p.6 at <http://www-sre.wu-wien.ac.at/ersa/ersaconfs/ersa04/PDF/490.pdf>.

¹³⁰ Idem.

¹³¹ Hurd, M., Kapteyn, A., Health, Wealth, and the Role of Institutions, The Journal of Human Resources, 38(2), 2003, pp. 387-415.

¹³² Deaton, A., Health, Inequality and Economic Development, Journal of Economic Literature, 41, 2003, pp. 113-158.

¹³³ Ibidem.

¹³⁴ Sushil Haldar, Effect of Health Human Capital Expenditure on Economic Growth in India: A State Level Study, Asia-Pacific Social Science Review 8:2, 2008, pp. 79-97.

¹³⁵ Ibidem.

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