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Health human capital and economic growth in Sub-Saharan African and OECD countries[☆]

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Abstract

This paper investigates the effects of health human capital on the growth rate of per capita income in Sub-Saharan African and OECD countries. Using an expanded Solow growth model, panel data, and a dynamic panel estimator, we find that the growth rate of per capita income is strongly and positively influenced by the stock of, and investment in, health human capital after controlling for other variables. The stock of health human capital affects the growth rate of per capita income in a quadratic way: the growth impact of health human capital decreases at relatively large endowments of health stock. Our estimates suggest that 22% and 30% of the transition growth rate of per capita income in Sub-Saharan African and OECD countries respectively, can be attributed to health. The structure of the relationship between health human capital and the growth rate of income in Sub-Saharan African countries is similar to the structure of the relationship in OECD countries. This implies that increased stocks of health human capital leads to higher steady state income. Our results have interesting policy implications.

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Keywords: Health human capital; Economic growth; Per capita income; Oecd; Sub-Saharan Africa; Panel data; DPD estimator

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1. Introduction

This paper uses an expanded Solow growth model, panel from samples of Sub-Saharan African and OECD countries, and a dynamic panel estimator (DPD) to investigate the effects of the *stock* of, and *investment* in, health human capital on the growth rate of per capita income. Specifically, we investigate whether health has a positive impact on income growth and if so whether this impact is similar in Less Developed Countries (LDCs) and developed industrial countries. Economic growth in this context should be interpreted as *transitional* growth. While earlier researchers find that the stock of health human capital has a positive effect on income and its growth, they do not investigate the growth effects of both the stock of and investment in health in the same paper. We recognize that health affects income growth and income growth can also affect investment in health, hence we account for the possible endogeneity of investment in health human capital in our study. We also explore some mechanisms through which health human capital could affect income growth. Results of studies, such as this one, have policy implications, especially in connection with structural adjustment programs currently going on in many developing countries.

An important conclusion from the modern growth literature is the importance of human capital in determining the pace and character of economic growth (Barro, 1991; Benhabib & Spiegel, 1994; Romer, 1990; van Zon & Muysken, 2001). Empirical evidence supports the importance of human capital in explaining cross-country differences in economic growth (Barro, 1991; Barro & Lee, 1996; Benhabib & Spiegel, 1994; Mankiw, Romer, & Weil, 1992; Sachs & Warner, 1997). The concept of human capital is defined broadly in the economics literature to include education, health, training, migration, and other investments that enhance an individual's productivity. However, the majority of empirical growth studies that incorporate elements of human capital focus on education as the measure of human capital. In addition to education, health has long been recognized as one form of human capital; as far back as 1842, Chadwick pointed to health expenditures as investment in human capital.² Despite this early recognition and the importance accorded human capital in growth theory, it is only in the last decade that there has been a flurry of studies on the effect of health on economic growth in the empirical growth literature. Indeed, Temple (1999), in a survey of evidence on the "new growth" theory, could not cite any work that incorporates either the stock of, or investment in health human capital in explaining cross-country variation in growth of per capita income.

The relationship between health human capital and the growth rate of income is an interesting and important topic to study for a number of reasons. First, the proportion of national income spent on health investment tends to be high; it is greater than 10% and rising in OECD countries while for LDCs, it is less than 10%, but rising at a relatively fast pace, although for Sub-Saharan African countries, the pace has slowed in the last decade. It is, therefore, necessary to investigate the growth impact of such a relatively large expenditure. Second, it is necessary to investigate the mechanisms through which health investment affects income growth in order to improve the efficiency of such investment. Third, as Schultz (1999) has argued, health is the ultimate indicator of the well being of a nation, hence the attainment of high stocks of health is an important aspect of development in its own right. Fourth, the growth impact of the HIV/AIDS epidemic in Sub-Saharan Africa makes the relationship between health and economic growth timely. Finally, it is necessary to investigate the relationship between health investment and expenditures

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