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HEALTH, WEALTH AND LONGEVITY

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Introduction

We are looking at a topic that can be visualized from two different points of view. One is to consider the normal life course and the other to see the different variations that exist in the life of a person depending on their health.

It has long been suspected that health and mortality in later life can be linked to earlier experiences (Kermack et al. 1934). The debate continued over the years going from investigators that focus on conditions in uterus (Barker and his fetal origins' hypothesis, 1994) to others that emphasize exposure to disease in early childhood. Later on, Robert Fogel (1993, 1996) drew attention to the implications of historical trends in stature. Height in adulthood is strongly linked to nutrition and disease in early childhood.

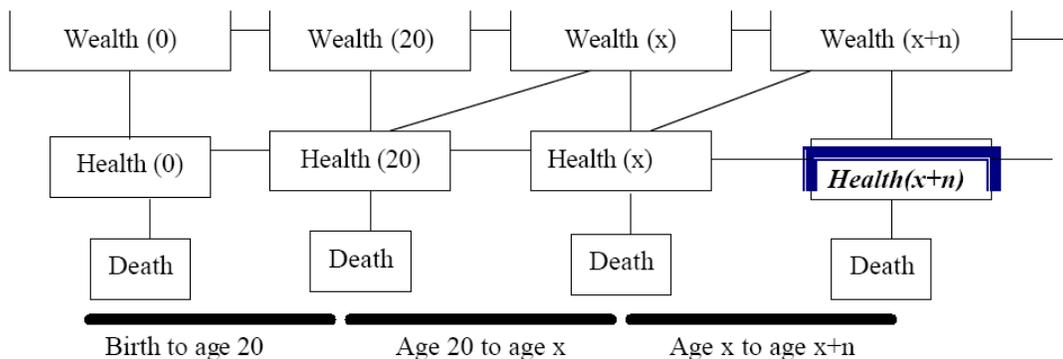
This correlation came out very clearly in the study "Height, Wealth and Longevity in the 19th century in Belgium" conducted by George Alter, Muriel Neven and Michel Oris in 2003 where they use height at age 20 as an indicator of childhood experience and measures of wealth at later ages taking into account that while

height does not measure health it is affected by conditions in childhood, particularly nutrition and disease.

Research in this area has been very difficult because it has been practically impossible to separate the persistent effects of early life conditions from other determinants of health. On one side the group of economic, social and epidemiological conditions that cause poor health in early childhood, are likely to be correlated with conditions in later life. Individuals that are born into poor families are more likely to be economically deprived in adulthood as well. On the other side, poor health in childhood can contribute to lower socio-economic achievement.

The economic interrelations between health and wealth over the life course are illustrated in the figure below where it shows that health is affected by wealth in each period. Individuals with greater economic resources have access to better nutrition, healthier environments, better health care and other advantages. There seem to be no effect of childhood health on wealth at age 20 because wealth in early adulthood is primarily transmitted from parents to children. Later on, after age 20, however, better health leads to more wealth in the next period because the healthy can work longer and harder and spend less on health care.

Figure 1. Conceptual Model of Wealth, Health, and Mortality in Three Periods of the Life Course



(Health, wealth and longevity in the 19th Century East Belgium)

The on going correlations between health and wealth imply that they will be correlated at each age and across time.

Influence of Socioeconomic Status in Health

Several studies have documented a significant association between socioeconomic status and health across various health outcomes including morbidity and functional limitations, (Williams1990, House 2000). Furthermore, to better understand this relationship, particular attention has been paid to age variation in the socioeconomic gap in health. As a result of these studies, socioeconomic differences in health have been often found to be small during early adulthood, reach a peak in middle and early old age and then become minimal in later old age. (House et al. 1990, Elo and Preston 1996).

We should also consider that the pattern of socioeconomic status –age interactions may vary significantly across societies. For instance there is evidence suggesting that the social gradient of health and life expectancy, typically found in Western societies, does not apply in Japan (Cockerham, Hattori and Yamori 2000). This evidence indicates the need for more cross national research to evaluate the possible generalization of findings based on Western experiences.

Countries with low levels of social welfare provision and rapidly aging population provide an excellent setting to examine the impact of socioeconomic status on health and how that impact varies by age. One explanation of the declining SES (socio-economic status) differentials in health at older ages emphasizes, that programs particularly geared to older people (such as Medicare and social security in the US) might help reduce SES inequalities in health at this ages by supporting access to health care and resources for the groups of lower SES (Robert and House 1994). This explanation suggests that we may see widening

SES differentials in health in those countries where low levels of social welfare provision increase the importance of the individuals and family's economic resources for the maintenance of health.

Analyzing some of the available data we find that generally, the larger the investment in health as part of the GDP of the countries involved they will have better health status, larger life expectancy and greater development

Health Expenditure for some countries of Latin- America and the Caribbean

Country	GDP per Capita in US\$	Health expenditure
Colombia	20,407	7.34
Costa Rica	2,689	6.65
Argentina	7,730	4.62
Brazil	4,909	2.97
Chile	4,756	2.60
Mexico	3,411	2.12
Dominican Republic	1,685	2.01
Guatemala	1,541	1.25
Honduras	661	1.24
Haiti	427	1.0

Public Policy and Health Program, Division of Health and Human Development. PAHO

According to IMF data for 19 countries in the Latin-America and the Caribbean, the combined GDP of the region stood at US\$ 1.9 trillion as of 2004. Cuba is not a member of the IMF therefore, the fund has no statistics on the island. Despite strong growth in Brazil, Mexico remained the largest economy, as measured both in current and constant prices.

Mexico became the largest economy in Latin- America in 2001 when its GDP reached US\$617.9 billion in current prices which was 22.5 percent more than the economy of Brazil which till then had had the largest economy in the region.

Meanwhile, Argentina and Venezuela remained the third and fourth largest economies respectively. Despite severe economical crises during the past few years, the two managed to hold on to their rankings and are now benefiting from strong recoveries.

However, regardless of this impressive size of Latin- America's economy, there are huge differences between individual countries. The top three economies, Mexico, Brazil and Argentina accounted for 73 percent of the countries GDP. Mexico's economy is 188 times larger than Haiti who is the poorest economy in the region..

Among the poor examples are countries like Haiti, Paraguay and Honduras, which have larger populations than countries like Panama and Uruguay, yet have considerably smaller economies. Haiti and Nicaragua have suffered from political instability and some very unique factors while Honduras has suffered from lack of sufficient development.

In conclusion, there is a definite association between health and wealth. There is evidence that healthier individuals do better economically and that countries with healthier populations have higher rates of economic growth. We know that healthy adults are more likely to be in the workforce, are more productive, live longer and save more for retirement.

There has been established an estimate of health effect on wages. To estimate this effect, studies use height variations due to health and nutrition in childhood. Effect of 1cm health induced height produces an increase on wages.

Estimates of Health Effects on Wages

Country	Males	Females
Brazil	4%	6%
Ghana	6%	8%
Colombia	8%	7%

.This effects are very large. 1cm height has about the same effect on wages as an extra year of education and we most know that an extra year of education adds about 9% to wages. Estimates of the height effect on wages in developed countries are much smaller. It is only 1-2% extra wages per cm.

Life expectancy has also a positive effect of subsequent GDP growth. The effect is also large. One extra year of life expectancy raises steady state GDP by about 4% because an increase in longevity increases the need for retirement income. The young save more for retirement and this effect lasts until population age structure reaches equilibrium, when the dis-saving of the elderly offsets the savings of the young.

A typical example of this is Japan. The Japanese elderly has demonstrated a superior health status underpinned by both, a very high average life expectancy and healthy life expectancy by world standards.

They usually take a very active part in social activities, display a strong will to work and many participate in volunteerism. For example, during the first two years after the Law for the Stabilization of Employment of the Aged was enacted in 2005, an increase of 60% of full time workers aged 60 or older was observed and the number went from roughly 1.05 million to 1.78 million.

As a result the Japanese elderly own large financial assets. Household's financial assets in Japan are estimated at approximately 15 trillion dollars. Over 60% of those assets are owned by those at the age of 60 or older with the average amount of assets owned per person being approximately US\$120,000.00 and this percentage increases to nearly 80% when it comes to people over the age of 50. The Japanese government is encouraging them to use their assets for investments of capital and to increase their consumption to a greater degree and so there are a great number of older people among new entrepreneurs contributing to Japan's economic growth.

Finally, health like education is a form of human capital and is a fundamental requirement for economic development.

Cost effective interventions that improve child and adult health can be effective investments in economic development since, an elderly person with good health requires a smaller medical and nursing care cost so governments should moreover undertake institutional reforms to diminish health care benefits claims and to promote health consciousness among its citizens.

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