

GLOBALIZATION AND HEALTH

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Globalization describes the increasingly international pattern of economic activities across the globe, including the location of specific economic activities, the distribution in the overall level of economic activity (e.g., GDP per capita) across countries or regions, and the associated flows of goods, services, technological know-how, and capital. Globalization interacts with health in several areas. Economic outcomes of globalization, (such as the level of GDP per capita) may affect health outcomes, while health may affect the level or location of economic activities. The dissemination of health-related know-how and internationally coordinated public health measures contribute to raising health standards globally. However, increased movement of goods or people also create health risks regarding the dissemination of diseases or contaminated products.

Income, Inequality, and Health

Higher income is associated with better health standards, both within and across countries. Cross-country studies find a that aggregate health measures like life expectancy are positively correlated with income per-capita (see Pritchett and Summers, 1996, and Deaton, 2004). The link between income and life expectancy appears to be steepest for low-income countries, although for low- and low-middle-income countries, the dispersion of health outcomes for countries with similar income levels is much higher than for upper-middle and high-income countries. Thus, while the potential health gains associated with higher incomes appear to be strongest in low-income countries, this is also the group where the impact of other factors on health outcomes is strongest, including (lack of) public health infrastructure or inefficiencies in the delivery of public health services, some of which – in turn – may also hold back improvements in income (Deaton, 2004).

Rapid economic development is sometimes associated with an increase in income inequality, which may have implications for access to health services across income groups. However, Deaton (2003) points at the link between poverty and health outcomes, and finds little evidence for a role of inequality per se. Cross-country data on health care financing point at complex interactions between access to health care, poverty, and inequality. Financial sector development and thus access to health insurance is limited in many developing countries. Conversely, the share of out-of-pocket expenditures in private health expenditure is higher, which implies that health risks are associated with higher risks to material living standards. For poor segments of the population, public health expenditure can compensate for the lack of health insurance, but the level of public health expenditures, their efficiency, and geographical access differ very considerably across countries.

The correlation of increases in income and life expectancy has motivated some studies trying to assess the contribution of each to economic development (in the sense of improving living standards). Composite indices, such as UNDP's Human Development Index, assign weights to measures of income, health and possibly other indicators (e.g., educational attainment). Some studies draw on microeconomic estimates of the valuation of mortality risks. Using this approach, Nordhaus (2002) suggests that the contribution of improved health to living standards has been of similar magnitude as improvements in GDP for the United States between 1900 and 1995, and Becker and others (2005) suggest that world inequality has been declining with respect to health even if incomes have not converged.

Knowledge Flows, and Health Technologies as Public or Private Goods

International knowledge flows have played an important role in falling mortality rates across countries. Deaton (2004) summarizes that health improvements in developing countries in the 20th century “ultimately came from the globalization of knowledge, facilitated by local political, economic, and educational outcomes,” including applications of the germ theory of disease, DDT spraying against malaria, the use of antibiotics against tuberculosis, and oral rehydration therapy.

The prominent role of knowledge flows points at the value of international cooperation to facilitate and speed up the dissemination of health technologies, and to assist in their implementation, which is one of the key mandates of the World Health Organization. Recent examples of internationally coordinated health programs include the Measles Initiative, which reportedly succeeded in reducing global deaths from measles by 60 percent (and by 75 percent in sub-Saharan Africa) between 1999-2005, largely through mass immunizations and improvements in care. Another major international health campaign was the WHO's “3 by 5” Campaign and related efforts to reduce the incidence of HIV/AIDS and to improve access to antiretroviral treatment in low- and middle-income countries.

A key factor in the global dissemination of health technologies is the legal framework for the protection of intellectual property rights, including the agreement on Trade-Related Intellectual Property Rights (TRIPS), which requires all WTO member countries to meet certain minimum standards for the protection of intellectual property rights, including patents. Patents allow pharmaceutical companies to retrieve the costs of drug development by charging prices that far exceed production costs. While most essential medicines (according to the WHO definition) are no longer protected by patents, patent protection can complicate access to medicines for relatively new diseases, such as HIV/AIDS. However, the experience with antiretroviral drugs to treat HIV/AIDS also involved numerous ways of facilitating access to these drugs in low-income countries.

Apart from the implications for the dissemination of medical know-how and drugs, the legal environment also has implications for the direction of research. As most of the profits from new drugs arise from sales in high-income countries, pharma companies direct their research

efforts towards drugs for these markets, rather than drugs addressing health issues which are more prevalent in low-income countries.

Health, Growth, and the Location of Economic Activity

While higher income can buy better health, the state of health can also have implications for individual income, GDP per capita, and affect the location of economic activities. Most directly, healthier people are also more productive. Fogel (1993), discussing the effects of nutrition on increased labor supply in Britain between 1800 and 1980, argues that improved nutrition contributed to an increase in the labor force participation rate, and that a higher intake of calories increased workers' productivity. Together, Fogel estimates that these two effects account for 30 percent of economic growth in Britain over the last 200 years.

Conceptually related are attempts to estimate the impact of health on productivity, using data on aggregate macroeconomic outcomes and health indicators. Among the wave of empirical studies on sources of growth starting in the early 1990s, numerous authors have included some measure of health, usually the level of life expectancy. For example, Bloom and others (2001) find that one additional year of life expectancy raises GDP per capita by 4 percent; and Cole and Neumayer (2006) discuss the link between various measures of morbidity and total factor productivity. These studies, however, are usually not able to clearly distinguish between level and growth rate effects, and – in light of the large range of proxies for health status used – offer few insights into the form of the link between health and growth.

In addition to productivity effects, health may affect economic development through its impact on the rate of population growth. The logic of this is already present in the basic Solow growth model, where higher population growth translates into a lower capital/labor ratio and thus lower output per capita. Along these lines, Acemoglu and Johnson (2006), studying the impact of declining mortality in the early 20th century, find that this has resulted in an increase in population growth and a slow-down in GDP per capita. This effect has also played a role in explaining the limited impacts of HIV/AIDS on economic growth in countries severely affected by the epidemic (as higher mortality translates in an increase in the capital labor ratio), while some studies have illustrated the positive impact of adverse health events (plague, 1918 influenza) on the incomes of survivors.

Another link between health and growth that has been intensively researched in recent years is the impact of health on institutional development. Acemoglu and others (2003, as well as several other studies by these authors) highlight the role health conditions played in European colonial expansion. Where health conditions were hostile (malaria, yellow fever), Europeans set up extractive regimes, with minimal investments of human resources and in institutional development. In environments more inviting to European settlers, European colonists were more likely to set up governance structures and institutions like property rights (at least, after the indigenous population was expropriated). The point of this

institutional approach towards health and development is that these different initial conditions have, to some extent, persisted, and contributed to today's development outcomes.

While the evidence on the links between income and health suggests that key aggregate health development indicators would improve in line with the level of economic development, the link between globalization, development, and health may not be positive in all cases or for all regions or people involved. Specifically, health, environmental, and safety standards are generally less stringent in developing countries, which translates into a cost advantage for companies producing there. In a world with perfect markets, the stringency of health and other standards impeding on health reflect society's preferences and the relative costs of achieving certain health outcomes, compared to other development objectives like raising incomes or reducing poverty. Thus, a government may accept lower health and environmental standards to attract investment and thus pursue its broader development strategy, while employees may accept health risks in return for higher salaries.

The most compelling arguments against trade based on differences in health and environmental standards across countries rest on asymmetric-information, incomplete-market, or moral arguments. At the same time, the correct pricing of health risks requires that both sides understand the risks involved, which may be an illusion in many employment relations in developing countries. Regarding imperfect markets, the absence of effective regulations or weak contract enforcement means that companies are not held accountable for negative externalities associated with their activities. For example, in the cases of disposal of toxic waste or of production processes with toxic side effects, part of the costs of such processes may be – possibly literally – “dumped” on the local population, with little or no accountability for the originator. From a moral perspective, certain production methods (a frequently quoted example is child labor, and – again – exports of toxic waste) may be regarded as morally questionable, which could motivate legal provisions in the source countries of exports, or – increasingly common – public campaigns by NGOs targeting consumer behavior.

Health Risks Associated with the Movements of Goods and People

One of the defining characteristics of globalization is an increasing intensity of trade in goods, which also has some implications for global health risks. Contaminated food and other supplies can amplify the spread of diseases globally, especially if long incubation periods are involved or the disease is new and the associated risks not well-understood. For example, one important channel of transmission of HIV in the early stages of the epidemic has been the trade in contaminated blood products.

Most commonly, however, trade-related health risks are associated with contaminated food or other products for human consumption. One recent example include a spate of deaths in Honduras linked to drugs containing contaminated ingredients imported from China. More

frequently, health hazards associated with imported food arise from contamination with pesticides or industrial waste (e.g., in seafood) or bacteria like salmonella.

Globalization introduces some complications to the task of ensuring food safety standards. First, national efforts to attain certain standards in food production need to be complemented by measures to ensure the quality of imported products, which could involve inspections of imported products at the port of entry, harmonization of standards, or measures to ensure that certain standards be met in the source countries (e.g., EU beef import requirements). At the same time, mass production of and increased trade in food and other products means that such products are sold over large regions and across borders. Effectively responding to a health emergency thus also requires to be able to trace products back to their origin and possibly recall affected products.

One important aspect of the links between globalization and health is the global trade in illicit drugs. The United Nations Office on Drugs and Crime estimates that the value of the global market in illicit drugs was US\$90 billion in 2003, and that about 200 million people (5 percent of the world population) consumed illicit drugs at least annually, and 110 million at least monthly. By some margin, the most widely used drug is cannabis. The largest consumer market for illicit drugs is North America, accounting for about 44 percent of the world market, while the most important producing regions are Latin America for cocaine, and various Middle Eastern and Asian countries for opiates.

Apart from trade in goods, a second element of globalization is the increased intensity of the movement of people, including a massive increase in global air travel. Between 1950 and 2005, the number of air travelers increased by a factor of 60 (from 31 million to 1.9 billion), and the number of passenger kilometers multiplied by a factor of 123 (from 28 million to 3.4 billion). As a consequence, it is now barely possible to contain an infectious disease locally or regionally, an issue that has gained increased attention internationally following the SARS outbreak and in light of the risks attributed to Avian flu. Similarly, the global spread of a global epidemic like the 1918 influenza would, under current conditions, occur much faster, allowing less time for preventive measures or for preparations of a health response, and might lead to bottlenecks in the availability of essential medicines.

Further Reading

Good starting point for further reading on health and globalization are Deaton (2003, 2004), and Pritchett and Summers (1996). Acemoglu and others (2003) is an influential paper discussing the impact of disease on economic development in the long term. Regarding the relationship of health on economic growth, López-Casasnovas, Rivera, and Currais (eds., 2005) are comprehensive resource, Acemoglu and others (2006) provide a recent discussion of the impact of increased life expectancy on growth in the early 20th century.

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