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The Effectiveness of Health Expenditure on the Proximate and Ultimate Goals of Healthcare in Sub-Saharan Africa

JOHN SSOZI and SHIRIN AMLANI*
Baylor University, Waco, USA

Summary. — Using the General Method of Moments technique we examine the effectiveness of health expenditure from 1995 to 2011 in 43 nations of Sub-Saharan Africa. Health expenditure is broken into resources to government and non-government entities, private not out-of-pocket, and private out-of-pocket, and we find that while it has a higher effect on the proximate targets such as immunization, malaria, HIV/AIDS, and nutrition, it has a lower effect on the ultimate goals which are life expectancy, infant, and child mortality. Public health expenditure would become more effective if public service delivery improves, in addition to more female education and inclusive healthcare systems.

Key words — health expenditure, life expectancy, infant mortality, child mortality, Sub-Saharan Africa

1. INTRODUCTION

The upcoming United Nations Sustainable Development Goals (SDGs) for the post-2015 development have among their key targets the attainment of healthy lives for all by 2030. Similarly, the outgoing Millennium Development Goals (MDGs, 2000) 4, 5, and 6 focused on reducing infant, child, and maternal mortality, control of HIV/AIDS, and increased life expectancy, especially in the developing nations, by 2015. The SDGs and MDGs health goals build on earlier declarations, prominent of which are: the Alma Ata (1978),[1] which set a deadline of the year 2000 for achieving a level of health that would enable all of the world's people to lead a socially and economically productive life, and the Health for All in the 21st Century (HEALTH21, 1998).[2] In April 2001, the African Union (AU) member states who met in Abuja, Nigeria, pledged to increase government funding for health to at least 15% of the government budget, and urged donor countries to scale up development assistance for health (DAH).[3] For the time period under our study (1995–2011), only a few countries attained and sustained the 15% target: Burkina Faso (2004–10), Malawi (2003–11), Mozambique (2001–06), Rwanda (2006–11), Sierra Leone (2001–05), Swaziland (2008–11), Togo (2009–11), and Zambia (2004–11).

Using median values during 1995–2011, Figure 1 shows that Sub-Saharan Africa (SSA) has experienced an increase in all the key categories of health expenditure and life expectancy since 2000. Government health expenditure from domestic and external sources, and development assistance for health channeled through non-governmental organizations (NGOs) account for most of the increase in expenditure. In addition to the increasing life expectancy, Table 6 in Appendix B shows that with the exception of Lesotho, the compound annual growth rates of the infant and child mortality during 1995–2011 are negative, implying that these rates have been declining. In the light of the new SDGs, against the backdrop of the surge in health expenditure since 2000, while some literature finds a weak link between public health expenditure and health outcomes, this paper seeks to find out whether the increased spending on health in Sub-Saharan Africa (SSA) has yielded better health outcomes. Second, we seek to establish the conditions under which spending on health can become more effective in SSA. This is, in part, based on an observation by the World Health Organization (WHO) that between 20% and 40% of the worldwide resources spent on health are wasted.[4]

The paper progresses in three stages: first, we examine the effect of spending on the ultimate health goals, namely, life expectancy at birth, as well as infant and child mortality rates. At this initial stage, we categorize health expenditure into external resources to government and to non-government entities, government health expenditure from domestic resources, private out-of-pocket, and private not out-of-pocket, while controlling for the prevalence of HIV/AIDS, government effectiveness, universal healthcare systems, cell phone use, and female education. Second, with the understanding that health spending has specific targets, we examine its effectiveness on some of the proximate targets, which are immunization, nutrition, and the prevention and treatment of diseases such as malaria and HIV/AIDS. Third, we examine the effects of the proximate targets on the ultimate goals while controlling for economic growth. The ultimate goals are of interest to us because they capture the cost–benefit relationship of health expenditure.

Investigating healthcare outcomes in SSA is of significant importance, not only due to the nexus between health and economic growth, but also as Sen (1999) puts it: poor health is one of the many sources of disparity between real income and actual opportunities, because it affects the extent to which a given level of income can be converted into the capability to live an acceptable quality of life. According to Bloom, Canning, and Jamison (2004), there are sizable economic returns to better health in terms of higher productivity, and higher propensity to save and invest in productive businesses and education, all which in turn increase life expectancy. However, as pointed out by Perkins, Radelet, Lindauer, and Block (2013) and Booth and Cammack (2013), the health sector is one with pervasive market failure: negative externalities,

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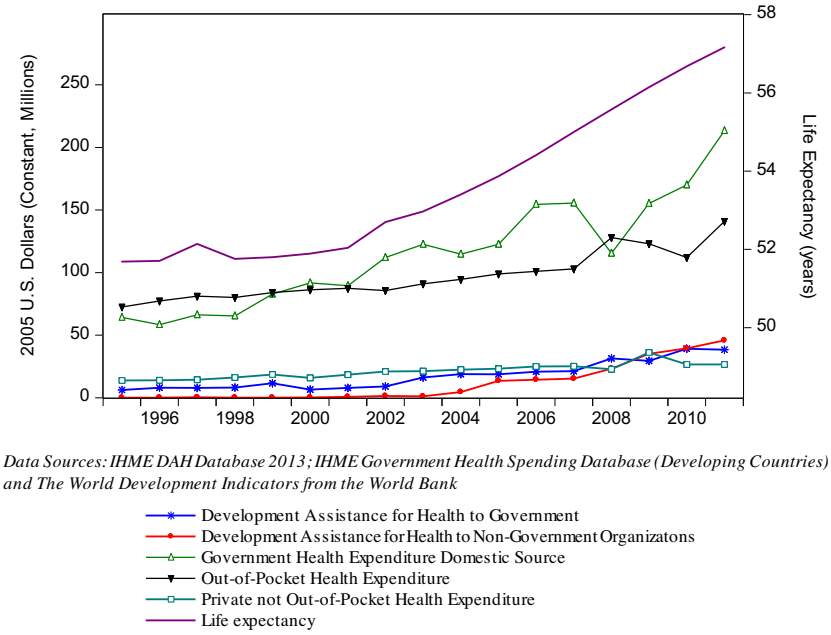

Data Sources: IHME DAH Database 2013; IHME Government Health Spending Database (Developing Countries); and The World Development Indicators from the World Bank

Figure 1. *Median health expenditure and life expectancy in Sub-Saharan Africa (1995–2011).*

principal-agent problems, failure of collective action, information failures, and public goods, all of which might call for government intervention. We therefore focus on health expenditure, especially public expenditure of both domestic and foreign resources because these are the most clear policy variables.

2. LITERATURE REVIEW

Literature on the effectiveness of spending on health has had diverse foci including public and private spending, healthcare systems, development assistance for health, and the role of institutions and social factors. Studies on the association between public health expenditure and the health outcomes have found mixed results: while some find positive effects, others find negative or statistically insignificant effects. Filmer and Pritchett (1999) use cross-sectional data to study 45 nations, out of which 22 are from SSA, and find that public spending on health is not a powerful determinant of mortality. Instead, 95% of cross-national variation in mortality can be explained by a country's income per capita, inequality of income distribution, extent of female education, level of ethnic fragmentation, and predominate religion. Rajkumar and Swaroop (2008) use annual data for 1990, 1997, and 2003 for 91 developed and developing countries of which 24 are SSA, and find that public health spending lowers child mortality rates more in countries with good governance, and that it has virtually no impact on health outcomes in poorly governed countries. They argue that the differences in the efficacy of spending could arise due to a variety of reasons including corruption, patronage, and crowding out effect. Some other authors (Devarajan, Swaroop, & Zou, 1996; Pritchett & Summers, 1996) suggest that this weak link between public spending on health and health outcomes may be a reflection of the efficacy of spending, and dependent upon the quality of public service delivery. Gupta, Verhoeven, and Tiongson (2002) use cross-sectional data for 1993–94 to study 50 countries of which 11 are SSA, and also find that increased public spending on health is associated with a reduction in both infant and child mortality rates, but that the relationship is weak. According to them, health is primarily affected by per capita income, urbanization, adult illiteracy, and access to good sanitation and water.

Garret (2007) argues that in spite of the recent surge in health funding in response to the HIV/AIDS pandemic, much of the cash flooding the global health field is leaking away without result. She attributes most of the wastage to a number of problems: first, not all the funds appropriated end up being spent effectively due to layers of financing bureaucracy and poor health-delivery systems. Second, due to corruption a lot of money leaks out in payments to ghost employees, padded prices for transportation and warehousing, embezzlement of drugs to the illegal market, and sale of counterfeit medications. Third, competition and lack of coordination among donor activities leads to overlapping programs. No single donor can provide all the required funds. Hence coordination, oversight, and guidance are needed to avoid duplication of programs. Fourth, most of the aid is for stand-alone programs such as HIV/AIDS, malaria, tuberculosis, maternal, and new born and child health. This stovepiping ignores other key areas such as nutrition and primary healthcare, thus minimizing the overall efficacy. In a study of Nigeria from 1980 to 2008, Yaqub, Ojapinwa, and Yussuff (2012) find that increasing public expenditure on health is less likely to improve health outcomes unless corruption is curbed.

Williamson (2008) who pioneered the study on the effectiveness of foreign aid on health outcomes, studied all 208 countries from which World Bank collects data from 1973 to 2004, and found that foreign aid is ineffective at increasing overall health, and is an unsuccessful human development tool. Wilson (2011) conducted a follow-up study and confirmed Williamson's (2008) findings that although public health measures can be effective, development assistance for health (DAH) spending from 1975 to 2005 had no discernible effect on country-level mortality rates in high-mortality countries, not even as the level of this funding increased fourfold. However, Wilson (2011) notes that DAH for HIV/AIDS