

BUDGETISATION

SENSITIVE TO THE DEMOGRAPHIC DIVIDEND : THE CASE OF HEALTH IN SENEGAL

SUMMARY :

The health budget has increased significantly, from CFAF 70.35 billion in 2011 to CFAF 236 billion in 2022, with a peak of CFAF 267 billion in 2021. New policies aim to reduce maternal and child mortality through increased access to reproductive health services and control of major diseases. Despite significant progress up to 2023, maternal and child mortality rates remain high, while the burden of communicable and non-communicable diseases is increasing rapidly. The country is classified as a 'medium human development country', with a high HDI of 0.511 and limited access to quality health services. This research consists of linking the DDMI to the 'health' budget function in order to show the sensitivity of the well-being of players in this sector to variations in the public resources allocated to it. To this end, the BSDD model was used to estimate budget elasticities by type. The results show that a non-targeted allocation of resources to the health sector has no significant impact on the DDMI_santé. On the other hand, changes in transfers and operating and capital expenditure in this sector have a significant impact on the Health DDMI. In fact, a 10% increase in the budget for one of its three categories would result in increases of 2.47%, 3.66% and 5.91% respectively in the Health DDMI.

Key words: DDMI, Budget, Health, Elasticity

INTRODUCTION

Demographic transition offers a window of opportunity for accelerated economic growth. Indeed, once the youth dependency ratio is reduced, freeing up resources for government and families, a demographic dividend can be realised if the resources

released are effectively invested to strengthen the accumulation of physical and human capital. The size of the dividend depends largely on the capacity of the economies concerned to create sufficient jobs for the large masses of young people (girls and boys) entering the labour market. The demographic dividend is the economic gain from changing the age structure of a population.

In synergy with the UNFPA Office for West and Central Africa and as part of the implementation of the recommendations of the Heads of State of the African Union 2063, the Regional Centre of Excellence for Research in Generational Economics (CREG) has set up an indicator for monitoring the demographic dividend. The Demographic Dividend Monitoring Index (DDMI) is a composite index based on the theories of generational economics that makes it possible to evaluate and monitor the progress of countries (or regions) in capturing and exploiting the demographic dividend. It covers five (05) dimensions: economic dependence, quality of life, poverty dynamics, human development and, finally, networks and territories. The DDMI makes it possible to apprehend the positive or negative trends in these dimensions and identifies the sectors requiring greater investment in order to create conditions conducive to optimising the demographic dividend and achieving the objectives of sustainable development.

The national budget is the main tool for allocating resources to a country's various economic and social sectors. Its evolution and composition have significant consequences on the results of the public policies implemented in the country. If this instrument is brought into line with the components of the DDMI, it can accelerate

BUDGETISATION

SENSITIVE TO THE DEMOGRAPHIC DIVIDEND : THE CASE OF HEALTH IN SENEGAL

the achievement of the conditions for sustainable, inclusive growth that is conducive to capturing the demographic dividend and sustainable development.

At national level, Senegal has had a ten-year strategic health plan since 1998: the National Health Development Plan (PNDS) implemented by the Ministry of Health. The analysis of the strengths and weaknesses of the health and social action sector carried out in 2018 showed that, despite an organisation that is gradually adapting to the challenges, there were still many constraints affecting all areas of the health system: (i) leadership and governance; (ii) service delivery; (iii) human resources for health; (iv) financing; (v) medicines and technology; and (vi) information/operational research. From this analysis, challenges have emerged that have justified the strategies envisaged in the implementation of Senegal's health policy guided by the National Health and Social Development Plan (PNDSS) covering the period 2019-2028. This plan, drawn up after three strategic planning cycles, aims to contribute to improving the social and health living conditions of the Senegalese population without any form of exclusion. This exercise is taking place against a backdrop of major financial and budgetary reforms, with the adoption of the priority action plan (PAP_2019-23), as part of the ongoing implementation of the policy reference framework that was the Emerging Senegal Plan (ESP).

The aim of this work is to link the DDMI to the 'health' budget function in order to demonstrate the sensitivity of the well-being of players in this sector to variations in the public resources allocated to it. However, despite significant progress up to 2023, maternal mortality rates (476 per 100,000 live births in 2022) and infant and child

mortality rates (42 per 1,000 live births) are still high. The burden of communicable diseases persists, while that of non-communicable diseases is increasing rapidly. With an HDI of 0.511 in 2023, the country is classified as having 'medium human development' (ANSD, *Annuaire statistique santé* 2023). In addition, access to healthcare is restricted by the high cost of quality health services and the lack of care for vulnerable people, even though free healthcare initiatives have been put in place

REVIEW OF LITERATURE

The contributions of agency theory (normative and positive) to health economics overcome some of the limitations of neo-classical theory, and offer elements that can help in making economic policy decisions. In terms of agency relationships, the theoretical contribution of the health care system approach is the explicit consideration of divergences of interest, asymmetries of information and asymmetries and the risks associated with economic activity. According to Bejean, 1997, the relationships between healthcare system personnel are modelled in terms of multiple agency relationships, notably between the attending physician and the patient in ambulatory medicine, between the insured and the insurer in the field of health insurance, between the medical staff and the hospital administrator, and between this administrator and his supervisory authorities.

In terms of economic policy, the main contribution of agency theory is to demonstrate that certain rules of reward or budget allocation are over-manipulated by agents. Consequently, incentives must be introduced to limit the opportunistic

BUDGETISATION

SENSITIVE TO THE DEMOGRAPHIC DIVIDEND : THE CASE OF HEALTH IN SENEGAL

behaviour of players. However, the application of agency theory to health economics is limited by the theoretical model itself and its assumptions. According to Ulmann (2003), improvements in health depend on technical and medical progress. and medicine. He notes that economic growth leads to an increase in household income. Access to better living conditions not only improves health (good nutrition, healthy housing, etc.), but also increases spending on health. This author insists that, at national level, improvements in the population's state of health will only be achieved if there is an egalitarian distribution of wealth.

Frenk (2004) argues that health performance is highly dependent on the economy, but also on health systems themselves. He stresses the importance of taking this link into account in the science of health economics. For him, investing in health is not only desirable, it is essential in most societies. In other words, healthcare systems are faced with difficult and complex challenges, due in particular to the new pressures exerted by an ageing population, the development of chronic diseases and the intensive use of costly but vital medical technologies. The need to design healthcare financing policies and determine the corresponding investments taking into account interactions with the economy is therefore a key idea.

According to the work of the World Health Organisation's (WHO) Commission on Macroeconomics and Health, health performance and economic performance are interdependent. (WHO), health performance and economic performance are interdependent. Poverty, malnutrition and infant mortality are the main causes of reduced life expectancy. For this reason, people in rich countries enjoy better health

than those in poor countries. National income also has a direct influence on the development of healthcare systems, particularly through the insurance system and public spending. While national income mainly determines the level of healthcare spending, the latter is increasing at a higher rate, a fact highlighted by Miniar Ben A. S. and Sami H. in 2015.

Health economists therefore see public health as an important factor in growth and well-being. Growth and well-being. It is both a consumer good and a capital asset. As a capital good, it enables individuals to generate income on the labour market. As a consumer good, it enables individuals to increase their well-being and gives them the freedom to pursue their interests. From an economic point of view, health is a human capital factor and therefore a driver of economic development. In fact, the state of health is increasingly integrated into theories of economic growth as a factor of dynamism.

METHODOLOGY

Budget elasticities measure the sensitivity of the 'health' sub-dimension of the DDMI to variations in the budget. It is a composite index based on the theories of generational economics that makes it possible to evaluate and monitor the progress of countries in capturing and exploiting the demographic dividend. CREG has developed calculations of indicators of the production of welfare services satisfied by function. These include:

$$\log DDMI_j = \beta_j \log DEP_j \quad (1)$$

$$\log DDMI_j = \alpha_1 \log IFonc_j + \alpha_2 \log IInv_j + \alpha_3 \log ITrf_j \quad (2)$$

BUDGETISATION

SENSITIVE TO THE DEMOGRAPHIC DIVIDEND : THE CASE OF HEALTH IN SENEGAL

$$I(Fonc_j) = \frac{Fonc_j}{DEP_j} \quad (3)$$

$$I(Inv_j) = \frac{Inv_j}{DEP_j} \quad (4)$$

$$I(Trf_j) = \frac{Trf_j}{DEP_j} \quad (5)$$

$$DEP_j = Fonc_j + Inv_j + Trf_j \quad (6)$$

With j representing the health function.

Fonc_j : Budget Fonctionnement j

Inv_j : Budget d'Investissement j

Trf_j : Budget de Transfert j

Fonc_j, Inv_j et Trf_j , constitute the 03 natures of the budget for each function j.

ANALYSIS OF BUDGET ELASTICITY

Before estimating budget elasticities, a series of statistical tests were carried out, starting with the stationarity test for the variables, most of which are integrated of order one. Thus, for the health sector, the elasticity analysis shows that variations in transfers and operating and capital expenditure in this sector have a significant impact on the DDMI for health. In fact, a 10% increase in the budget for the three categories would lead to respective increases of 2.47%, 3.66% and 5.91% in the Health DDMI, all other things being equal. On the other hand, a non-targeted allocation of resources to the health sector would have no significant impact on the DDMI_{health}.

Table 1: Budget elasticities

Sector	INV	FON	TRF	TOTAL
Health	0,591***	0,366***	0,247***	-0,012

Source: CREG and country team, 2023

***1%, ** 5%, *10% are significance levels

ECONOMIC POLICY IMPLICATIONS

To ensure that the healthcare sector continues to have a significant impact on the DDMI, the government would benefit from

- maintain the resources allocated to investment
- increase the resources allocated to operations
- increase the resources allocated to transfers.

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