THE JOINT DIAGNOSIS AND POLICY PRESCRIPTION FOR HEALTH CARE SECTORS IN AFRICA

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ABSTRACT

This paper asserts that the United Nations Eight Millennium Development Goals (MDGs) of 2000 compelled leaders within the African Union to jointly diagnose their health care sectors as the most binding constraint to economic growth. The joint diagnosis aligned with the important "growth diagnostics" or "getting the diagnosis right" model. In the 2001 Abuja Declaration (2001AD), African leaders pledged to set a minimum of 15% of their annual budgets to funding and improving their health care sectors; therefore, the objective is to highlight the extent to which each African country complied with the 2001AD pledge. This is important because Africa is the only continent where all state leaders jointly diagnosed and pledged to fund their health care sectors. Methodological computations showed that full compliance with the pledged 15% would have yielded an initial 17.6% improvement in their health care sectors. Additional data analysis revealed that African countries failed to comply with the pledged 15% to fund their health care sectors. This study recommends the regeneration of the 2001AD because complying with the pledge to fund their health care sectors will yield a healthy workforce needed to achieve sustainable economic growth outcomes.

Keywords: Growth Diagnostic, Joint Policy Prescription, Health Care Sectors, Abuja Declaration

JEL classification: D70, D73, D78, I11, I15, I18

1. Introduction

The Eight Millennium Development Goals (MDGs), which the United Nations launched in September 2000, prompted countries worldwide to engage in self-

diagnosis and make prudent policy prescriptions in the first 15 years of the 21st century. According to the World Health Organization (WHO), the Millennium Declaration was designed to improve the social and economic condition of the world's poorest countries, especially African countries, by 2015. Some economists such as Easterly (2007) have argued that the MDGs were unfair to Africa because those involved in the MDGs campaign routinely state that "Africa will miss all the MDGs." Whether one agrees or disagrees with this prejudgment, one can deduce that reducing child mortality; improving maternal health; and combating HIV/AIDS, malaria, and other infectious diseases, which were Goals 4, 5, and 6 of the Eight MDGs, were fundamental in compelling the heads of states of African Union countries to convene on April 27, 2001, in Abuja, Nigeria, resulting in what is now known as the 2001 Abuja Declaration. The major outcome of this meeting was their shared diagnosis of the debilitating health challenges facing their health care sectors, thus the governments pledged to set a target of allocating at least 15% of their annual budgets to improving their health care sectors in order to achieve the MDGs by 2015.

Given the feedback loop between any robust health care sector, which produces a healthy labour force necessary for higher-productivity capacities aimed at achieving sustainable economic growth and development outcomes, we assert that the African leaders got the joint diagnosis right by focusing on the health care sector in each African country because it represents the biggest hurdle to economic growth. In other words, African leaders knew that the debilitating health care sector in each country was the most binding constraint on economic growth. They understood that they were more likely to achieve success if their joint policy prescription focused on their health care sectors because health is wealth and vice versa. The research questions therefore are: (i) Did African countries follow through on their pledge to inject at least 15% of their annual budgets into improving their health care sectors? (ii) What lesson can Africans and global policy experts learn from the diagnosis by African leaders of the most binding constraint on growth and their rational joint policy prescription to mitigate the hurdle to economic growth?

This paper contributes to the literature by answering these research questions to show that getting the diagnosis right is not enough, it is equally important to implement appropriate policy prescriptions geared at the ailment

diagnosed. This is particularly crucial because growth diagnostics and the complementary policy prescriptions developed by Hausmann et al. (2005, 2006) could be viewed from external (or international) and internal (or national) perspectives. Over the years, external diagnosis of the most binding constraints facing African countries have been paired with external policy prescriptions, which policy experts have interpreted in ways that tend to exonerate African policymakers for failures connected to policy implementations. The Structural Adjustment Programmes (SAPs) of the 1980s-1990s and the MDGs, which ended in 2015 are good examples of the external perspective on policy prescription. Many studies have highlighted the effects of SAPs across the African continent (Stein & Nissanke, 1999; Konadu-Agyemang, 2001; Heidhues & Obare, 2011). In one recent study, Weider (2024) explained how the SAPs affected two countries – Ghana and Nigeria – in sub-Saharan Africa. However, Sullivan and Hickel (2025) argue that the SAPs plundered Africa from different dimensions by reimposing the imperial relationship, which further asserted Western control over national economic policies, and cheapening Africa. Notwithstanding the plethora of extant studies and the worldwide interest in analysing the outcomes of SAPs (see Williams, 1994, Heidhues & Obare, 2011) and MDGs normally viewed from the external perspective (see Easterly, 2007), to the best of our knowledge, this is the first study to examine, from a continental perspective, the joint diagnosis and the joint policy prescription embedded in the 2001 Abuja Declaration.

To highlight the impact of the 15% pledge on health care infrastructure in African countries premised on the feedback loop between health and income proposed by Strauss and Thomas (1998), Sohn (2000), Shastry and Weil (2003), and Weil (2013), we use the interaction of health and income to derive health care infrastructure improvement coefficients/multipliers for years prior to 2001 and for years subsequently following the implementation of the joint policy prescription. The computed health care infrastructure improvement coefficient prior to 2001 was 1 and in the year of implementation it was 1.176. This implied that each African country would have experienced an initial 17.6% improvement in their health care sectors/infrastructures during the first year of implementation of the joint policy prescription if the 2001 Abuja Declaration had been complied with and/or fully implemented.

Furthermore, this study complements many studies on economic growth (Barro and Lee, 1994; Barro, 1996; Sachs and Warner, 1997; Strauss and Thomas, 1998; Shastry and Weil, 2003; Weil, 2013; Babatunde, 2018; Oburota et al., 2026) that emphasize the importance of a robust health care system in achieving sustainable economic growth and global developmental outcomes in different economies worldwide. We contend and surmise that African leaders had the joint diagnosis right regarding their health care sectors being the most binding constraint on economic growth, but the data generation process on the implementation of their joint policy prescription from the 2001 Abuja Declaration glaringly reveals that, over the past two decades since the joint policy prescription, African leaders have failed woefully to implement the pledged 15% of their annual budgets to fund their health care sectors in order to achieve sustainable growth.

The rest of this paper is organized as follows. In section 2, we provide a very brief review of studies that examine the importance of getting the diagnosis right and implementing effective policy prescriptions. Section 3 discusses some of the major ailments of the health care sectors in African countries. Section 4 provides the theoretical framework to show the feedback loop between a robust health care sector and sustainable economic growth and development. Section 5 presents the methodology that encompasses the computed data evidence to highlight whether African countries followed through with their joint policy prescription. In section 6, the paper concludes with some policy implications and recommendation.

2. Literature Review

The study by Hausmann et al. (2005, 2006) about the "growth diagnostics framework" or "getting the diagnosis right" emerged after many countries adopted policies known collectively as the Washington Consensus,[1] which was once a popular idea of finding a one-size-fits-all policy for economic growth and development. Given country-specific characteristics and different binding constraints that countries face in their quests to achieve sustainable growth and

[1] The Washington Consensus focused on the enforcement of property rights, the maintenance of macroeconomic stability, integration with world economy through trade openness, and the creation of a sound business environment aimed at promoting private investment and entrepreneurship.

better development outcomes, results varied across countries worldwide. According to Hausmann et al. (2005, 2006), policies that work wonders in one country may have weak, unintended, or negative effects in other countries; therefore, countries need to figure out one or two binding constraints on their economies and then focus on finding rational solutions to those binding constraints. In their studies, Hausman et al. (2005, 2006) proposed a decision tree methodology to help identify the relevant country-specific binding constraints, and to highlight the significance of the growth diagnostics framework; they used Brazil, El Salvador, and the Dominican Republic as case studies to highlight the drawbacks inherent in the current reform strategies. The authors found that while policymakers in Brazil and El Salvador followed the wholesale policy reforms of the 1990s with disappointing growth outcomes, the Dominican Republic followed a narrowly focused policy reform that addressed the most binding constraints on its economy, which yielded strong growth outcomes when compared to the multifaceted policy reforms in Brazil and El Salvador. Other studies such as Habermann and Padrutt (2011) also emphasized the strengths and weaknesses in diagnosing economic growth constraints in developing countries.

Similarly, the issue of health care expenditure as a percentage of gross domestic product (GDP) became controversial in the aftermath of the Millennium Declaration in 2000. Savedoff (2003) highlighted the importance of per capita health spending across countries and suggested that spending could be anywhere from 1% to well over 10% of national income. Savedoff's (2003) study dispelled the frequent references made by many research scholars and health pundits that the WHO recommended that countries should spend 5% of their GDP on health. In addition, the study showed that the issue of how much a country should spend could be viewed from at least four different frameworks or perspectives. First, the peer pressure framework hinges on considering spending more or less on health care relative to other countries with similar characteristics. Second, the political economy perspective tackles the issue of spending from a social science perspective given the political mechanisms involved in determining health spending and the behaviour of the social actors who could influence the health spending decisions. Third, the production function framework can be used to explicitly estimate a health production function through cross-country or panel data analyses by using

aggregate data on spending. Fourth, the budgets framework hinges on the desired health status changes necessary to determine what should be purchased to achieve the preferred health care outcomes.

The concept of successful or failed implementation of policies in Africa is not new to research scholars and policy experts. While the views vary as to who to complement/praise or blame, the consensus, among scholars that examined the outcomes of the Structural Adjustment Programmes (SAPs) in Africa during the 1980s and early 1990s, is that the SAPs did not enhance African development (see Fatton, 1992; Clapman, 1996; Yansane, 1996; Chabal & Daloz, 1999; Bracking, 1999; Ferguson, 2006). In a recent study, Archibong et al. (2021) assessed the impact of the SAPs over the past four decades by comparing the economic performance of the reformers and non-reformers during the SAP era in sub-Saharan Africa. Their study found growth rates to be positive for both groups but much higher among the reformers. Studies such as Easterly (2007) attributed the unsuccessful outcomes of the MDGs in Africa to external diagnosis embedded with policy prescriptions prejudged for failure in Africa.

The debate about the challenges facing health care sectors in Africa is ongoing. For instance, Lawal et al. (2018) pointed out that the provision and delivery of effective health services continued to pose a major challenge in Nigeria. According to Olayiwola and Olaniyan (2019), health insurance increased overall welfare in Nigeria, despite the inherent moral hazard generally associated with health insurance; therefore, the government should implement prudent policies in expanding health insurance. In a study that covered the Economic Community of West African States (ECOWAS), Adenikinju and Osakede (2020) argued that governance quality can enhance the relationship or convergence between per capita income and health outcome. According to Kariburyo (2023), financing health care systems in Africa remains a major problem because the overwhelming majority of African countries have not yet complied with the 2001 Abuja Declaration, which Waruru (2025) also highlighted. Mansouri (2025) pointed out the seven key initiatives that the African continent must take in order to achieve progress and a transformative health care landscape in this era. First, the African continent must focus on *local vaccine and drug production* to enhance the continental self-sufficiency in vaccine and drug production needed to improve the

continent's ability to respond to health crises. Second, African countries need to pursue *universal health coverage (UHC) initiatives* because these will lead to better health outcomes and reduced poverty levels by lowering health care costs. Third, *attracting investment for clinical research* is vital given that Africa is the fastest growing region in the world, and the projected doubling of the population by 2050 could put further strain on the health care systems in African countries. Fourth, Africa must *focus on non-communicable diseases (NCDs)* because public health initiatives play a crucial role in raising awareness about NCDs such as diabetes, hypertension, and cardiovascular diseases. Fifth is the *expansion of digital health technologies*, which can help revolutionize health care delivery across Africa. According to Mansouri (2025), the use of telemedicine platforms like Babyl in Rwanda has already shown promising results in providing remote consultations and reducing the burden on physical health care facilities because these technologies will enhance access to health care services, especially in remote areas. Sixth, Africa must enhance *patient support and affordability programmes to improve access to care and innovation* because these initiatives will mitigate the financial barriers that many patients face. Ensuring easy accessibility to essential medicines and treatments will minimize the exposure to communicable and non-communicable diseases as the population grows. Seventh, focusing on the *growing role of public-private partnerships (PPPs)* will play a crucial role in enhancing the capacity of health care infrastructure in delivering vital services. Finally, Mansouri (2025) concluded that the healthcare landscape in Africa is on the brink of a transformative era if the governments, private sector players, and international organizations can collaborate and invest in sustainable health care solutions.

In a related assessment report by the World Health Organization (2026), the African continent must address the persistent gaps in its health workforce and policy actions. According to the assessment report, Africa faces a projected shortage of approximately 5.85 million health workers by 2030, a marginal improvement from the previously estimated 6.1 million, but this could rebound to over 6 million by 2035 if decisive actions are not taken to address structural constraints in planning, financing, education and employment to ensure retainment. The report highlighted that expanding the fiscal space for health care workforce investment remains critical because sustainable and strategic

investments are required to absorb highly trained health care workers, improve equitable distribution, and enhance performance. Importantly, evidence shows that such investments would yield substantial returns in both health and economic outcomes because health and economic growth have a vital bidirectional relationship.

3. The Ailing Health Care Sectors in Africa

According to the World Health Organization (2015), Africa carries 25% of the world's disease burden and is responsible for over 43% of the global burden of communicable diseases, yet its share of global health expenditures is less than1% and more than half of its population cannot gain access to essential health care services. Given the high poverty incidence in the continent, the relationship between government health care financing and good health care sectors remains a core issue as African countries struggle to build robust health care systems strong enough for disease control and to tackle frequent infectious disease outbreaks, including the recent COVID-19 pandemic, and other pandemic or endemic diseases, such as the resurgence of Ebola in 2026, that continue to plague and ravage the continent. The Ebola issue has continued to hold the attention of the Center for Disease Control and Prevention (2019, 2021) since the 2014-2016 outbreak

Furthermore, the World Health Organization and the World Bank Group (2025) data, used in this study, show that only 5 out of 54 African countries have 1 or 2 doctors/physicians per 1,000 people.[2] Most of the remaining 49 countries have less than one doctor/physician per 1,000 people. In general, African countries are far below the 4.5 physicians or doctors per 1,000 people required to achieve Goal 3 of the Sustainable Development Goals (SDGs). Notably, this goal addresses the issue of good health and well-being across countries and communities. Medical experts at the World Health Organization and other international agencies consider the African continent to have one of the worst health care systems and public health infrastructures in the world. This is further manifested by the fact that for decades, African leaders sought

[2] See https://www.un.org/development/desa/disabilities/envision2030.html for more detailed discussions about the proposed goals contained in the 2016-2030 SDGs, which came after the MDGs ended in 2015.

and preferred to obtain medical treatments in the United States, European countries, India, and Singapore, while neglecting the dilapidated and inadequate health care systems and medical infrastructures in their own countries. For example, presidents from African countries such as Ethiopia, Gabon, Nigeria, Guinea-Bissau, Malawi, Zambia, and Zimbabwe have sought medical treatments overseas and some have ultimately died in foreign hospitals. These raise some pertinent questions: Why do home-trained medical doctors and nurses emigrate to the United States, Europe, Australia, New Zealand, and Saudi Arabia? What plans do African leaders have to bring back their doctors, nurses, and other professionals in order to remedy the severe health care workers gaps in the 21st century? Do African leaders know that the WHO ranked the African continent as one of the worst regions in the world with respect to the acute shortages of health care workers?

As we pointed out earlier, the MDGs motivated self-diagnosis and policy prescriptions by countries worldwide. For African countries, the MDGs, in conjunction with the exceptional health care challenges which HIV/AIDS, tuberculosis, malaria fever, and other infectious diseases pose to their health care sectors, prompted the African Union (formerly the Organization of African Unity) to summon a meeting of African leaders in April 2001 in Abuja, Nigeria. At that meeting, African governments pledged to set a target of at least 15% of their annual budgets to be allocated to improvement of their health care sectors and to make available resources necessary for the improvement of their health infrastructures. To follow up, the African Union summoned a special summit in Abuja, Nigeria on July 15-16, 2013 "to review the progress made and the challenges faced in implementing the Abuja Declaration and Plan of Action on Roll Back Malaria (RBM) of 2000; the Abuja Declaration and Plan of Action on HIV and AIDS, Tuberculosis and Other Infectious Diseases (ORID) of 2001; and the Abuja Call for Accelerated Action Towards Universal Access on HIV and AIDS, Tuberculosis and Malaria Services in Africa by 2010."

Based on the plethora of studies that have examined the health sectors in African countries and the annual reports from the World Health Organization (WHO, 2011, 2019, 2026), we surmise that, in addition to the well-documented diseases burden facing African countries (Todaro & Smith, 2015), there are two major interrelated ailments plaguing the health care sectors in Africa. First,

African countries, after they gained independence in the 1950s and 1960s, inherited imperfectly "uneven and inadequate health care infrastructures established during the colonial era" (Tilley, 2016). These health care infrastructures have become dilapidated due to inadequate funding of the health care sectors. This dilapidation, due to inadequate funding and rent-seeking behavior, extends to highways and rural roads, bridges, electrical power, water supply, and other growth-enhancing infrastructures. Second, African countries are suffering from acute shortages of medical doctors and nurses – medical brain-drain – because these medical professionals prefer to migrate to Europe, Asia, and the United States, where they can gain access to adequate and modern health care infrastructures that are needed to function effectively as medical professionals.

4. Theoretical Framework

This section is deeply rooted in the studies that model the interaction between health and income[3] because health is another form of human capital required to achieve sustainable economic growth and development. We formalize the relationship between a robust health care sector (measured by a healthy labour force) and economic growth and better development outcomes in Africa, within a conventional Cobb-Douglas production function framework of the form:

$$Y = AF[K, HL, NR, ETL, GLD(GHS)] \tag{1}$$

and

$$HL = g[HEP(Y), DID(DEPs), DPR, \boldsymbol{Z}] \tag{2}$$

where: Y is total output or income, A is a measure of technology or total factor productivity, K is the capital stock, HL stands for a healthy labour force[4] required for higher-productivity capabilities, NR represents natural resources, ETL captures entrepreneurial transformational leadership, and $GLD(GHS)$ captures the global lockdowns due to the unique external global health shock (GHS) from the COVID-19 pandemic. In equation (2),

[3] For more discussions on the interaction between health and income, see Strauss and Thomas (1998), Sohn (2000), Shastry and Weil (2003), and Weil (2013).

[4] It is important to note that a healthy labour force, in any economy, is a reflection of a healthy population.

HEP(*Y*) represents the jointly-pledged health expenditure as a percentage of gross domestic product; *DID* captures the impact of debilitating infectious diseases such as HIV/AIDS, malaria fever, tuberculosis, and the COVID-19 pandemic; *DEPs* represents the disease-eradication plans that governments implement in response to the outbreaks of various infectious diseases plaguing the continent, *DPR* is a measure of doctors (as well as nurses and other health care professionals) to people ratio, and $\boldsymbol{Z}$ is a vector or catch-all term for the health care infrastructures available in African countries.

Next, we focus on the relationship between the two endogenous variables: income (*Y*) used to measure economic growth and a healthy labour force (*HL*) necessary to archive the higher productivity required for sustainable economic growth and development outcomes. For clarity, we initially assume that *A*, *K*, *NR*, *ETL*, *DID*(*DEPs*), *GLD*(*GPS*), *DPR*, and $\boldsymbol{Z}$ are constant. Based on this simplifying assumption, we rewrite equations (1) and (2) in logarithm forms and differentiate with respect to time. That is:

$$y = y(hl), \text{ or } \Delta y = \Delta hl \tag{3}$$

and

$$hl = hl(y), \text{ or } \Delta hl = \Delta y \tag{4}$$

Equation (3) shows the impact of improvements in workers' health on output growth. This means we should expect healthy workers in the labour force to be more productive in all African countries although to varying degrees with the assumption of no diminishing returns to output. Equation (4) shows the impact of income growth on the health of the labour force. The implication is that higher incomes improve the workers' health to the highest level possible before hitting the point of diminishing returns. Simply put, an $hl = hl(y)$ curve would be upward sloping before it flattens out at some point. But more importantly, both equations show the feedback loop between *health* and *income*, which implies that better health leads to higher incomes and vice-versa.

Prior to the 2001 Abuja Declaration, African leaders had no joint policy prescriptions (*NP*) to mitigate the binding constraint emanating from their

health care sectors; therefore, the health of the labour force hinged on the health care infrastructures ($\boldsymbol{Z}$) available in each country. That is:

$$hl = \boldsymbol{Z} \text{ and } \Delta hl = \Delta \boldsymbol{Z} \tag{5}$$

Substituting equation (5) into either equation (3) or (4) yields:

$$\Delta y = \Delta \boldsymbol{Z} \text{ and } \frac{\Delta y}{\Delta \boldsymbol{Z}}|_{NP} = 1 \tag{6}$$

To show the implicit improvement in the health care infrastructures in African countries due to the joint policy prescription (*JP*) – the 15% pledge – from the 2001 Abuja Declaration, if truly implemented by African governments, we rewrite equation (5) as:

$$hl = \boldsymbol{Z} + 0.15y \text{ and } \Delta hl = \Delta \boldsymbol{Z} + 0.15\Delta y \tag{7}$$

Similarly, let us assume that African countries funded their health care sectors in line with the world average (WA) of 8.99% in 2001 and 10.1% as reported by the World Bank Group (2025), we can then also write two versions of equation (7) as:

$$hl|_{2001} = \boldsymbol{Z} + 0.0899y \text{ and } \Delta hl|_{2001} = \Delta \boldsymbol{Z} + 0.0899\Delta y \tag{8}$$

and

$$hl|_{2023} = \boldsymbol{Z} + 0.101y \text{ and } \Delta hl|_{2023} = \Delta \boldsymbol{Z} + 0.101\Delta y \tag{9}$$

Given the feedback loop or the interaction of income and health, which implies that $y = hl$ at equilibrium and/or that $\Delta y = \Delta hl$, we substitute equations (7), (8), and (9) into either equation (3) or (4), and then rewrite as:

$$\Delta y = \Delta \boldsymbol{Z} + 0.15\Delta y \quad \text{or} \quad \Delta \boldsymbol{Z} + 0.15\Delta y = \Delta y \tag{10}$$

$$\Delta y|_{2001} = \Delta \boldsymbol{Z} + 0.0899\Delta y \quad \text{or} \quad \Delta \boldsymbol{Z} + 0.0899\Delta y = \Delta y, \tag{11}$$

and

$$\Delta y|_{2023} = \Delta \boldsymbol{Z} + 0.101\Delta y \quad \text{or} \quad \Delta \boldsymbol{Z} + 0.101\Delta y = \Delta y \tag{12}$$

Solving for Δy in equations (10), (11), and (12) yields:

$$\Delta y = \frac{1}{0.85}\,\Delta \boldsymbol{Z} = 1.176\,\Delta \boldsymbol{Z} \tag{13}$$

$$\Delta y|_{2001} = \frac{1}{0.9101}\,\Delta \boldsymbol{Z} = 1.099\Delta \boldsymbol{Z} \tag{14}$$

and

$$\Delta y|_{2023} = \frac{1}{0.899}\,\Delta \boldsymbol{Z} = 1.112\Delta \boldsymbol{Z} \tag{15}$$

Therefore,

$$\frac{\Delta y}{\Delta \boldsymbol{Z}}|_{JPP} = 1.176 \tag{16}$$

$$\frac{\Delta y}{\Delta \boldsymbol{Z}}|_{WA2001} = 1.099 \tag{17}$$

and

$$\frac{\Delta y}{\Delta \boldsymbol{Z}}|_{WA2023} = 1.112 \tag{18}$$

From equations (16), (17), and (18), we compute the improvements (*IMP*) in health care infrastructure and economic growth in African countries from three dimensions. While equation (16) shows the African dimension (AD) based on the 2001 Abuja Declaration, equations (17) and (18) show the two international dimensions (ID) based on the reported world average (WA) health care expenditures as a percentage of GDP in 2001 and 2023. That is:

$$IMP|_{\mathrm{AD}} = \frac{\Delta y}{\Delta \boldsymbol{Z}}|_{JPP} - \frac{\Delta y}{\Delta \boldsymbol{Z}}|_{NPP} = 0.176 \tag{19}$$

$$IMP|_{\mathrm{ID2001}} = \frac{\Delta y}{\Delta \boldsymbol{Z}}|_{WA} - \frac{\Delta y}{\Delta \boldsymbol{Z}}|_{NPP} = 0.099 \tag{20}$$

and

$$IMP|_{\mathrm{ID2023}} = \frac{\Delta y}{\Delta \boldsymbol{Z}}|_{WA} - \frac{\Delta y}{\Delta \boldsymbol{Z}}|_{NPP} = 0.112 \tag{21}$$

Equation (19) shows the difference between equation (16) and equation (6) to highlight the impact of the joint policy prescription (*JPP*) in comparison to the years prior to 2001 when there were no joint policy prescriptions (*NPP*). This is indicative that dutifully implementing the 15% pledged in the 2001 Abuja Declaration would have improved health care infrastructures by 17.6% in the first year. Interpretatively, this is the extent to which the 15% joint policy

prescription/pledge to fund the health care sectors would have improved the health care infrastructure in each African country that complied. Similarly, equation (20) shows the difference between equation (17) and equation (6). This means the health care sectors in African countries would have experienced 9.9% improvements if they simply followed the world average health care expenditure as a percentage of GDP, which was 8.99% in 2001. Equation (21) shows the difference between equation (18) and equation (6), which means the improvements would have been 11.2% if they also followed the world average health care expenditure, which was 10.1% in 2023. Simply following the world average in 2001 and in every year thereafter would have contributed to significant improvements in the various countries' health care sectors and would have enhanced their desires to achieve sustainable economic growth and the global developmental goals laid out in the 2015 MDGs and the 2030 SDGs.

5. Methodology and Computations

In this section, we draw on equation (6) that captures the relationship between health, measured by the health care outcomes and/or infrastructure, and income in all African countries prior to 2001. In addition, equation (7) captures the same interaction thereafter to show the extent to which the African governments complied with the 2001 Abuja Declaration and the improvements, if any, in their health care infrastructures. Based on the data on health expenditure as a percentage of GDP provided by the World Bank Group, we observe that only Sierra Leone, among the 54 African countries, complied in 2014 with the joint policy prescription in the 2001 Abuja Declaration; the expected improvements in health care infrastructure therefore vary across African countries. Given the varying degrees with which African countries funded their health care sectors since they agreed to the joint policy prescription in 2001, we use the latest available data from the World Bank Group (2025) database to calculate $\frac{\Delta y}{\Delta z}|_{AH}$ based on the actual health expenditure (AH) as a percentage of GDP in each African country. This is intended to show the extent to which each African country deviated from the 2001 Abuja Declaration benchmark depicted by equation (13).

From the computed results reported in column 4 of Table 1, the computed $\frac{\Delta y}{\Delta z}|_{AH} - \frac{\Delta y}{\Delta z}|_{AD}$ for all the 54 African countries showed negative improvement

gaps, which reveals noncompliance with the pledge. In column 5, the negative improvement gaps ($\frac{\Delta y}{\Delta z}|_{AH} - \frac{\Delta y}{\Delta z}|_{ID}$) from the international dimension, based on the available data reported for 2023, show the same pattern in 51 of the 54 African countries. Botswana, Kenya, and Libya are the three exceptions with positive gaps because they exceeded the world average in 2023. Both columns 4 and 5 confirm the ongoing underfunding of the health care sectors in African countries. Essentially, the computations reported in column 4 provide the African dimension or the internal perspective with which policymakers in Africa can assess and/or view the improvements in their health care sectors while the calculations reported in column 5 provide the international dimension or the external perspective. The actual health care expenditures in African countries did not only fall below their set target in the 2001 Abuja Declaration, but still below the world average of 10.1% in 2023 – more than two decades later.

Table 1: Deviations in Health Care Funding in African Countries

	Countries	$\frac{\Delta y}{\Delta z}\|_{AH}$	$\frac{\Delta y}{\Delta z}\|_{AH} - \frac{\Delta y}{\Delta z}\|_{AD}$	$\frac{\Delta y}{\Delta z}\|_{AH} - \frac{\Delta y}{\Delta z}\|_{ID\,\|2023}$
1.	Algeria	1.052	– 0.124	– 0.060
2.	Angola	1.100	– 0.076	– 0.012
3.	Benin	1.085	– 0.0.91	– 0.027
4.	Botswana	1.120	– 0.056	**0.008**
5.	Burkina Faso	1.067	– 0.109	– 0.045
6.	Burundi	1.034	– 0.142	– 0.078
7.	Cabo Verde	1.024	– 0.152	– 0.088
8.	Cameroon	1.038	– 0.138	– 0.074
9.	Central African Republic	1.035	– 0.141	– 0.077
10.	Chad	1.065	– 0.111	– 0.047
11.	Comoros	1.062	– 0.114	– 0.050
12.	Congo, Democratic Republic of	1.034	– 0.142	– 0.078
13.	Congo, Republic of	1.071	– 0.105	– 0.041
14.	Côte d'Ivoire	1.048	– 0.128	– 0.064
15.	Djibouti	1.046	– 0.130	– 0.066
16.	Egypt	1.038	– 0.138	– 0.074
17.	Equatorial Guinea	1.046	– 0.130	– 0.066
18.	Eritrea	1.029	– 0.147	– 0.083
19.	Eswatini (formerly Swaziland)	1.047	– 0.129	– 0.065
20.	Ethiopia	1.030	– 0.146	– 0.082

	Countries	$\frac{\Delta y}{\Delta Z}\|_{AH}$	$\frac{\Delta y}{\Delta Z}\|_{AH} - \frac{\Delta y}{\Delta Z}\|_{AD}$	$\frac{\Delta y}{\Delta Z}\|_{AH} - \frac{\Delta y}{\Delta Z}\|_{ID\ |2023}$
21.	Gabon	1.032	– 0.144	– 0.080
22.	Gambia, The	1.096	– 0.080	– 0.016
23.	Ghana	1.038	– 0.138	– 0.074
24.	Guinea	1.030	– 0.146	– 0.082
25.	Guinea-Bissau	1.036	– 0.140	– 0.076
26.	Kenya	1.149	– 0.027	**0.037**
27.	Lesotho	1.065	– 0.111	– 0.047
28.	Liberia	1.085	– 0.091	– 0.027
29.	Libya	1.144	– 0.032	**0.032**
30.	Madagascar	1.040	– 0.136	– 0.072
31.	Malawi	1.042	– 0.134	– 0.070
32.	Mali	1.093	– 0.083	– 0.019
33.	Mauritania	1.059	– 0.114	– 0.053
34.	Mauritius	1.070	– 0.106	– 0.042
35.	Morocco	1.035	– 0.141	– 0.077
36.	Mozambique	1.045	– 0.131	– 0.067
37.	Namibia	1.105	– 0.071	– 0.007
38.	Niger	1.044	– 0.132	– 0.068
39.	Nigeria	1.054	– 0.122	– 0.058
40.	Rwanda	1.030	– 0.146	– 0.082
41.	Sao Tome and Principe	1.062	– 0.114	– 0.050
42.	Senegal	1.045	– 0.131	– 0.067
43.	Seychelles	1.053	– 0.123	– 0.059
44.	Sierra Leone	1.049	– 0.127	– 0.063
45.	Somalia	1.038	– 0.138	– 0.074
46.	South Africa	1.098	– 0.078	– 0.014
47.	South Sudan	1.081	– 0.095	– 0.031
48.	Sudan	1.045	– 0.131	– 0.067
49.	Tanzania	1.044	– 0.132	– 0.068
50.	Togo	1.032	– 0.144	– 0.080
51.	Tunisia	1.008	– 0.168	– 0.025
52.	Uganda	1.043	– 0.130	– 0.069
53.	Zambia	1.063	– 0.113	– 0.049
54	Zimbabwe	1.029	– 0.139	– 0.083

Source: Authors used data provided by the World Bank Group (2025) from the Global Health Expenditure Database and the World Health Organization for the computations reported in columns 3, 4 and 5: https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS.\

To further comprehend the severity of noncompliance, we apply the "rule of 70" or "rule of 72," which is a straightforward mathematical method for estimating how long it takes for any given value to double if it grows at a constant annual growth rate. Given the expectation of constant 15% annual funding of health sectors in African countries, one can easily surmise that the country-specific values of health care infrastructure that existed in each African country in April during the 2001AD would have doubled every 4.666 years $(\frac{70}{15} = 4.666)$ or 4.8 years $\left(\frac{72}{15} = 4.8\right)$ if each country had complied with the 15% annual pledge to fund and improve their vital health care sectors. In other words, doubling the value of health care infrastructure in every African country, roughly every five years, would have transformed the health care sector and services provided in each African country.

Simply put, the value of the health care infrastructure in African countries in 2001 would have doubled roughly three times during MDGs era. In essence, the values in April 2001 would have doubled in December 2005, the values in December 2005 would have doubled in August 2010, and the values in August 2010 would have doubled in April 2016 in each African country during the MDGs; and this would have yielded significant positive improvements in health care delivery in all African countries.

It is important to point out that Africa is the only continent in the world where their state leaders came together, in the aftermath of MDGs in 2000, to jointly and correctly diagnose their health care sectors as the binding constraint on achieving sustainable economic growth and global developmental goals. In other words, the African continent stands alone with respect to the minimum 15% pledge; therefore, there is no need for comparative analysis with any other continent. Given the joint pledge by the members of the African Union to devote a minimum of 15% of their annual budgets to fund their health care sectors, we strongly believe that the African continent deserves a self-appraisal, which this study provides.

Finally, to answer the pertinent research questions we posed earlier as to whether African countries followed through on their pledge to inject at least 15% of their annual budgets into funding and improving their health care sectors and what lesson Africans and global policy experts can learn from the African leaders' correct diagnosis of the most binding constraint on growth and their rational joint policy prescription to mitigate the hurdle to economic growth, we provide country-specific bar charts in Panels A and B of Figure 1.

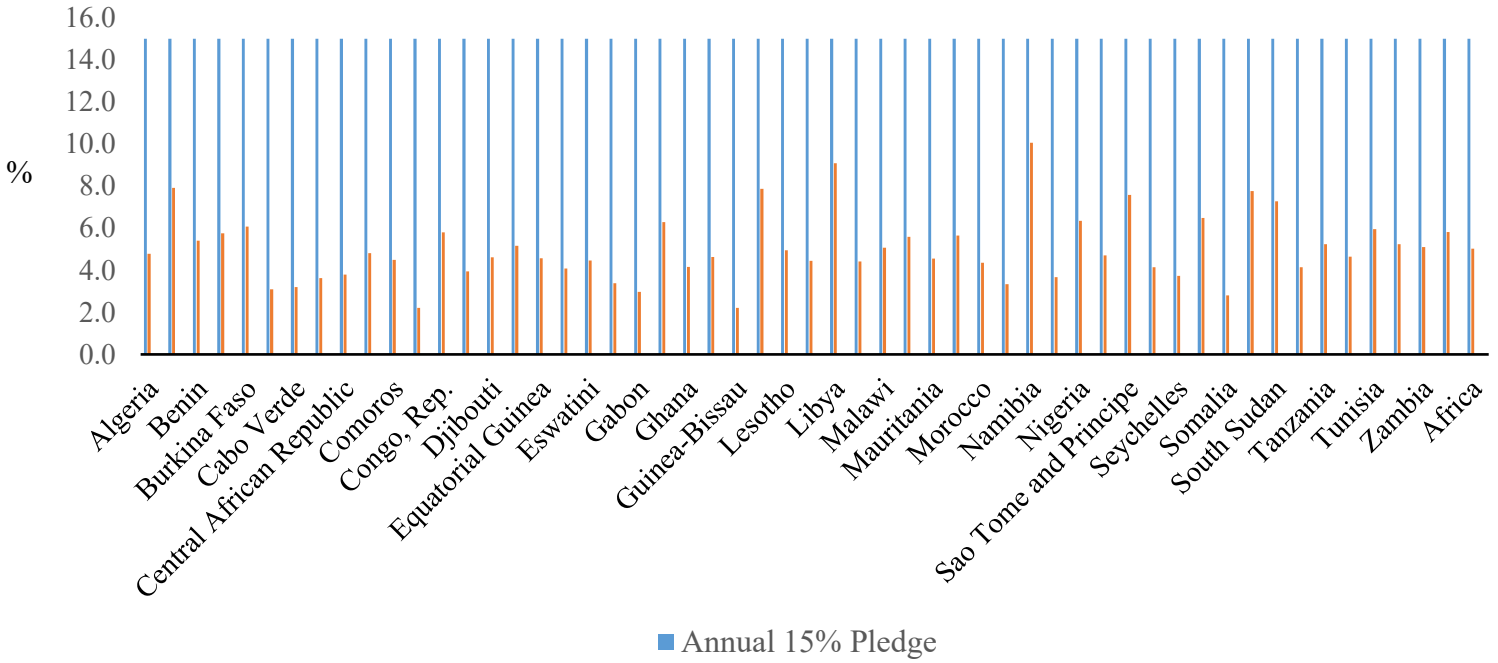

Figure 1: Country-Specific Compliance to the 15% Pledge

Source: Constructed by the authors based on the current dataset provided by the World Bank Group (2025).

Figure 1 provides the simple optical answer intended to help African leaders and their policymakers to easily appraise themselves and see if they actually complied with the pledge they made in the 2001 Abuja Declaration. From the data-driven bar charts in both panels of Figure 1, it is obvious that the African continent continued to underfund its health care sectors, and this is still an ongoing issue in every African country because compliance is nonmandatory.

As shown in Panel A of Figure 1, the Democratic Republic of the Congo and Guinea-Bissau exhibited the least compliance (2.2% average) to the 15% pledge among the 54 countries. In Panel B, only Namibia averaged 10.1%, which is still roughly 5% below the pledge, over the 2000-2023 sample period. The African continent averaged 5%, which amounted to only one-third of the joint continental pledge. The data further confirms Waruru's (2025) assertion of the underfunding of the vital health care sector in Africa.

6. Conclusions

In this paper, we use the Hausmann-Rodrik-Valesco (2005, 2006) "growth diagnostics" or "getting the diagnosis right" framework to show and emphasize that, in April 2001, African leaders correctly diagnosed their health care sectors and/or health infrastructures as the most binding constraints on their quest to achieve sustainable growth and development outcomes. To mitigate their biggest hurdle to growth and achieve the MDGs by 2015, African leaders jointly pledged, in the 2001 Abuja Declaration, to set a target of allocating at least 15% of their annual budgets to fund and improve their health care sectors. According to Savedoff (2003), the World Health Organization had no specific target with respect to annual health expenditure as a percentage of GDP; therefore, this study is not intended to compare the African continent with other continents because there are no other continents where their governments jointly diagnosed and pledged to devote a specific percentage of their annual budgets to funding and improving their health care sectors.

However, the World Bank data showed that the United States' health care expenditure as a percentage of its GDP was 13.219% in 2001, while the world average was 8.972%. According to the World Health Organization and the World Bank, African countries continue to lag far behind other countries with respect to health care funding; therefore, the 15% pledged in the 2001 Abuja

Declaration can be considered to be a rational joint policy choice intended to help African countries catch-up with the rest of the world and to boost their crumbling health care infrastructure, which is still being experienced in the 21st century, despite the diffusion of medical technology in this era of globalization.

Based on the data analysis, it is obvious that African governments and their leaders failed to truly implement or fully comply with their joint policy prescription, which was intended to mitigate the most binding constraint that they jointly diagnosed as the impediment to achieving sustainable economic growth and the global developmental goals laid out in the 2015 MDGs and the 2030 SDGs. Metaphorically, this behavior among African countries is analogous to the case of a community of 54 households that are all suffering from the same debilitating disease and each household has a medical doctor or nurse. The debilitating disease propelled the 54 medical doctors or nurses to summon a medical conference where they jointly agreed to prescribe a daily dose of 15 milligrams (15 mg) of a particularly strong medicine for every household member to take over a period of two weeks. Despite the medical expertise in diagnosing the cause of the disease and in prescribing the appropriate medical solution, surprisingly, each of the 54 households took doses between 2 mg to 10 mg during the entire prescription period with the end result being a sick community of 54 households. Since foreign medical doctors or experts are not involved in the disease diagnosis and medical prescription, the community of 54 households cannot blame external medical doctors or experts for their failure to heal. In other words, African leaders jointly and correctly diagnosed their health care sectors as the most binding constraint on their desires to achieve sustainable economic growth and development and also to meet the Eight MDGs. In the process, they jointly agreed on an ***internal policy prescription*** in terms of the minimum 15% pledged to adequately fund and improve their health care sectors; therefore, policy experts and economists, who generally exculpate policymakers in Africa for failed policy implementation premised on ***external policy prescriptions***, cannot blame the international financial institutions such as the World Bank and the International Monetary Fund and other international organizations: World Health Organization and World Trade Organization for the profound failures of African leaders to implement their joint ***internal policy prescription***.

It is difficult to pinpoint the exact lesson that Africans can learn from the joint diagnosis of their health care sectors as the most binding constraint accompanied by the rational joint policy prescription because Africa continued to be plagued with the problem of asymmetric information, which is a topic beyond the scope of this paper. One should not be surprised if medical experts and health care workers in African countries had no knowledge that their governments, in 2001, had pledged to devote at least 15% of their national income to improve their health care sectors, which they failed to implement in the wake of the United Nations Millennium Declaration in 2000.

In contrast, global policy experts have learned not to expect meaningful policy changes from African countries based on past experiences from policy recommendations in the past and the woeful implementation or lack thereof. What is obvious is that African leaders could easily diagnose one or two of their most binding constraints and then prescribe what can be described as ***smokescreen policies*** intended to be implemented haphazardly to signal trial solutions or efforts, never implemented due to the misuse of resources allocated to the project or intentionally designed to divert attention away from the diagnosed binding constraint posed by the biggest hurdle to achieve sustainable economic growth and better development outcomes. In terms of policy implications, African countries can still revitalize their debilitating health care sectors and health infrastructures between now and 2030, which would put them on the path to catching up with the rest of the world if they simply comply with the 2001 Abuja Declaration for the next two decades to correct for and reverse their noncompliance over the past two decades. If African leaders and policymakers adequately fund their health care sectors and health infrastructures over the next two decades as specified in the 2001 Abuja Declaration, this would go a long way in solving the devastating "medical-brain-drain" currently plaguing the entire African continent.

Given the strong positive relationship between health and economic growth that many studies have highlighted over the years and the data-driven bar charts shown in Figure 1 for all African countries, this study strongly recommends that all African leaders and their policymakers must rejuvenate their 2001 Abuja Declaration by fully complying with the minimum 15% pledge to fund and improve their health care sectors in this era of globalization because economic growth requires a healthy workforce as manifested by the 2020

COVID-19 pandemic. More importantly, if African leaders and their policymakers are not self-centered because they can gain access to robust medical/health care elsewhere in the world, this is the right time – given the resurgence of "Ebola 2026" – for them to prioritize the adequate funding and maintenance of their health care sectors and all their vital infrastructures. Prioritizing adequate funding for the health care sectors matters if Africa wants the World Health Organization's certification of the continent as "Ebola-free" through the implementation of prudent – not smokescreen – policies.

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