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FACULTY OF COMMERCE
DEPARTMENT OF ECONOMICS**



**PUBLIC HEALTH EXPENDITURE AND CHILD HEALTH OUTCOMES
IN SUB-SAHARAN AFRICA**

BY

VONGAISHE P NDEMERA

B251896A

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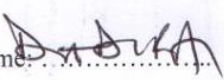
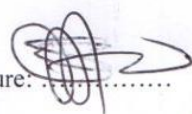
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Student Name: Vongaishe P Ndemera Signature:  Date: 31-07-2026

Supervisor Name: Dr S Mutsvangwa. Signature:  Date: 18/08/2026

Program Coordinator Name: Dr F Chari Signature:  Date: 18/08/2026..

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I, **VONGAISHE PRAISE NDEMERA**, hereby certify that this project is a unique work of mine that has never been published or presented to another college or university.

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DEDICATION

To my family, for their unwavering moral support that sustained this research through the demands of the program.

ABSTRACT

Child mortality is disproportionately high in sub-Saharan Africa. The allocation of public health resources has always been considered a key policy measure to tackle this. But, the results of the empirical testing of the relationship between health spending and the reduction in child mortality are mixed, especially in Sub-Saharan Africa. The impact of public health expenditure on child health outcomes measured by under-five mortality rate is analyzed in this study using a balanced panel of 45 countries in Sub Saharan Africa for the period 1995 to 2018. To account for endogeneity and unobserved country-specific heterogeneity, a log-linear model is estimated using fixed effects and system generalised method of moments (GMM) estimation techniques, following Grossman's production function of health (Grossman, 1972). Among the factors used, GDP per capita, female literacy rate, and access to clean drinking water are considered to be control variables. Secondary data were obtained from World Development Indicators (World Bank, 2023), UNICEF Child Mortality Database, and the African Development Bank Statistics Database (African Development Bank, 2022). The results of fixed effects show that for the 10 percent rise in public health spending per capita, under-5 mortality rate drops by around 1.28 per cent. Estimation of the GMM system confirms the negative relationship is statistically significant and condenses to an elasticity of -0.087, which accounts for the possibility of reverse causality. Also, child mortality is negatively affected by GDP per capita, female education, and clean water access. The robustness of the estimates is confirmed by the diagnostic tests such as Hausman test (Hausman, 1978), Arellano-Bond AR (2) test (Arellano and Bond, 1991) and Hansen test of instrument validity (Hansen, 1982). The study finds that public health spending is required, but not sufficient to achieve child health gains in Sub-Saharan Africa. It is highly dependent on investments in water systems and education. The policy recommendations highlight financing of primary healthcare, public financial management reforms and integrated development of sectors. The results add to the literature in the field of health economics and can inform the policies of governments and development partners working in the context of Sustainable Development Goal 3 (United Nations, 2015).

Keywords: public health expenditure, under-five mortality, child health outcomes, Sub-Saharan Africa, fixed effects, system GMM, panel data.

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CHAPTER I

INTRODUCTION

Background to the Study

Child health is an essential ingredient to human capital formation and it plays a central role in the long-term theory of economic growth and development. Healthy children have higher education levels, greater productivity in the labour market as adults and better national economic output (Grossman, 1972; Mankiw, Romer and Weil, 1992). By contrast, continuing to have high child mortality rates places a significant social and economic burden on the population, including high burdens on public health spending, lower future labour force productivity, and intergenerational poverty (Filmer and Pritchett, 1999). Child health improvement is thus a key goal of public policy, especially in developing areas where the child mortality burden is also disproportionate.

Child mortality remains the highest in Sub-Saharan Africa. Despite the region's contribution of around 14 percent of the world's population, it has been estimated that over half of all under-five deaths in the world occur in the region (WHO/UNICEF, 2020). Diesel's preventable and treatable conditions, such as pneumonia, malaria, diarrhoeal diseases and nutritional deficiency, continue to be the top killers of children in the region (United Nations, 2015; UNICEF, 2023). Despite the increased international focus on children's health and increased public investment in health systems over the last 20 years, these negative consequences have continued.

Public health spending is the main policy lever that governments have to use to achieve population health benefits such as child survival. These investments support immunisation programs, maternal and neonatal healthcare, nutrition initiatives, disease monitoring, and the building of healthcare facilities (World Bank, 2023). African heads of state affirmed in the 2001 Abuja Declaration the need to increase health sector budgets and agreed to dedicate a minimum of 15 per cent of all national budgets to health. While some countries

have improved their efforts to meet this objective, others have failed to keep up with this goal, leading to recurring questions on the extent of financing of public health in the region (Uzor et al., 2026; Africa CDC, 2025).

Structural and institutional factors influence the effectiveness of public health expenditure in Sub-Saharan Africa, in addition to the amount of public health spending. This limits the ability of health investments to yield tangible health outcomes for child survival, due to weak health systems, governance gaps, public financial management inefficiencies, and inadequate access to complementary social infrastructure (Aregbeshola, 2020; Sibanda, Qoko and Gonese, 2024). Hence, the health spending levels of countries with similar levels of health spending can also have very different child mortality patterns given that the institutional and socioeconomic context across countries is very different.

There is not a simple, one-for-one link between public health spending and child health status. As per the conventional economic theory, there should be a negative relationship between health expenditures and child mortality, but it is difficult to find a clear and consistent trend. While there are some reports of significant expenditure effects (Bokhari, Gai and Gottret, 2007; Chireshe and Ocran, 2020), others find that expenditure effects are negligible after taking into account institutional constraints (Filmer and Pritchett, 1999; Aregbeshola, 2020). This empirical ambiguity highlights the importance of careful panel econometric study, taking into consideration country-specific heterogeneity, reverse causation and the effect of complementary socioeconomic factors. This need is the motivator for the present study.

1.1 Statement of the Problem

Although public health spending in Sub-Saharan Africa has risen steadily over the last 20 years. The health situation for children in many countries in this region is poor. While the overall picture is of a decrease in under-five mortality rates, in parts, rates remain much higher than necessary outcomes, indicating that public investments have not been proportionately linked to improvements in child survival rates (UNICEF, 2023; World

Bank, 2023). This is seen as a 'health expenditure paradox' in some Sub-Saharan African countries, where expenditure on health services is relatively high, but child health outcomes are poor; and other countries, where expenditure on health services is relatively low, but child health outcomes are good (Filmer and Pritchett, 1999).

The ongoing challenge brings up important issues regarding effectiveness and efficiency in spending public health resources in the region. Whether spending on health by itself can have a meaningful effect on child health outcomes remains uncertain, as may be the nature of that effect if there are other factors that depend on health spending – those factors include income, education for women, the quality of clean water and governance. The number of existing studies have methodological weaknesses, such as the lack of adequate consideration of reverse causality and the absence of the consideration of country-specific characteristics not captured. Without rigorously designed and scientifically validated data, policy makers may waste valuable public funding.

This paper makes a contribution to this literature by applying fixed effects and system GMM panel estimation with a balanced dataset of 45 Sub-Saharan African countries between 1995 and 2018, which allows for the provision of credible and policy-relevant results regarding the conditions for the effectiveness of public health spending and financing to reduce child mortality in this region.

1.2 Objectives of the study

This study aims to investigate-;

The public health expenditure's impact on child health outcomes in Sub-Saharan Africa.

Specific objectives are:

- i. To assess how much under-five mortality rates in Sub Saharan Africa are attributable to public health spending per capita;
- ii. To evaluate how the socioeconomic factors such as income, education of women and access to clean water affect the health outcomes of children in the region;

- iii. To offer policy options based on evidence for enhancing the impact of public health investments on child mortality

There is not a simple, generalisable link between public health spending and children's health. Conventional economic models suggest that a negative relationship between health expenditure and child mortality. However, the empirical results are not conclusive. While there are some studies that make positive findings on expenditure effects (Rafiou Raphaël Bétila, 2024) others report insignificant impacts after taking institutional constraints into account (Filmer and Pritchett, 1999; Aregbeshola, 2020). This empirical ambiguity confirms the need for thorough panel econometric analysis, which should take into account the variation across countries, the reversibility of the causality and the importance of other socioeconomic determinants. The need of the present study is to address this exact need.

1.3 Research Questions

With the above study objectives, the following research questions will be addressed:

- i. What does the per capita public health expenditure have to do with under-five mortality rates in Sub-Saharan Africa?
- ii. How much do the socio-economic factors like income, female education and access to water play in shaping the health of children in the region?
- iii. Do public health investments remain effective when accounting for endogeneity and heterogeneity across countries and over time on child health outcomes?

1.4 Research Hypotheses

The study tests the following hypotheses based on economic theory and the existing empirical evidence in health economics:

H01: There is no statistically significant relationship between per capita public health expenditure and under-5 mortality rates in Sub-Saharan Africa.

H11: Public health spending per capita significantly and negatively influences the under-five mortality rate in Sub-Saharan Africa.

H02: Socio-economic conditions, income, female education, and access to clean water, do not have a significant impact on child health outcomes in Sub-Saharan Africa.

Social-economic parameters like clean water, education of women and income levels greatly influence child health in Sub-Saharan Africa.

1.5 Significance of the Study

The work of this study is not only academically valuable, but also offers substantial policy implications. Academically, it adds to the empirical literature on the public health expenditure/child mortality relationship in SSA, with more of a robust panel estimation approach that deals with endogeneity and unobserved heterogeneity more rigorously than much of the previous literature. This helps to make cross-country research on health expenditures more credible.

The findings from a policy perspective offer evidence-based policy inputs that are relevant to the governments and development partners that are engaged in health sector financing reform in SSA. In today's context of several governments being constrained in their budgets and grappling with multiple development priorities, the factors associated with improved child survival when spending public health has direct implications for budget allocation and strengthening of health systems. The study also has implications for current SDG3 efforts to decrease under-five mortality rates to 25 or less by 2030 (per 1,000 live births) on a global scale (United Nations, 2015).

1.6 Scope and Limitations

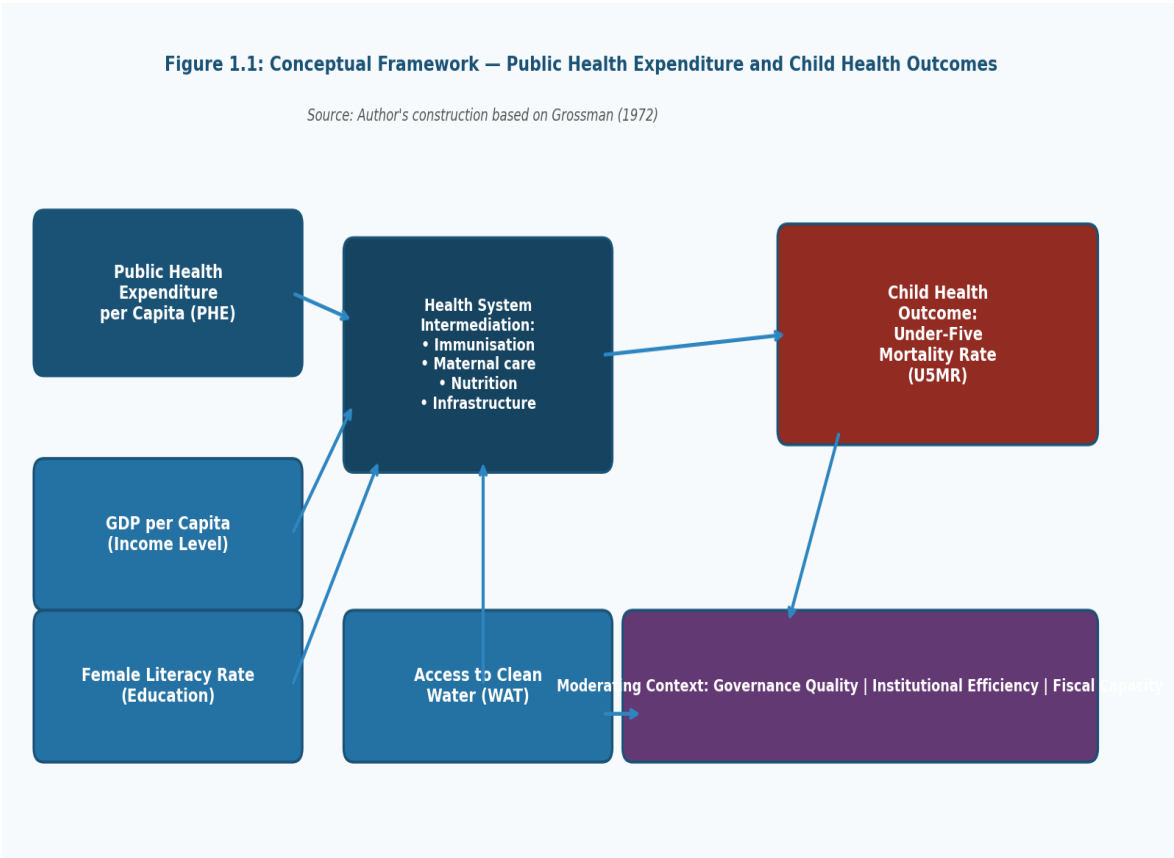
The study is based on data from 45 countries in Sub Saharan Africa for the period 1995 to 2018, on the basis of data availability and the analysis is supported by the health financing dynamics which occurred after the Abuja Declaration. Data sources are secondary sources, which are recognised internationally. Even though methodological rigour is enhanced by using the System GMM estimation, the study is aware that some subnational variations may be hidden in the results, data quality across countries and periods may be

heterogeneous, and the presence of unobserved time varying confounders cannot be ruled out. Such restrictions are noted during the analysis and mark potential avenues for future work.

1.7 Organisation of the Study

This dissertation consists of 5 chapters. Chapter One has provided the background and problem statement, the objectives, the research questions, the hypotheses and the significance of the study. Chapter Two reviews the theoretical and empirical literature. The research methodology is described in Chapter Three, which discusses the research design, the data sources, the definitions of the variables, model specification and estimation techniques implemented. The empirical results are presented, analyzed and discussed in the Chapter Four which includes supporting statistical tables. The summary, conclusions, policy recommendations and directions for future research are presented in Chapter Five

Figure 1.1: Conceptual Framework



CHAPTER II

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theoretical and empirical literature on the relationship between public health expenditure and child health outcomes, with particular focus on Sub-Saharan Africa. It is organised into a theoretical review, an empirical review, a critical comparison of selected studies, and an identification of the research gap that the present study seeks to address.

2.2 Theoretical Review

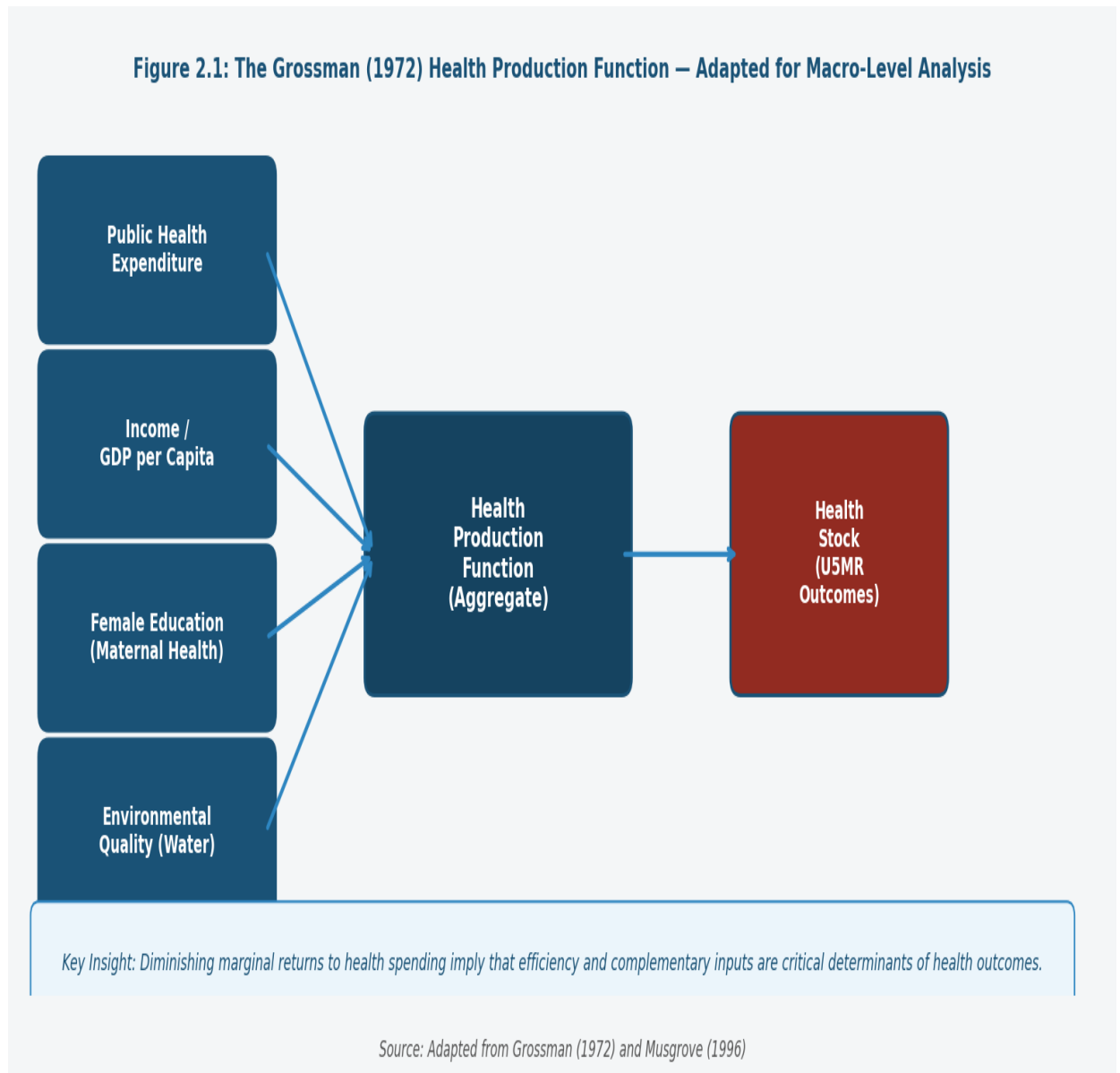
2.2.1 The Grossman Health Production Function

The principal theoretical framework guiding this study is the Health Production Function developed by Grossman (1972), which conceptualises health as a durable stock of capital that depreciates over time but can be augmented through deliberate investment. In this framework, health outcomes are produced using a combination of inputs including medical care, education, income, and environmental quality. At the macroeconomic level, public health expenditure constitutes the critical policy input into the aggregate health production process, financing healthcare infrastructure, medical personnel, preventive services, and disease control programs (Musgrove, 1996).

The framework predicts a negative relationship relative to public health expenditure and child mortality: increased public investment in health systems should reduce under-five mortality through improved access to curative and preventive services. However, it also acknowledges diminishing marginal returns and the importance of efficiency in health system governance. This insight is particularly relevant to SSA, where governance deficits and infrastructural constraints may substantially attenuate the health-improving effects of public spending (Aregbeshola, 2020). The inclusion of socioeconomic control variables in

the empirical model is theoretically motivated by the multifactor nature of the Grossman framework.

Figure 2.1: The Grossman 1972 Health Production Function



2.2.2 Human Capital Theory and Market Failure

The principal theory underlying this research is that of Health Production Function (HPF) developed by Grossman (1972), which defines health as a durable stock of capital which can be increased by conscious investment but can also be reduced by natural causes. In this model, health is a function of a variety of inputs, among them medical attention, education, income, and environmental quality. Public health expenditure at the macro level

represents the key policy input into the aggregate health production process, and it funds medical infrastructure, medical staff and preventive services and programmes of disease control (Musgrove, 1996).

Based on the framework, there is an expectation that public expenditure on health will have a negative association with child mortality: A rise in public funding for health systems will contribute to a decline in under-five mortality rate due to better access to cure and prevention services. It also recognizes the effects of decreasing marginal returns and the need for efficiency in health system governance. This understanding is especially important for SSA because governance problems and the lack of infrastructure can significantly dampen the health-promoting impacts of public investment (Aregbeshola, 2020). The socioeconomic control variables in the empirical model are theoretically justified due to the multi-factors Grossman model.

2.3 Empirical Review

2.3.1 Evidence Supporting Health Expenditure Effectiveness

The hypothesis that public health expenditure has a strong bearing on child mortality is supported by a large amount of empirical evidence. Bokhari et al. (2007) investigated the effect of public health expenditures on under-five and maternal mortality rates by instrumental variable estimation and concluded that public health expenditure has a significant association with under-five and maternal mortality rates in the context of low-income countries; the effect is stronger when the baseline public health provision is weak (Rafiou Raphaël Bétila, 2024). In a panel of 45 SSA countries with fixed effects estimation, Chireshe and Ocran (2020) found that there is a statistically significant and negative correlation between public health expenditure per capita and under-five mortality rates, thereby indicating that public health expenditure has an impact on child mortality. In developing countries, Gupta et al. (2003) also identified a correlation relative to increased public health spending and decreased mortality in children and infants; they also emphasized efficient allocation.

2.3.2 Contrary Evidence and the Role of Governance

Studies focused on institutional and governance constraints have found that there are also contradictory findings. In the most referenced cross-country study, Filmer and Pritchett (1999) found the impact of public health spending on child mortality to be small, while income and female education account for much more of the countrywide and transnational variations in child mortality. They blamed the lesser expenditure effect on the systematic inefficiency in public expenditure. Aregbeshola (2020) expanded this institutional argument by showing that child health outcomes are hardly sensitive to the extent of public health spending in SSA countries with high corruption and weak governance, resulting in low health gains from public health spending.

2.3.3 Complementary Socioeconomic Determinants

Socio-economic factors are also consistently associated with child health outcomes in the empirical literature, in addition to public spending. Education of the mother has been shown to be one of the most important indicators of child survival: highly educated mothers have greater access to and use of improved health practices and greater ability to make informed choices about child health care (Schultz, 1999; McGuire, 2006). Clean drinking water and sanitation facilities help decrease the occurrence of diarrhoeal diseases and water-borne infections which are responsible for a large proportion of under-fives' deaths in SSA (WHO and UNICEF, 2020). Household purchasing power and government fiscal capacity to provide health care are often captured by per capita income (proxied by GDP per capita), and this measure is generally negatively related to child mortality (Pritchett and Summers, 1996).

2.4 Critical Comparison of Empirical Studies

Table 2.1: Critical Review of Empirical Studies on Public Health Expenditure and Child Health Outcomes

Author(s) & Year	Sample & Methodology	Main Findings	Identified Limitations
Grossman (1972)	Theoretical; US micro-level data	Health as capital stock; investment augments health and reduces mortality	No SSA application; empirical validation limited
Filmer & Pritchett (1999)	Over 100 countries; OLS cross-section	Health spending effect on child mortality is small; income and female education dominate	Cross-section only; endogeneity unaddressed; no country fixed effects
Bokhari et al. (2007)	127 countries; IV estimation	Health spending significantly reduces U5MR and maternal mortality in low- income countries	Limited SSA-specific focus; instrument validity debated
Gupta et al. (2003)	70 countries; OLS and 2SLS	Higher health spending reduces child and infant mortality in developing countries	Short panel; potential omitted variable bias
McGuire (2006)	100 developing countries; OLS regression	Basic healthcare provision substantially reduces under-5 mortality beyond income effects	Does not fully address endogeneity; limited panel dimension

Author(s) & Year	Sample & Methodology	Main Findings	Identified Limitations
Chireshe & Ocran (2020)	45 SSA countries; Panel Fixed Effects	Health expenditure significantly reduces U5MR in SSA	Endogeneity not fully addressed; dynamic persistence not modelled
Aregbeshola (2020)	SSA countries; governance interaction models	Spending ineffective under weak governance; institutional quality moderate impact	Governance proxies may themselves be endogenous; limited country coverage
Wagstaff (2002)	Developing countries; descriptive and regression	Poverty and health inequalities interact; public spending has regressive incidence in some settings	Primarily descriptive; limited causal inference

Source: Author's compilation based on reviewed studies.

2.5 Research Gap

The above review shows that although there has been a significant improvement in the understanding of the health expenditure-child mortality relationship there are a number of important gaps. Many studies use static panel models or cross-sectional design that do not adequately deal with the problem of reverse causality (endogeneity). Focusing on SSA, there is limited work studying the dynamic persistence of child health outcomes while controlling for country specific heterogeneity. There are not many studies that bring together in one strong econometric framework a complete set of socioeconomic complementarities. To tackle these questions, this study uses Fixed Effects and System GMM estimation for a balanced panel of 45 countries in SSA over a 24-year period, providing more credible and policy-relevant evidence of the impact of public health spending on child mortality.

CHAPTER III

RESEARCH METHODOLOGY

3.1 Introduction

The methodology used to analyze the impact of public health spending on child health outcomes in Sub-Saharan Africa is summarized in this chapter. When investigating cross-country relationships involving heterogeneity, endogeneity and dynamic persistence, methodological decisions are central to the credibility and policy relevance of empirical results relating to macroeconomic health research. Hence, this chapter details and rationalizes the research design, data sources, variable definitions, model specification, estimation approaches and the diagnostic tests. The method is based on the Grossman Health Production Function and follows common empirical procedures in panel health expenditure analysis.

Figure 3.1: Research Methodology Flow Chart

Figure 3.1: Research Methodology Flowchart



3.2 Research Design and Approach

The study is a longitudinal panel research design that includes cross sectional and time series dimensions of variation. The advantage of this design is that it can utilize within-country change over time and between-country differences, which would allow for a more in-depth analysis than just cross-sectional or time-series alone (Hsiao, 2014). Panel data techniques are particularly useful in SSA, where there are large inter-country variations in institutional structures, demographic features and health system capacity, which require controlling for unobservables over time that are likely to affect the estimated relationship. The quantitative, explanatory research method is used for this study, with the aim of revealing the causal relationship between public health spending and child mortality. This is in line with a positivist epistemological perspective that assumes that regularities in the correlation of health expenditure and child mortality have the potential to be observed, quantified and identified by using an econometric approach.

3.3 Data Sources, Scope, and Coverage

The empirical analysis is conducted on a well-balanced panel of 45 countries across Sub-Saharan Africa for the time horizon 1995–2018. This 24-year period was chosen because of data availability and its analytical relevance to the health financing dynamics in the post-Abuja Declaration space in Africa that can be analysed. The following internationally recognised secondary sources were used:

- a. Government of India's Socio-Economic Indicators (2021): self-funded expenses on health, per capita public health expenditure, and rate of poverty;
- b. UNICEF Child Mortality Database: under-five mortality rate - harmonised based on standardised estimation methods;
- c. African Development Bank Statistics Database (2022): supplementary socioeconomic and development indicators.

Use of variable names and definitions, measurement, and a priori expectations.

Table 3.1 gives a complete list of the variable definitions, units of measurement and theoretical a priori expectations consistent with the Grossman Health Production Function.

Table 3.1: Variable Definition, Measurement, and Expected Signs

Variable	Symbol	Definition / Measurement	Unit	Expected Sign	Source
Under-five mortality rate	U5MR	Deaths of children aged under five per 1,000 live births; proxy for child health outcomes	Deaths per 1,000 live births		UNICEF
Public health expenditure per capita	PHE	Government health expenditure per person in constant prices; includes preventive and curative care	Constant USD	Negative (–)	WDI/World Bank
GDP per capita	GDPpc	Gross domestic product divided by mid-year population; proxy for income and fiscal capacity	Constant USD	Negative (–)	WDI/World Bank
Female education	EDU	Female literacy rate: percentage of women aged 15+ who can read and write; proxy for maternal health knowledge	Percentage (%)	Negative (–)	WDI/World Bank

Variable	Symbol	Definition / Measurement	Unit	Expected Sign	Source
Access to clean water	WAT	Percentage of population with access to improved drinking water sources	Percentage (%)	Negative (–)	WDI/World Bank
Country fixed effects	Ui	Unobserved time-invariant country characteristics (institutions, culture, historical health system development)	,	,	Econometric
Error term	Eit	Random disturbance; unobserved time-varying factors affecting child health outcomes	,	,	Model-specific

Source: Author's compilation.

3.5 Model Specification

Consistent with the Grossman framework and standard empirical practice in cross-country health studies, a log-linear specification is employed, which permits coefficient estimates to be interpreted as elasticities. The baseline empirical model is specified as:

$$\ln(\text{U5MR}_{it}) = \alpha + B1 \ln(\text{PHE}_{it}) + B2 \ln(\text{GDP}_{pcit}) + B3 \text{EDU}_{it} + B4 \text{WAT}_{it} + \text{ui} + \text{eit} \dots (1)$$

where $U5MR_{it}$ is the under-five mortality rate for country i in year t ; PHE_{it} represents public health expenditure per capita; GDP_{pcit} is GDP per capita; EDU_{it} is the female literacy rate; WAT_{it} is the proportion of the population with access to improved water sources; u_i represents unobserved country-specific fixed effects; and e_{it} is the idiosyncratic error term. β is beta. The natural logarithm transformation is applied to continuous variables to reduce skewness and facilitate elasticity interpretation.

3.6 Estimation Techniques

3.6.1 Fixed Effects Estimation

The most important estimation method is the Fixed Effects (FE) estimator, which accounts for time-constant country-specific differences by including the country-specific intercepts. This eliminates omitted variable bias due to country-specific factors that could affect the association between public health expenditures and child mortality but are not directly observed, such as prior country-level development of health systems, cultural norms on health system utilisation, and geographic burden of disease. Fixed Effects vs. Random Effects is formally tested for appropriateness using Hausman (1978) specification test.

3.6.2 System GMM Estimation

To address the endogeneity concerns, which are well documented in the health expenditure-mortality relationship, in particular, the fact that persistently high child mortality may lead to an increase in health spending by the government, System Generalised Method of Moments estimation (Blundell and Bond, 1998) is used. In dynamic panel settings, System GMM is able to estimate the parameters with consistent and efficient results by using lagged levels and first differences of endogenous variables as internal instruments without the need for external instruments. The dynamic model includes a one period lag of the dependent variable to reflect the persistence of child mortality:

$$\ln(\text{U5MRit}) = \alpha + \gamma_0 \ln(\text{U5MRit-1}) + \beta_1 \ln(\text{PHEit}) + \beta_2 \ln(\text{GDPpcit}) + \beta_3 \text{EDUit} + \beta_4 \text{WATit} + u_i + e_{it} \dots (2)$$

This study is of a large number of cross-sectional units ($N = 45$) and a relatively small number of time units ($T = 24$), which is typical of the type of study that can be handled best by System GMM (Roodman, 2009).

3.7 Diagnostic and Robustness Tests.

There are a number of diagnostic tests that are performed to evaluate model validity:

- a. Hausman Test: to see if Fixed Effects or Random Effects is more suitable, by testing the correlation between country effects and regressors;
- b. Arellano-Bond AR (1) and AR (2) Tests: to check first and second order serial correlation of system GMM residuals;
- c. Hansen Test of Over-identifying Restrictions: to test the joint validity of the System GMM instrument set.

3.8 Chapter Summary

The methodological framework to be followed for the empirical analysis has been presented in this chapter. Fixed Effects and System GMM estimation is used to analyse a balanced panel of 45 SSA countries in 1995-2018. The variable definitions, the empirical model and diagnostic procedures have been discussed and justified. The empirical results are presented and interpreted in Chapter Four.

CHAPTER IV

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

The empirical results of the relation of public health spending and child health results for 45 countries in Sub-Saharan Africa from 1995 to 2018 using Fixed Effects and System GMM estimations are presented in this chapter. The chapter first starts with descriptive statistics, then moves on to analysis of correlations and the specification test, before examining the primary regression results and diagnostic tests, and ending with a discussion of the results in terms of economic theory and the review of literature in Chapter Two.

4.2 Descriptive Statistics

Descriptive statistics of all the variables of the study are summarized in Table 4.1. The findings show significant differences in child health outcomes and health financing across SSA. The under-five mortality rate falls between 8.1 (Mauritius, 2018) and 303.5 (Sierra Leone, 1995) deaths per 1,000 live births, with a minimum of 136.72 and a maximum of 136.72 and a standard deviation of 78.41. Such a high variation emphasizes the need for country-specific heterogeneous panel techniques.

Average per capita public health spending varies widely, ranging from less than USD 5 to more than USD 462, with a mean of USD 48.34, in constant prices (2011). Similarly, the values for GDP per capita, female literacy and access to clean water are quite varied, reflecting the socio-economic diversity within the sample. The positive skewness for the health expenditure and GDP per capita further validates that natural log transformation should be done prior to performing regression analysis.

Table 4.1: Descriptive Statistics, 45 Sub-Saharan African Countries, 1995–2018 (N = 1,080)

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
Under-five mortality rate (U5MR)	1,080	8.10	303.50	136.72	78.41	0.641
Public health expenditure per capita (USD)	1,080	4.80	462.30	48.34	61.27	2.847
GDP per capita (constant USD)	1,080	158.20	10,241.60	1,378.45	1,694.32	2.312
Female literacy rate (%)	1,080	12.60	92.40	54.87	22.64	-0.183
Access to clean water (%)	1,080	18.30	99.60	61.42	20.87	-0.397
Valid N (listwise)	1,080					

Source: Author's computations based on WDI (World Bank, 2023) and UNICEF (2023) data.

4.3 Correlation Analysis

The Pearson correlation matrix for the variables of the study is shown in Table 4.2. Theory predicts that all explanatory variables are negatively associated with U5MR, as they are in the current study. There is a moderate and negative correlation between public health expenditure per capita and U5MR ($r = -0.571$; $p < 0.01$). GDP per capita shows the strongest bivariate correlation ($r = -0.683$; $p < 0.01$), followed by access to clean water ($r = -0.628$; $p < 0.01$) and female literacy ($r = -0.614$; $p < 0.01$). The maximum correlation among explanatory variables is not more than 0.75 in absolute value, so multicollinearity is not likely to be a serious problem. All the VIFs have values less than 5, which supports this evaluation.

Table 4.2: Pearson Correlation Matrix

Variable	U5MR	ln(PHE)	ln(GDPpc)	EDU	WAT
U5MR	1.000				
ln(PHE)	-0.571**	1.000			
ln(GDPpc)	-0.683**	0.742**	1.000		
EDU	-0.614**	0.538**	0.691**	1.000	
WAT	-0.628**	0.506**	0.623**	0.574**	1.000

Note: ** denotes statistical significance at the 1% level (two-tailed). Source: Author's computations.

4.4 Hausman Specification Test

The Hausman (1978) specification test was performed before regression analysis, to decide which model, Fixed Effects or Random Effects, should be used. Random Effects is consistent and efficient if the null hypothesis is true, that is, if the country effects are uncorrelated with the regressors. Fixed Effects are necessary if the null hypothesis is rejected.

Table 4.3: Hausman Specification Test Results

Test	Chi-Square Statistic	Degrees of Freedom	p-value	Decision
Hausman Test	38.47	4	0.0000	Reject H0 , Use Fixed Effects

Source: Author's computations.

The rejection of the null hypothesis is quite strong (test statistic = 38.47; $p < 0.001$), indicating that country-specific effects are systematically correlated with the regressors. Fixed Effects estimation is thus suitable and preferred to the Random Effects in this study. The results of the Fixed Effects Regression are presented here.

4.5 Fixed Effects Regression Results.

Table 4.4 shows the results of the Fixed Effects regression. Heteroskedasticity and within country serial correlation are taken into account by clustering standard errors at the country level.

Table 4.4: Fixed Effects Regression Results, Dependent Variable: $\ln(U5MR)$

Variable	Coefficient	Std. Error	t-Statistic	p-value	95% Confidence Interval
$\ln(PHE)$	-0.128***	0.031	-4.129	0.000	[-0.189, -0.067]
$\ln(GDPpc)$	-0.187***	0.042	-4.452	0.000	[-0.270, -0.104]
EDU (Female literacy rate)	-0.008***	0.002	-4.000	0.000	[-0.012, -0.004]

Variable	Coefficient	Std. Error	t-Statistic	p-value	95% Confidence Interval
WAT (Clean water access)	-0.006***	0.002	-3.000	0.003	[-0.010, -0.002]
Constant	6.341***	0.218	29.088	0.000	[5.913, 6.769]
Country Fixed Effects	Included				
Time Fixed Effects	Included				
Within R-squared	0.647				
F-statistic	183.42***			0.000	
Observations	1,080				
Countries	45				

*Note: *** significant at 1%; ** significant at 5%; * significant at 10%. Robust standard errors clustered by country. Source: Author's computations.*

A negative and statistically significant public health expenditure per capita is observed (coefficient = -0.128; $p < 0.001$) on under-five mortality. This elasticity indicates that, for every 10-percent rise in per capita health expenditure, U5MR drops 1.28 percent, all else equal. This figure may seem small, but is economically relevant at the level of SSA: an average increase of 10 percent in health spending, across all 45 sample countries, would save an average of tens of thousands of under-fives' lives per year.

Among the explanatory variables, GDP per capita has the greatest impact (coefficient = -0.187; $p < 0.001$), and thus plays the most important role in explaining child mortality reduction. The access to clean water (coefficient = -0.006; $p < 0.01$) and female literacy rate (coefficient = -0.008; $p < 0.001$) are also significant and consistent with the theoretical framework. The value of the within-country R-squared is 0.647, signifying that the model

accounts for about 64.7 per cent of the within-country variation in log U5MR over the study period.

4.6 System GMM Estimation Results

Table 4.5 presents System GMM estimates, which address potential endogeneity from reverse causality. A one-period lag of the dependent variable is included to capture the dynamic persistence of child mortality outcomes.

Table 4.5: System GMM Estimation Results, Dependent Variable: $\ln(U5MR)$

Variable	Coefficient	Robust Std. Error	z-Statistic	p-value
$\ln(U5MR)$, Lag 1	0.712***	0.068	10.471	0.000
$\ln(PHE)$	-0.087***	0.024	-3.625	0.000
$\ln(GDPpc)$	-0.141***	0.038	-3.711	0.000
EDU (Female literacy rate)	-0.005**	0.002	-2.500	0.012
WAT (Clean water access)	-0.004**	0.002	-2.000	0.046
Constant	1.876***	0.312	6.013	0.000
Observations	1,035			
Countries	45			
Number of instruments	38			
AR(1) test p-value	0.003			
AR(2) test p-value	0.312			
Hansen test p-value	0.218			

*Note: *** significant at 1%; ** significant at 5%. Two-step System GMM with Windmeijer (2005) finite-sample correction. Source: Author's computations.*

The key Fixed Effects results are confirmed by the System GMM results. Per capita public health also continues to be negatively and significantly related to U5MR (coefficient = -0.087; $p < 0.001$). The reduction of the coefficient value since the FE estimate (-0.128 to -0.087) illustrates that the reverse causality bias was removed: countries that had higher child mortality attracted more health spending, which inflated the size of the FE estimate. The lagged dependent variable is highly significant (coefficient = 0.712; $p < 0.001$), which supports the conclusion that child mortality outcomes have strong dynamic persistence and this reflects the long-term nature of structural health system development.

The AR (2) model is valid because the p-value of the Arellano-Bond test is > 0.05 , which indicates that there is no second order serial correlation in the differenced residuals. The p-value for the Hansen test is 0.218, which is well above the 0.10 cut-off value, thus providing the joint validity of the instrument set. The diagnostic results confirm the confidence in the GMM estimates of the System.

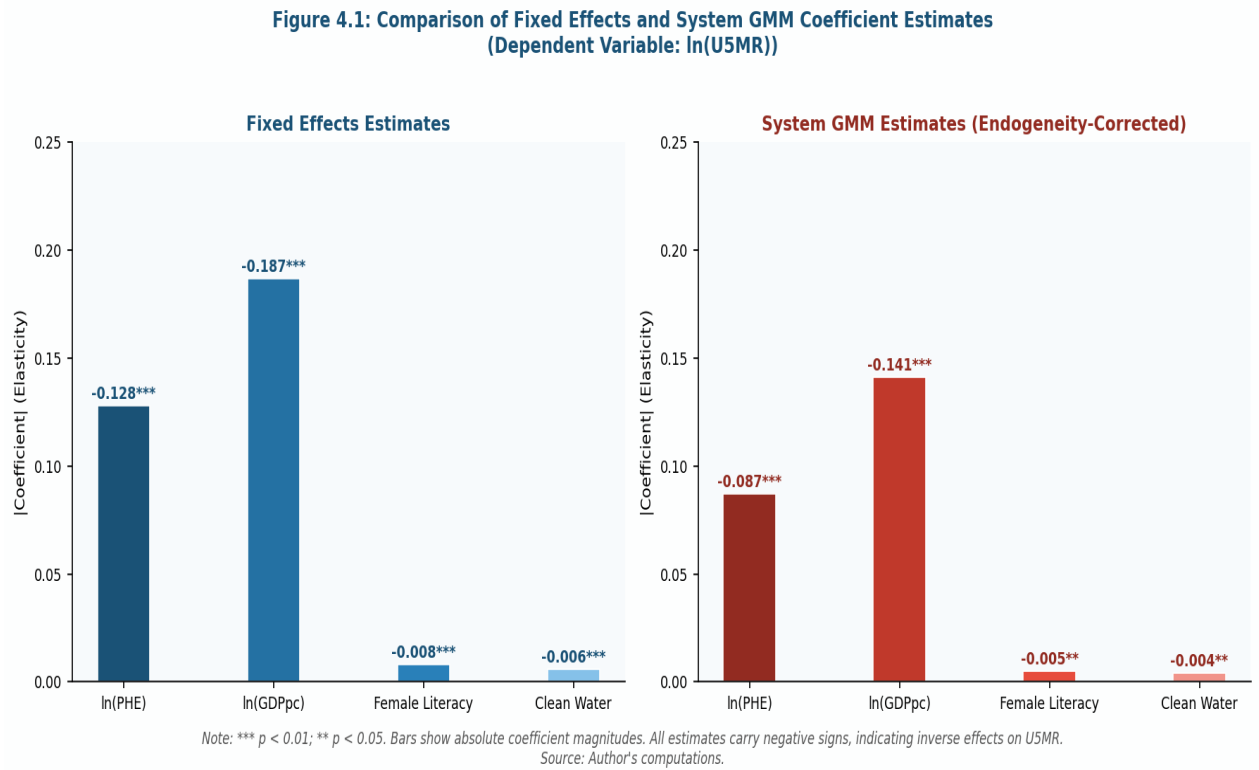
4.7 Comparative Summary of Regression Results

Table 4.6: Comparative Summary, Fixed Effects vs System GMM Results

Variable	FE Coefficient	FE p-value	GMM Coefficient	GMM p-value	Sign Consistent?
ln(PHE)	-0.128	0.000***	-0.087	0.000***	Yes
ln(GDPpc)	-0.187	0.000***	-0.141	0.000***	Yes
EDU (Female literacy)	-0.008	0.000***	-0.005	0.012**	Yes
WAT (Clean water)	-0.006	0.003***	-0.004	0.046**	Yes
Lagged U5MR	N/A	N/A	0.712	0.000***	N/A

Source: Compiled from Tables 4.4 and 4.5.

Figure 4.1: Comparison of Fixed Effects and System GMM Coefficient Estimates



4.8 Discussion of Findings

Findings from the empirical results are the strong support for the hypothesis that the public health expenditure has a significant effect in reducing under five mortality rates to Sub-Saharan Africa. The consistently negative and statistically significant coefficients on health expenditure per capita in both Fixed Effects and System GMM specifications are evidence that government spending on health systems has measurable impacts on child health. The results of this study are in line with the theoretical claims of the Grossman Health Production Function and corroborate earlier empirical studies by Bokhari et al. (2007), Chireshe and Ocran (2020).

However, the relatively modest magnitudes of elasticity observed, especially when the endogeneity bias is corrected for in the System GMM model, lends credence to the argument of Filmer and Pritchett (1999) and Aregbeshola (2020) that there is not a strict proportionality between public health expenditure and child health gains in all SSA

settings. The reduction of the coefficient from -0.128 (FE) to -0.087 (GMM) indicates that there are significant health-enhancing policy returns to public expenditure in many SSA countries, but this is limited by systemic inefficiencies, governance issues and poor complementary social infrastructure.

The importance of economic growth, emphasized by the large and significant coefficient in both models, is highlighted based on its fundamental importance in lowering child mortality. This is consistent with 'wealthier is healthier' theory suggested by Pritchett and Summers (1996) which states that income growth leads to improved child health through increased household spending power and better government health spending power. These highlights further illustrate the multi-dimensionality of determinants of child health in SSA, particularly the importance of female literacy and access to clean water. The findings agree with McGuire (2006) and Schultz (1999) and all point to the need for a comprehensive 'Health-in-All-Policies' approach, in which health financing is coordinated with investment in education and water infrastructure.

4.9 Chapter Summary

The results of the study have been presented and discussed in this chapter. There was significant variation in the child health outcomes and health financing across the 45 countries in SSA in the sample. Fixed Effects estimation showed a negative significant effect of public health expenditures on under-five mortality (elasticity = -0.128) while the other significant determinants were GDP per capita, female education and access to clean water. System GMM confirmed these results, and all of the diagnostic tests showed the model was valid when controlling for endogeneity (elasticity = -0.087). This was followed by a discussion of these findings in the context of the existing theory and empirical literature. The dissertation's summary, conclusions and policy implications are provided in Chapter Five.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Study

This research examined how public health spending affects child health outcomes, in the form of the under-five mortality rate, in Sub-Saharan Africa. Given the unresolved paradox of continued increases in public health spending, coupled with persistently high child mortality rates in many SSA countries, the study aimed to offer methodologically sound evidence of the magnitude, strength, and explanatory power of the link between public health spending and child mortality. Secondary data was used in the analysis for a sample of 45 countries in SSA for the period 1995-2018 from the World Development Indicators (World Bank, 2023), the UNICEF Child Mortality Database and the African Development Bank Statistics Database (2022).

Log-linear empirical models have been estimated in the study, with the Grossman (1972) Health Production Function as the theoretical underpinning of the empirical models. Based on the Hausman specification test, Fixed Effects (FE) estimation was used as the main approach due to the rejection of the Random Effects (RE) model. To control for reverse causality between health expenditure and child mortality, in addition, System GMM was used with a lagged dependent variable to account for dynamic persistence. Some control variables were added to reduce omitted variable bias: GDP per capita, female literacy rate, and access to clean drinking water.

The main findings are summarized below. Similarly, both Fixed Effects (elasticity = -0.128) and System GMM (elasticity = -0.087) specifications show that public health expenditure per capita has a negative and statistically significant impact on under-five mortality. GDP per capita, female literacy and clean water also have a significant negative influence. Model validity is verified through the use of Arellano-Bond AR (2) and Hansen

test. Throughout the analysis, the limitations of the use of an aggregate national panel data set are recognized.

5.2 Conclusions

In the light of the empirical results displayed in Chapter Four the following conclusions are drawn:

The first is that public health spending per capita is very effective at lowering the under-five mortality rate in Sub-Saharan Africa. The relationship between child mortality and an increase in health spending per person is linear, with an 0.87 to 1.28 percent decrease in child mortality rate per 10 percent increase in health spending per capita, depending on the estimator. This association remains even when accounting for endogeneity in the association with System GMM, implying that it is plausible to interpret the association as a causal one, and that sufficient financing of health is an important policy tool to enhance child survival.

Second, effectiveness of public health spending depends on other socioeconomic factors. There are substantial direct impacts from female education and clean water on child mortality. The countries with greater health spending and better education for women and better water infrastructure are benefiting from much higher gains in child health compared to those with just higher health spending. This discovery suggests that the best returns can be achieved from investments in the health sector if they are part of a holistic socioeconomic development process.

Third, income growth (measured by GDP per capita) is the strongest variable in the sample in explaining child mortality decline. This reiterates the value of comprehensive economic development measures, in addition to focused health sector programs.

Fourth, the fact that the health expenditure coefficient was reduced after controlling for endogeneity suggests that part of the impact of health spending on child mortality was due

to reverse causality, underscoring the need to exercise methodological rigour in assessing the effectiveness of health spending.

5.3 Policy Recommendations

Based on the findings of the study, the following policy recommendations are put forward:

Governments in the Sub-Saharan region should continue to allocate adequate resources for public health services, including primary and preventive healthcare, especially for under five populations, and where fiscal space allows, expand funding for such healthcare. High return entry points include maternal and neonatal care, immunisation programmes and nutrition interventions. The Abuja Declaration goal of 15 percent of national budgets to be spent on Health should be reaffirmed by the governments of SSA.

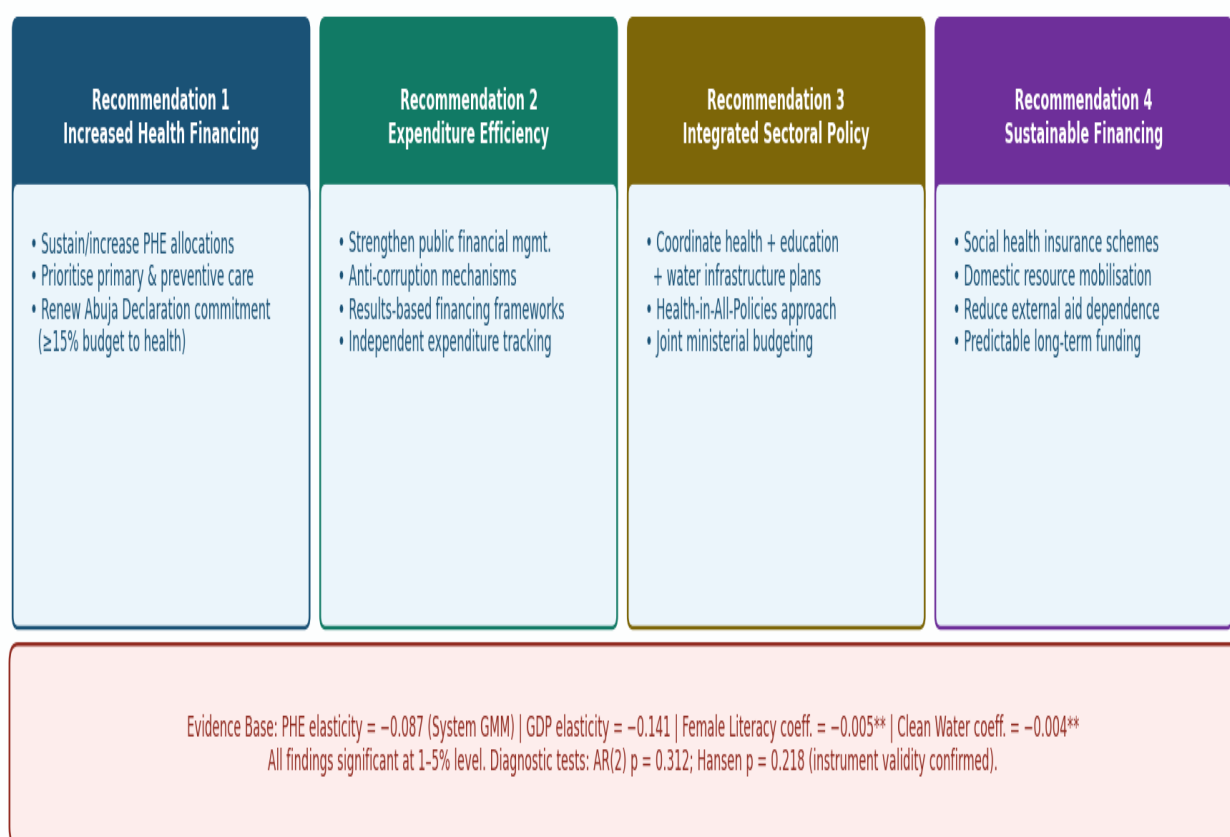
Second, the efficiency of health spending has to be significantly enhanced through improved public financial management, anti-corruption and governance reforms of health systems. The relatively small expenditure elasticities indicate that resource leakage and administrative inefficiencies are restricting returns on health spending in many countries in SSA. These can be tackled using results-based financing and separate expenditure tracking systems.

Third, investments in the education sector and water should be linked to health financing policy. The independent impact of female literacy and access to clean water on child mortality suggests that child mortality cannot be meaningfully changed with policies on health expenditure alone, unless coupled with complementary policies in other sectors. Planning and budgeting processes should be coordinated between ministries of health, education and water.

Fourth, development partners and IFIs should help SSA governments formulate sustainable domestic health financing mechanisms that minimize reliance on external health aid and ensure regular and predictable health financing for the health system, such as social health insurance schemes and domestic resource mobilization strategies.

Figure 5.1: Policy Recommendations Summary Matrix

Figure 5.1: Policy Recommendations Summary Matrix



Source: Author's construction based on empirical findings reported in Chapter Four.

5.4 Limitations of the Study

There are several limitations to this study that should be considered when drawing conclusions from this study.

- i. First, health expenditure allocation and child health outcomes can vary significantly between subnational regions, which can be masked by reliance on national data.
- ii. Second, data quality from World Bank and UNICEF databases is relatively high by cross-country standards, but for countries with less developed statistical capacity, measurement error may impact estimates.
- iii. Third, reverse causality is handled in System GMM but the internal instrument set (lagged variables) may not account for all the sources of endogeneity. This will allow researchers to know where there are good opportunities for future studies.

5.5 Directions for further research.

Based on the results and limitations of the study, there are some promising research areas suggested. Household survey and subnational panel data can be used to analyse distributional impacts of household public health spending by income and across geographic regions within SSA countries. Second, explicit modelling of the role of governance and institutional quality will give a richer understanding of under which conditions health spending is more effective. Third, disease specific analyses, which would look at specific program spending on cause-specific child mortality outcomes, might provide more policy-oriented results. Fourth, future studies might explore the proper mix and distribution of health spending on prevention, care and rehabilitation and how that allocation can yield the greatest child health benefits.

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APPENDIX A: PANEL DATA

iso3	Country	year	U5MR	PHE	GDPpc	EDU	WAT	ln_U5MR	ln_PHE	ln_GDPpc
AGO	Angola	1995	160.61	30.72	585.87	65.98	48.41	5.079	3.4249	6.3731
AGO	Angola	1996	55.17	47.42	945.92	48.83	69.81	4.0104	3.859	6.8522
AGO	Angola	1997	195.56	27.87	1329.85	59.42	36.82	5.2759	3.3276	7.1928
AGO	Angola	1998	210.47	18.6	690.14	50.4	54.38	5.3493	2.9232	6.5369
AGO	Angola	1999	8.1	97.35	4608.43	92.4	77.19	2.0919	4.5783	8.4356
AGO	Angola	2000	34.62	44.65	3503.06	84.47	76.37	3.5444	3.7989	8.1614
AGO	Angola	2001	146.74	9.06	2219.93	51.28	79.56	4.9887	2.2039	7.7052
AGO	Angola	2002	111.92	10.34	215.05	18.64	56.19	4.7178	2.336	5.3709
AGO	Angola	2003	135.4	51.09	756.91	67.32	71.91	4.9082	3.9336	6.6292
AGO	Angola	2004	69.83	38.62	957.19	64.13	42.92	4.2461	3.6538	6.864
AGO	Angola	2005	205.67	11.35	236.08	52.02	74.8	5.3263	2.4292	5.4642
AGO	Angola	2006	197.71	19.52	284.53	36.23	28.79	5.2868	2.9714	5.6508
AGO	Angola	2007	141.9	54.66	974.74	33.92	81.49	4.9551	4.0011	6.8822
AGO	Angola	2008	225.11	18.43	224.45	47.26	60.22	5.4166	2.914	5.4137
AGO	Angola	2009	173.38	13.61	591.24	41.37	61.9	5.1555	2.6108	6.3822
AGO	Angola	2010	69.34	129.65	2605.46	78.89	65.57	4.239	4.8648	7.8654
AGO	Angola	2011	165.63	86.67	1718.77	50.9	65.04	5.1098	4.4621	7.4494
AGO	Angola	2012	61.53	76.14	2665.97	92.4	75.27	4.1195	4.3326	7.8883
AGO	Angola	2013	205.6	40.07	1028.07	37.89	54.14	5.3259	3.6906	6.9354
AGO	Angola	2014	132.81	83.52	1212.24	54.18	60.53	4.8889	4.4251	7.1002
AGO	Angola	2015	122.22	82.32	5207.94	79.08	46.52	4.8058	4.4106	8.5579
AGO	Angola	2016	83.33	71.76	1998.78	51.86	87.54	4.4228	4.2733	7.6003
AGO	Angola	2017	232.58	24.45	173.59	33.79	39.61	5.4492	3.1966	5.1567
AGO	Angola	2018	124.6	49.56	675.03	78.44	58.28	4.8251	3.9032	6.5148
BEN	Benin	1995	103.13	15.75	273.19	35.84	46	4.636	2.7568	5.6102
BEN	Benin	1996	109.11	64.01	1476.3	69.73	75.17	4.6924	4.159	7.2973
BEN	Benin	1997	178.46	7.48	327.89	12.6	28.08	5.1844	2.0122	5.7927
BEN	Benin	1998	165.37	12.89	378.52	41.95	18.3	5.1082	2.5565	5.9363
BEN	Benin	1999	169.08	67.76	3551.6	64.31	74.48	5.1304	4.216	8.1752
BEN	Benin	2000	170.5	46.23	1265.51	43.98	66.8	5.1387	3.8336	7.1432
BEN	Benin	2001	303.5	29.89	595.15	54.66	41.82	5.7154	3.3975	6.3888
BEN	Benin	2002	104.85	30.21	598.68	47.78	43.77	4.6525	3.4082	6.3947
BEN	Benin	2003	96.56	15.79	429.74	46.59	60.55	4.5702	2.7594	6.0632
BEN	Benin	2004	72.91	38.89	1371.5	59.24	48.33	4.2892	3.6607	7.2237
BEN	Benin	2005	185.02	23.03	668.4	17.78	33.89	5.2205	3.1368	6.5049
BEN	Benin	2006	225.24	16.98	158.2	12.6	24.95	5.4172	2.832	5.0639
BEN	Benin	2007	127.79	79.35	1349.1	76.26	81.66	4.8504	4.3739	7.2072

BEN	Benin	2008	70.84	35.82	1310.74	31.52	60.05	4.2604	3.5785	7.1783
BEN	Benin	2009	72.07	62.99	1527.64	54.64	63.88	4.2776	4.143	7.3315
BEN	Benin	2010	187.73	9.41	238.38	29.01	74.11	5.235	2.2418	5.4739
BEN	Benin	2011	195	28.38	473.66	70.75	61.09	5.273	3.3457	6.1605
BEN	Benin	2012	179.31	22.16	551.92	58.27	60.73	5.1891	3.0983	6.3134
BEN	Benin	2013	84.54	23.78	1040.63	52.07	60.67	4.4372	3.1688	6.9476
BEN	Benin	2014	154.92	21.76	955.64	75.01	54.53	5.0429	3.0801	6.8624
BEN	Benin	2015	145.87	24.19	1379.41	47.82	28.85	4.9827	3.1859	7.2294
BEN	Benin	2016	153.87	21.33	570.75	64.38	73.57	5.0361	3.0601	6.347
BEN	Benin	2017	205.05	76.37	786.25	27.46	57.85	5.3233	4.3356	6.6673
BEN	Benin	2018	154.25	24.41	924.91	71.08	60.11	5.0386	3.195	6.8297
BWA	Botswana	1995	189.95	16.84	713.18	41.84	50.98	5.2468	2.8238	6.5697
BWA	Botswana	1996	142.02	5.34	274.48	23.99	59.18	4.956	1.6752	5.6149
BWA	Botswana	1997	159.39	12.42	780.16	48.07	33.62	5.0714	2.5193	6.6595
BWA	Botswana	1998	186.22	17.03	899.88	55.62	48.09	5.2269	2.835	6.8023
BWA	Botswana	1999	22.46	38.96	3547.55	72.38	64.9	3.1117	3.6625	8.174
BWA	Botswana	2000	111.65	108.65	5194.17	87.02	99.6	4.7154	4.6881	8.5553
BWA	Botswana	2001	99.84	34.11	676.7	45.6	74.98	4.6036	3.5296	6.5172
BWA	Botswana	2002	86.63	120.5	2264.36	80.28	43.26	4.4616	4.7916	7.725
BWA	Botswana	2003	115.15	36.69	1075.46	66.06	43.76	4.7462	3.6025	6.9805
BWA	Botswana	2004	253.94	13.38	313.69	32.67	39.41	5.5371	2.5938	5.7484
BWA	Botswana	2005	68.83	45.23	1023.43	55.17	61.48	4.2316	3.8118	6.9309
BWA	Botswana	2006	212.64	17.48	198.86	33.93	23.12	5.3596	2.8611	5.2926
BWA	Botswana	2007	8.1	305.17	5602.38	92.4	99.6	2.0919	5.7209	8.6309
BWA	Botswana	2008	110.46	5.6	269.79	74.92	64.15	4.7047	1.7228	5.5976
BWA	Botswana	2009	149.48	5.47	360.36	57.64	61.79	5.0072	1.6993	5.8871
BWA	Botswana	2010	182.69	13.95	301.95	54.01	40.64	5.2078	2.6355	5.7103
BWA	Botswana	2011	192.49	20.36	294.24	86.42	66.72	5.26	3.0136	5.6844
BWA	Botswana	2012	198.93	33.46	784.74	57.1	50.24	5.293	3.5104	6.6654
BWA	Botswana	2013	109.38	53.21	1446.93	70.8	65.43	4.6948	3.9742	7.2772
BWA	Botswana	2014	100.47	28.47	1396.86	74.26	79.49	4.6099	3.3489	7.242
BWA	Botswana	2015	203.99	42.04	2606	46.85	35.86	5.3181	3.7386	7.8656
BWA	Botswana	2016	121.72	76.25	1763.28	57.7	91.73	4.8017	4.334	7.4749
BWA	Botswana	2017	36.69	70.82	2850.76	68.8	82.22	3.6025	4.2601	7.9553
BWA	Botswana	2018	47.86	122.26	1474.04	78.64	96.4	3.8683	4.8061	7.2958
BFA	Burkina Faso	1995	64.63	62.31	856.61	57.75	52.56	4.1687	4.1321	6.753
BFA	Burkina Faso	1996	175.7	14.44	1223.72	57.77	45.85	5.1688	2.67	7.1097
BFA	Burkina Faso	1997	147.89	48.44	625.29	67.49	43.81	4.9965	3.8803	6.4382
BFA	Burkina Faso	1998	190.86	22.25	320.26	52.5	54.54	5.2515	3.1023	5.7691
BFA	Burkina Faso	1999	103.22	38.06	1126.39	58.01	67.42	4.6369	3.6392	7.0268
BFA	Burkina Faso	2000	149.15	89.5	1365.57	49.12	55.72	5.005	4.4942	7.2193

BFA	Burkina Faso	2001	185.77	4.8	158.2	45.39	28.12	5.2245	1.5686	5.0639
BFA	Burkina Faso	2002	112.46	11.39	500.13	62.01	41.95	4.7226	2.4327	6.2149
BFA	Burkina Faso	2003	172.54	8.94	794.89	25.25	51.04	5.1506	2.1905	6.6782
BFA	Burkina Faso	2004	84.82	32.37	731.76	51.9	57.57	4.4405	3.4772	6.5955
BFA	Burkina Faso	2005	108.25	29.89	450.73	51.94	49.61	4.6844	3.3975	6.1109
BFA	Burkina Faso	2006	106.79	11.04	1025.81	70.93	89.99	4.6709	2.4015	6.9332
BFA	Burkina Faso	2007	42.95	26.47	1679.22	84.02	76.63	3.76	3.276	7.4261
BFA	Burkina Faso	2008	174.9	11.42	312.02	44	69.08	5.1642	2.4354	5.7431
BFA	Burkina Faso	2009	99.91	280.4	1325.26	72.79	63.8	4.6043	5.6362	7.1894
BFA	Burkina Faso	2010	137.7	126.47	1186.79	60.07	68.78	4.9251	4.84	7.079
BFA	Burkina Faso	2011	174.42	16.44	519.53	35.08	50.71	5.1615	2.7997	6.2529
BFA	Burkina Faso	2012	171.73	17.42	1083.08	50.42	32.83	5.1459	2.8576	6.9876
BFA	Burkina Faso	2013	188.89	8.2	194.7	33.08	65.61	5.2412	2.1041	5.2715
BFA	Burkina Faso	2014	129	6.83	403.42	45.27	53.09	4.8598	1.9213	6
BFA	Burkina Faso	2015	103.53	34.53	1604.83	34.93	75.48	4.6399	3.5418	7.3808
BFA	Burkina Faso	2016	130.47	14.04	158.2	28.72	36.53	4.8711	2.6419	5.0639
BFA	Burkina Faso	2017	8.1	71.82	4563.24	85.65	85.16	2.0919	4.2742	8.4258
BFA	Burkina Faso	2018	23.25	18.58	594.39	54.42	55.73	3.1463	2.9221	6.3875
BDI	Burundi	1995	33.01	34	1826.38	67.64	95.17	3.4968	3.5264	7.5101
BDI	Burundi	1996	58.53	58.91	2044.77	78.83	82.05	4.0695	4.076	7.623
BDI	Burundi	1997	168.07	32.14	1440.06	41.42	64.66	5.1244	3.4701	7.2724
BDI	Burundi	1998	65.72	69.46	2555.8	47.62	93.17	4.1854	4.2408	7.8461
BDI	Burundi	1999	107.07	12.8	168.04	32	68.04	4.6735	2.5494	5.1242
BDI	Burundi	2000	238.59	28.79	338.11	48.05	57.89	5.4747	3.36	5.8234
BDI	Burundi	2001	108.79	19.21	854.98	83.2	46.83	4.6894	2.9554	6.7511
BDI	Burundi	2002	194.55	32.97	623.18	58.92	44.97	5.2707	3.4956	6.4348
BDI	Burundi	2003	63.52	50.02	2094.01	47.83	56.59	4.1514	3.9124	7.6468
BDI	Burundi	2004	120.61	11.11	884.16	52.2	72.52	4.7926	2.4078	6.7846
BDI	Burundi	2005	62.23	39.49	2010.45	74.53	78.45	4.1308	3.676	7.6061
BDI	Burundi	2006	110.14	48.54	1118.04	62.84	45.94	4.7018	3.8824	7.0193
BDI	Burundi	2007	202.61	30.64	226.42	42.57	43.68	5.3113	3.4223	5.4224
BDI	Burundi	2008	8.1	70.2	1966.37	60.67	56.76	2.0919	4.2513	7.5839
BDI	Burundi	2009	170.78	80.42	1556.41	60.54	62.56	5.1404	4.3873	7.3501
BDI	Burundi	2010	155.36	58.91	606.95	56.14	33.84	5.0457	4.076	6.4084
BDI	Burundi	2011	90.13	33.96	1653	79.01	81	4.5013	3.5252	7.4103
BDI	Burundi	2012	23.33	122.75	5115.56	72.19	90.46	3.1497	4.8101	8.54
BDI	Burundi	2013	142.38	136.02	1975.74	59.27	95.97	4.9585	4.9128	7.5887
BDI	Burundi	2014	95.2	194.51	484.78	12.6	68.54	4.556	5.2705	6.1837
BDI	Burundi	2015	154.96	9.8	218.24	26.99	40.47	5.0432	2.2824	5.3856
BDI	Burundi	2016	138.43	14.05	1707.97	54.06	76.34	4.9304	2.6426	7.4431
BDI	Burundi	2017	262.32	40.34	411.39	20.57	20.02	5.5696	3.6973	6.0195

BDI	Burundi	2018	117.95	14.62	213.61	42.14	38.38	4.7703	2.6824	5.3642
CPV	Cabo Verde	1995	56.47	18.33	1989.95	69.6	79.84	4.0337	2.9085	7.5959
CPV	Cabo Verde	1996	150.78	18.33	638.09	14.35	18.85	5.0158	2.9085	6.4585
CPV	Cabo Verde	1997	153.97	37.11	1675.77	64.73	64.7	5.0368	3.6139	7.424
CPV	Cabo Verde	1998	243.29	12.9	400.5	22.66	26.56	5.4943	2.5572	5.9927
CPV	Cabo Verde	1999	202.2	11.13	499.53	50.6	52.75	5.3093	2.4096	6.2137
CPV	Cabo Verde	2000	164.7	14.27	641.06	28.64	36.1	5.1041	2.6582	6.4631
CPV	Cabo Verde	2001	251.46	7.46	369.5	35.96	48.91	5.5273	2.0096	5.9122
CPV	Cabo Verde	2002	43.51	28.7	4806.51	77.54	82.65	3.773	3.3569	8.4777
CPV	Cabo Verde	2003	86.56	267.78	5867.87	86.79	99.6	4.4608	5.5902	8.6772
CPV	Cabo Verde	2004	64.07	63.83	736.12	60.74	68.58	4.16	4.1562	6.6014
CPV	Cabo Verde	2005	106.16	75.92	2084.12	63.82	59.47	4.6649	4.3297	7.6421
CPV	Cabo Verde	2006	28.77	43.63	3350.99	54.86	74.53	3.3593	3.7757	8.117
CPV	Cabo Verde	2007	186.52	18.08	1051.57	29.8	33.23	5.2285	2.8948	6.958
CPV	Cabo Verde	2008	119.3	19.11	589.01	42.23	64.43	4.7816	2.9502	6.3784
CPV	Cabo Verde	2009	21.39	8.09	1483.68	69.23	84.41	3.0629	2.0906	7.3023
CPV	Cabo Verde	2010	57.09	17.45	1625.21	58.45	99.6	4.0446	2.8593	7.3934
CPV	Cabo Verde	2011	161.3	5.87	1447.51	68.12	53.49	5.0833	1.7699	7.2776
CPV	Cabo Verde	2012	202.44	4.8	158.2	22.2	34.14	5.3104	1.5686	5.0639
CPV	Cabo Verde	2013	293.28	4.8	158.2	12.6	18.3	5.6811	1.5686	5.0639
CPV	Cabo Verde	2014	303.5	17.04	186.85	14.79	29.37	5.7154	2.8356	5.2303
CPV	Cabo Verde	2015	169.21	22.92	492.96	49.18	60.13	5.1311	3.132	6.2004
CPV	Cabo Verde	2016	59.13	146.83	1707.64	74.49	75.62	4.0797	4.9893	7.4429
CPV	Cabo Verde	2017	8.1	137.15	868.92	92.4	99.6	2.0919	4.9211	6.7673
CPV	Cabo Verde	2018	157.71	48.35	787.05	41.76	47.99	5.0608	3.8785	6.6683
CMR	Cameroon	1995	72.98	22.87	1261.53	62.81	84.84	4.2902	3.1298	7.1401
CMR	Cameroon	1996	104.15	57.54	1070.98	66.79	76.02	4.6458	4.0525	6.9763
CMR	Cameroon	1997	88.73	75.71	5257.39	79.65	79.93	4.4856	4.3269	8.5674
CMR	Cameroon	1998	125.68	20.38	758.26	46.05	55.09	4.8337	3.0146	6.631
CMR	Cameroon	1999	220.3	25.87	1132.89	27.12	87.18	5.395	3.2531	7.0325
CMR	Cameroon	2000	149.03	43.23	1149.12	49.3	48.93	5.0041	3.7665	7.0468
CMR	Cameroon	2001	124.28	21.04	1230.47	42.81	66.46	4.8225	3.0464	7.1152
CMR	Cameroon	2002	55.51	21.67	1266	38.11	56.05	4.0166	3.0759	7.1436
CMR	Cameroon	2003	8.1	29.48	3481.82	68.6	99.6	2.0919	3.3837	8.1553
CMR	Cameroon	2004	98.59	42.12	1279.76	45.95	78.86	4.591	3.7405	7.1544
CMR	Cameroon	2005	132.5	40.13	1366.04	69.81	56.78	4.8866	3.6921	7.2197
CMR	Cameroon	2006	275.34	5.9	242.65	38.11	46.1	5.618	1.775	5.4916
CMR	Cameroon	2007	146.93	28.44	685.68	37.03	60.07	4.99	3.3478	6.5304
CMR	Cameroon	2008	213.78	27.34	726.97	42.75	43.9	5.3649	3.3084	6.5889
CMR	Cameroon	2009	97.57	65.04	5528.34	50.59	85.93	4.5806	4.175	8.6176
CMR	Cameroon	2010	43.81	202.04	3071.67	69.77	86.17	3.7799	5.3085	8.03

CMR	Cameroon		2011	61.05	143.27	3513	83.96	84.89	4.1117	4.9647	8.1642
CMR	Cameroon		2012	79.86	20.09	1891.92	81.14	73.95	4.3803	3.0002	7.5453
CMR	Cameroon		2013	303.5	35.25	823.15	30.33	49.11	5.7154	3.5625	6.7131
CMR	Cameroon		2014	72.32	30.93	1205.79	80.2	76.5	4.2811	3.4317	7.0949
CMR	Cameroon		2015	202.47	43.39	199.65	12.6	41.33	5.3106	3.7702	5.2966
CMR	Cameroon		2016	65.92	52.38	2167.33	51.55	62.68	4.1884	3.9585	7.6813
CMR	Cameroon		2017	209.76	12.77	158.2	36.21	65.83	5.346	2.5471	5.0639
CMR	Cameroon		2018	166.9	5.65	739.84	76.29	44.37	5.1174	1.7317	6.6064
	Central	African									
CAF	Republic		1995	124.44	28.47	988.94	65.06	71.27	4.8238	3.3489	6.8966
	Central	African									
CAF	Republic		1996	133.52	8.75	829.45	53.39	55.32	4.8943	2.1691	6.7208
	Central	African									
CAF	Republic		1997	85.38	93.92	1192.3	28.37	90.45	4.4471	4.5424	7.0836
	Central	African									
CAF	Republic		1998	171.7	78.94	502.34	14.31	35.86	5.1457	4.3687	6.2193
	Central	African									
CAF	Republic		1999	101.04	20.35	979.13	60.85	54.78	4.6155	3.0131	6.8867
	Central	African									
CAF	Republic		2000	40.62	75.71	2157.6	67.6	62.95	3.7043	4.3269	7.6768
	Central	African									
CAF	Republic		2001	36.52	34.14	1128.41	48.19	75.32	3.5979	3.5305	7.0286
	Central	African									
CAF	Republic		2002	150.25	16.41	629.41	50.82	36.71	5.0123	2.7979	6.4448
	Central	African									
CAF	Republic		2003	260.54	23.08	2043.37	57.15	48.18	5.5628	3.139	7.6224
	Central	African									
CAF	Republic		2004	149.26	26.55	1237.92	72.88	32.83	5.0057	3.279	7.1212
	Central	African									
CAF	Republic		2005	127.42	129.47	3488.77	74.64	77.81	4.8475	4.8634	8.1573
	Central	African									
CAF	Republic		2006	159.13	17.32	954.82	73.38	55.13	5.0697	2.8519	6.8615
	Central	African									
CAF	Republic		2007	239.12	32.21	1290.88	51.85	31.84	5.477	3.4723	7.1631
	Central	African									
CAF	Republic		2008	153.92	28.64	704.07	49.24	74.12	5.0364	3.3548	6.5569
	Central	African									
CAF	Republic		2009	104.5	71.4	492.41	67.8	44.51	4.6492	4.2683	6.1993
	Central	African									
CAF	Republic		2010	223.46	11.26	314.97	20.51	53.82	5.4092	2.4213	5.7525

	Central	African									
CAF	Republic		2011	170.34	22.64	1020.04	92.4	55.97	5.1378	3.1197	6.9276
	Central	African									
CAF	Republic		2012	257.14	11.57	174.91	32.39	61.91	5.5496	2.4484	5.1643
	Central	African									
CAF	Republic		2013	151.09	13.81	494.88	52.83	67.43	5.0179	2.6254	6.2043
	Central	African									
CAF	Republic		2014	40.71	101.05	1721.14	78.99	63.36	3.7065	4.6156	7.4507
	Central	African									
CAF	Republic		2015	29.44	108.46	6533.58	92.4	79.25	3.3824	4.6864	8.7847
	Central	African									
CAF	Republic		2016	266.17	19.17	575.89	52.46	56.32	5.5841	2.9533	6.3559
	Central	African									
CAF	Republic		2017	271.87	39.29	765.73	17.89	39.05	5.6053	3.671	6.6408
	Central	African									
CAF	Republic		2018	122.64	106.08	2527.53	91.11	72.98	4.8093	4.6642	7.835
TCD	Chad		1995	106.67	27.44	938.36	52.64	83.08	4.6697	3.312	6.8441
TCD	Chad		1996	251.31	17.85	435.39	39.49	33.52	5.5267	2.882	6.0762
TCD	Chad		1997	49.92	33.68	709.75	38.99	66.64	3.9104	3.5169	6.5649
TCD	Chad		1998	66.56	50.3	456.62	61.18	79.94	4.1981	3.918	6.1239
TCD	Chad		1999	187.16	12.91	485.53	33.56	61.77	5.232	2.558	6.1852
TCD	Chad		2000	105.78	137.22	2636.83	72.46	71.87	4.6614	4.9216	7.8773
TCD	Chad		2001	136.32	40.22	2013.21	60.39	62.75	4.915	3.6944	7.6075
TCD	Chad		2002	123.9	27.53	2158.86	92.4	48.28	4.8195	3.3153	7.6773
TCD	Chad		2003	163.19	64.7	2776.67	92.4	57.4	5.0949	4.1698	7.929
TCD	Chad		2004	247.08	4.8	158.2	18.18	35.62	5.5097	1.5686	5.0639
TCD	Chad		2005	143.82	5.64	293.12	41.87	49.33	4.9686	1.7299	5.6806
TCD	Chad		2006	187.21	39.6	1039.36	47.34	58.07	5.2322	3.6788	6.9464
TCD	Chad		2007	8.1	98.85	10241.6	92.4	99.6	2.0919	4.5936	9.2342
TCD	Chad		2008	132.9	37.63	2305.66	61.5	50.4	4.8896	3.6278	7.7431
TCD	Chad		2009	70.6	16.52	1653.11	60.54	67.45	4.257	2.8046	7.4104
TCD	Chad		2010	41.15	58.08	1536.96	84.53	81.16	3.7172	4.0618	7.3376
TCD	Chad		2011	67.86	244.67	2136.78	63.07	64.77	4.2174	5.4999	7.6671
TCD	Chad		2012	110.52	69.98	2378.08	68.43	93.54	4.7052	4.2482	7.774
TCD	Chad		2013	208.54	20.57	274.11	12.6	54.92	5.3401	3.0238	5.6135
TCD	Chad		2014	32.72	44.16	1512.81	80.55	82.41	3.488	3.7878	7.3217
TCD	Chad		2015	139.12	21.44	679.18	82.23	91.2	4.9353	3.0653	6.5209
TCD	Chad		2016	98.76	7.09	1228.43	72.56	45.79	4.5927	1.9587	7.1135
TCD	Chad		2017	111.03	44.23	980.34	81.43	69.01	4.7098	3.7894	6.8879
TCD	Chad		2018	215.35	33.72	160	15.74	44.6	5.3723	3.5181	5.0752
COM	Comoros		1995	178.91	6.25	425.71	46.33	37.45	5.1869	1.8326	6.0538

COM	Comoros	1996	241.59	8.33	185.54	13.35	40.52	5.4872	2.1199	5.2233
COM	Comoros	1997	124.61	12.88	612.57	47.73	42.06	4.8252	2.5557	6.4177
COM	Comoros	1998	82.15	20.34	878.43	71.15	79	4.4085	3.0126	6.7781
COM	Comoros	1999	119.17	35.42	881.68	58.04	79.58	4.7806	3.5673	6.7818
COM	Comoros	2000	155.73	4.9	492.93	23.72	54.01	5.0481	1.5892	6.2004
COM	Comoros	2001	150.57	44.44	418.1	24.67	23.73	5.0144	3.7941	6.0357
COM	Comoros	2002	51.69	100.59	1800.55	48.63	58.11	3.9453	4.6111	7.4958
COM	Comoros	2003	143.82	23.26	1089.97	64.61	71.91	4.9686	3.1467	6.9939
COM	Comoros	2004	154.62	4.8	190.54	67.32	52.43	5.041	1.5686	5.2499
COM	Comoros	2005	303.5	4.8	158.2	25.49	18.3	5.7154	1.5686	5.0639
COM	Comoros	2006	283.88	28.25	617.08	12.6	57.8	5.6486	3.3411	6.425
COM	Comoros	2007	69.82	5.18	917.71	82.24	72.69	4.2459	1.6448	6.8219
COM	Comoros	2008	114.19	26.59	887.35	71.53	53.9	4.7379	3.2805	6.7882
COM	Comoros	2009	21.97	26.28	459.2	31.72	78.88	3.0897	3.2688	6.1295
COM	Comoros	2010	90.4	79.51	2662.61	67.16	64.11	4.5042	4.3759	7.8871
COM	Comoros	2011	161.47	14.59	208.95	53.22	40.49	5.0843	2.6803	5.3421
COM	Comoros	2012	231.27	21.11	555.34	50.92	55.26	5.4436	3.0497	6.3196
COM	Comoros	2013	79.55	70.89	1069.9	41.39	92.67	4.3764	4.2611	6.9753
COM	Comoros	2014	85.43	188.73	1472.15	75.36	98.1	4.4477	5.2403	7.2945
COM	Comoros	2015	8.1	84.46	2543.69	47.04	86.66	2.0919	4.4363	7.8414
COM	Comoros	2016	123.97	44.36	1018.13	54.34	70.55	4.82	3.7923	6.9257
COM	Comoros	2017	53.42	16.44	657.33	75.61	82.05	3.9782	2.7997	6.4882
COM	Comoros	2018	95.21	104.76	2804.89	72.59	56.43	4.5561	4.6517	7.9391
COG	Congo, Rep.	1995	67.97	26.53	877.5	52.3	76.56	4.2191	3.2783	6.7771
COG	Congo, Rep.	1996	129.33	20.11	1281.27	73.82	55.96	4.8624	3.0012	7.1556
COG	Congo, Rep.	1997	8.1	78.55	3199.25	92.4	92.93	2.0919	4.3637	8.0707
COG	Congo, Rep.	1998	21.69	19.36	805.17	83.19	72	3.0769	2.9632	6.6911
COG	Congo, Rep.	1999	303.5	10.95	158.2	34.47	40.66	5.7154	2.3933	5.0639
COG	Congo, Rep.	2000	35.77	133.78	1182.51	83.85	79.78	3.5771	4.8962	7.0754
COG	Congo, Rep.	2001	50.72	69.94	2374.71	85.11	33.91	3.9263	4.2476	7.7726
COG	Congo, Rep.	2002	280.75	4.8	158.2	22.95	33.32	5.6375	1.5686	5.0639
COG	Congo, Rep.	2003	303.5	5.35	158.2	12.6	22.96	5.7154	1.6771	5.0639
COG	Congo, Rep.	2004	44.86	104.61	1877.14	67.69	83.4	3.8035	4.6502	7.5375
COG	Congo, Rep.	2005	107.85	8.13	306.71	25.18	50.7	4.6807	2.0956	5.7259
COG	Congo, Rep.	2006	163.5	10.43	1092.69	39.99	81.53	5.0968	2.3447	6.9964
COG	Congo, Rep.	2007	272.27	23.04	158.2	19.6	38.93	5.6068	3.1372	5.0639
COG	Congo, Rep.	2008	59.34	64.57	819.32	64.2	76.63	4.0833	4.1677	6.7085
COG	Congo, Rep.	2009	117.49	47.82	2271.94	90.5	90.3	4.7664	3.8674	7.7284
COG	Congo, Rep.	2010	197.67	86.4	2425.48	62.04	69.14	5.2866	4.459	7.7938
COG	Congo, Rep.	2011	170.81	34.22	519.88	62.11	43.6	5.1406	3.5328	6.2536
COG	Congo, Rep.	2012	107.23	62.68	1019.39	76.3	32.48	4.675	4.138	6.927

COG	Congo, Rep.	2013	126.23	284.92	4109.09	71.19	68.09	4.8381	5.6522	8.321
COG	Congo, Rep.	2014	28.91	54.37	523.82	66.77	82.04	3.3642	3.9958	6.2611
COG	Congo, Rep.	2015	118.04	18.02	254.75	37.84	47.91	4.771	2.8915	5.5403
COG	Congo, Rep.	2016	115.83	49	1053.32	79.75	80.92	4.7521	3.8918	6.9597
COG	Congo, Rep.	2017	154.92	37.42	2156.44	74.24	70.36	5.0429	3.6222	7.6762
COG	Congo, Rep.	2018	93.18	26.75	787.15	38.21	81.08	4.5345	3.2865	6.6684
COD	Congo, Dem. Rep.	1995	173.69	10.04	442.28	46.2	47.79	5.1573	2.3066	6.0919
COD	Congo, Dem. Rep.	1996	216.13	108.78	2204.61	86.25	72.92	5.3759	4.6893	7.6983
COD	Congo, Dem. Rep.	1997	148.91	35.7	2970.2	65.56	76.43	5.0033	3.5752	7.9964
COD	Congo, Dem. Rep.	1998	164.3	13.66	368.47	49.41	75.43	5.1017	2.6145	5.9094
COD	Congo, Dem. Rep.	1999	140.89	60.67	1212.99	67.36	39.92	4.948	4.1054	7.1008
COD	Congo, Dem. Rep.	2000	136.73	27.43	2338.38	50.09	58.88	4.918	3.3116	7.7572
COD	Congo, Dem. Rep.	2001	80.14	36.57	530.38	61.52	77.75	4.3838	3.5992	6.2736
COD	Congo, Dem. Rep.	2002	161.54	39.42	1596.13	38.25	83.11	5.0848	3.6743	7.3753
COD	Congo, Dem. Rep.	2003	129.09	11.2	305.8	32.91	55.58	4.8605	2.4159	5.7229
COD	Congo, Dem. Rep.	2004	300.85	12.34	270.4	45.23	34.21	5.7066	2.5128	5.5999
COD	Congo, Dem. Rep.	2005	260.09	57.8	593.9	46.89	59.29	5.561	4.057	6.3867
COD	Congo, Dem. Rep.	2006	166.97	35.1	475.23	40.74	66.38	5.1178	3.5582	6.1638
COD	Congo, Dem. Rep.	2007	76.89	33.9	703.39	64.03	61.74	4.3424	3.5234	6.5559
COD	Congo, Dem. Rep.	2008	49.5	37.1	1712.32	68.6	80.04	3.902	3.6136	7.4456
COD	Congo, Dem. Rep.	2009	230.12	11.07	592.2	43.01	66.15	5.4386	2.4042	6.3838
COD	Congo, Dem. Rep.	2010	157.32	21.08	612.86	59.39	86.63	5.0583	3.0483	6.4181
COD	Congo, Dem. Rep.	2011	174.37	16.9	565.73	35.25	63.21	5.1612	2.8273	6.3381
COD	Congo, Dem. Rep.	2012	8.1	165.76	5501.2	88.29	90.85	2.0919	5.1105	8.6127
COD	Congo, Dem. Rep.	2013	209.44	4.8	158.2	21.64	37.11	5.3444	1.5686	5.0639
COD	Congo, Dem. Rep.	2014	172.35	46.43	1400.98	32.94	65.88	5.1495	3.8379	7.2449
COD	Congo, Dem. Rep.	2015	49.65	41.05	2452.26	59.29	73.74	3.905	3.7148	7.8048
COD	Congo, Dem. Rep.	2016	99.75	52.76	6061.34	92.4	86.81	4.6027	3.9658	8.7097
COD	Congo, Dem. Rep.	2017	157.4	10.45	371.87	48.94	37.33	5.0588	2.3466	5.9185
COD	Congo, Dem. Rep.	2018	140.83	84.57	1119.62	37.1	79.75	4.9476	4.4376	7.0207
CIV	Cote d'Ivoire	1995	113.81	95.91	2720.64	46.21	51.85	4.7345	4.5634	7.9086
CIV	Cote d'Ivoire	1996	128.61	68.59	2198.96	64.95	62.97	4.8568	4.2281	7.6957
CIV	Cote d'Ivoire	1997	116.96	10.21	406.17	71.59	62.48	4.7618	2.3234	6.0068
CIV	Cote d'Ivoire	1998	148.68	53.53	880.77	51.41	90.26	5.0018	3.9802	6.7808
CIV	Cote d'Ivoire	1999	252.1	18.21	532.55	60.7	43.04	5.5298	2.902	6.2777
CIV	Cote d'Ivoire	2000	8.1	34.6	1510.89	82.29	76.56	2.0919	3.5439	7.3205
CIV	Cote d'Ivoire	2001	118.15	33.52	796.89	62.73	55.73	4.772	3.5121	6.6807
CIV	Cote d'Ivoire	2002	150.56	36.36	947.23	33.85	82.18	5.0144	3.5935	6.8535
CIV	Cote d'Ivoire	2003	159.93	39.67	1584.89	75.03	24.02	5.0747	3.6806	7.3683
CIV	Cote d'Ivoire	2004	107.56	42.5	847.29	51.66	48.51	4.678	3.7495	6.742
CIV	Cote d'Ivoire	2005	8.1	100.99	1090.24	82.14	99.6	2.0919	4.615	6.9942

CIV	Cote d'Ivoire	2006	162.44	81.45	433.69	32.35	61.42	5.0903	4.4	6.0723
CIV	Cote d'Ivoire	2007	272.16	30.54	227.31	31.61	22.04	5.6064	3.419	5.4263
CIV	Cote d'Ivoire	2008	16.45	7.05	346.9	58.19	65.66	2.8003	1.953	5.849
CIV	Cote d'Ivoire	2009	204.45	14.32	397.03	37.77	48.87	5.3203	2.6617	5.984
CIV	Cote d'Ivoire	2010	110.96	31.52	513.6	57.05	73.98	4.7092	3.4506	6.2414
CIV	Cote d'Ivoire	2011	131.91	7.58	295.62	37.79	79.66	4.8821	2.0255	5.6891
CIV	Cote d'Ivoire	2012	54.16	58.17	1162.08	54.61	76.47	3.9919	4.0634	7.058
CIV	Cote d'Ivoire	2013	110.5	98.45	1410.09	88.34	64.85	4.705	4.5895	7.2514
CIV	Cote d'Ivoire	2014	238.66	6.05	502.59	56.51	60.4	5.475	1.8001	6.2198
CIV	Cote d'Ivoire	2015	182.41	28.33	992.81	40.92	45.26	5.2063	3.3439	6.9005
CIV	Cote d'Ivoire	2016	272.55	5.45	193.55	35.12	21.35	5.6078	1.6956	5.2655
CIV	Cote d'Ivoire	2017	229.04	9.04	234.82	20.26	18.3	5.4339	2.2017	5.4588
CIV	Cote d'Ivoire	2018	171.15	76.78	937	34.85	32.74	5.1425	4.3409	6.8427
GNQ	Equatorial Guinea	1995	273.46	7.31	267.28	46.3	27.19	5.6112	1.9892	5.5883
GNQ	Equatorial Guinea	1996	171.14	33.96	1099.18	28.19	37.57	5.1425	3.5252	7.0023
GNQ	Equatorial Guinea	1997	201.64	4.8	158.2	42.26	46.99	5.3065	1.5686	5.0639
GNQ	Equatorial Guinea	1998	113.47	157.82	2320.71	64.88	53.75	4.7315	5.0615	7.7496
GNQ	Equatorial Guinea	1999	141.94	46.82	337	40.21	18.3	4.9554	3.8463	5.8201
GNQ	Equatorial Guinea	2000	82.03	38.18	1437.25	71.49	56.17	4.4071	3.6423	7.2705
GNQ	Equatorial Guinea	2001	214.31	27.35	888.12	58.32	48.23	5.3674	3.3087	6.7891
GNQ	Equatorial Guinea	2002	44.33	18.63	899.35	49.08	59.12	3.7917	2.9248	6.8017
GNQ	Equatorial Guinea	2003	198.06	50.01	2375.22	73.5	87.84	5.2886	3.9122	7.7728
GNQ	Equatorial Guinea	2004	121.77	25.67	523.26	51.77	50.15	4.8021	3.2453	6.2601
GNQ	Equatorial Guinea	2005	228.56	13.21	420.01	19.19	56.07	5.4318	2.581	6.0403
GNQ	Equatorial Guinea	2006	195.6	13.26	425.71	38.98	48.85	5.2761	2.5848	6.0538
GNQ	Equatorial Guinea	2007	279.48	6.79	196.27	47.66	38.03	5.6329	1.9155	5.2795
GNQ	Equatorial Guinea	2008	194.02	34.78	672.13	73.96	45.91	5.268	3.549	6.5105
GNQ	Equatorial Guinea	2009	13.46	88.54	2877.45	90.06	84.46	2.5997	4.4835	7.9647
GNQ	Equatorial Guinea	2010	131.47	52.48	1922.77	46.05	53.57	4.8788	3.9604	7.5615
GNQ	Equatorial Guinea	2011	44.82	57.24	4082.7	88.01	86.31	3.8027	4.0473	8.3145
GNQ	Equatorial Guinea	2012	96.08	60.42	1507.05	78.12	68.86	4.5652	4.1013	7.3179
GNQ	Equatorial Guinea	2013	255.22	9.19	431.96	48.56	31.17	5.5421	2.2181	6.0683
GNQ	Equatorial Guinea	2014	186.71	125.79	962.75	65.23	75.52	5.2296	4.8346	6.8698
GNQ	Equatorial Guinea	2015	81.92	12.55	1114.27	67.3	75.25	4.4057	2.5297	7.016
GNQ	Equatorial Guinea	2016	57.23	145.33	1843.02	69.27	69.36	4.0471	4.979	7.5192
GNQ	Equatorial Guinea	2017	139.29	88.24	2775.24	59.15	71.18	4.9366	4.4801	7.9285
GNQ	Equatorial Guinea	2018	41.33	29.8	4766.18	52.17	76.97	3.7216	3.3945	8.4693
ERI	Eritrea	1995	84.1	261.29	3152.97	80.26	65.95	4.432	5.5656	8.0561
ERI	Eritrea	1996	161.18	55.97	307.83	44.02	53.56	5.0825	4.0248	5.7295
ERI	Eritrea	1997	227.31	34.26	445.81	48.97	39.82	5.4263	3.534	6.0999
ERI	Eritrea	1998	184.45	21.79	1187.87	33.67	40.87	5.2174	3.0815	7.0799

ERI	Eritrea	1999	8.1	90.49	4887.22	92.4	70.28	2.0919	4.5052	8.4944
ERI	Eritrea	2000	160.59	21.35	752.97	83.59	57.79	5.0789	3.0611	6.624
ERI	Eritrea	2001	142.37	39.36	1727.02	63.83	74.83	4.9584	3.6728	7.4542
ERI	Eritrea	2002	169.17	73.25	1553.86	58.61	52.65	5.1309	4.2939	7.3485
ERI	Eritrea	2003	263.45	14.04	648.56	46.31	84.63	5.5739	2.6419	6.4748
ERI	Eritrea	2004	8.1	45.6	3893.94	92.4	99.6	2.0919	3.8199	8.2672
ERI	Eritrea	2005	90.37	80.81	4265.46	61.34	95.39	4.5039	4.3921	8.3583
ERI	Eritrea	2006	183.05	45.11	1057.55	57.01	71.1	5.2098	3.8091	6.9637
ERI	Eritrea	2007	12.71	122.64	5365.86	73.66	99.6	2.5424	4.8093	8.5878
ERI	Eritrea	2008	252.45	23.89	377.53	27.54	30.32	5.5312	3.1735	5.9337
ERI	Eritrea	2009	165.6	19.6	434.55	43.57	18.3	5.1096	2.9755	6.0743
ERI	Eritrea	2010	203.1	8.84	897.65	70.89	50.8	5.3137	2.1793	6.7998
ERI	Eritrea	2011	91.95	20.51	1000.3	88.14	79.74	4.5212	3.0209	6.9081
ERI	Eritrea	2012	200.53	5.11	411.15	47.52	51.43	5.301	1.6312	6.019
ERI	Eritrea	2013	220.5	19.94	510.76	36.13	51.94	5.3959	2.9927	6.2359
ERI	Eritrea	2014	154.98	24.58	517.34	86.58	82.14	5.0433	3.2019	6.2487
ERI	Eritrea	2015	155.1	18.44	626.42	42.67	61.34	5.0441	2.9145	6.44
ERI	Eritrea	2016	157.92	4.8	487.85	36.39	63.2	5.0621	1.5686	6.19
ERI	Eritrea	2017	69.03	17.81	1256.46	36.15	51.5	4.2345	2.8798	7.1361
ERI	Eritrea	2018	125.15	80.02	575.47	73.33	47.77	4.8295	4.3823	6.3552
ETH	Ethiopia	1995	124.76	19.11	647.3	67.38	86.87	4.8264	2.9502	6.4728
ETH	Ethiopia	1996	166.78	32.29	2157.52	92.4	73.1	5.1167	3.4748	7.6767
ETH	Ethiopia	1997	215.12	5.6	225.83	12.6	29.14	5.3712	1.7228	5.4198
ETH	Ethiopia	1998	53.72	171.9	1132.83	88.02	67.81	3.9838	5.1469	7.0325
ETH	Ethiopia	1999	126.92	28.6	2604.82	69.56	60.78	4.8436	3.3534	7.8651
ETH	Ethiopia	2000	252.88	16.52	546.79	53.02	37.42	5.5329	2.8046	6.3041
ETH	Ethiopia	2001	78.42	294.03	3543.33	50.79	55.92	4.3621	5.6837	8.1728
ETH	Ethiopia	2002	72.25	160.34	2253.86	92.4	57.74	4.2801	5.0773	7.7204
ETH	Ethiopia	2003	152.58	20.9	1241.15	70.07	61.27	5.0277	3.0397	7.1238
ETH	Ethiopia	2004	202.93	11.6	288.16	35.85	36.88	5.3129	2.451	5.6635
ETH	Ethiopia	2005	137.62	22.9	1448.77	70.83	83.15	4.9245	3.1311	7.2785
ETH	Ethiopia	2006	240.92	21.46	610.88	30.57	50.51	5.4845	3.0662	6.4149
ETH	Ethiopia	2007	203.9	17.04	545.92	34.91	53.24	5.3176	2.8356	6.3025
ETH	Ethiopia	2008	202.73	13.62	462.52	34.79	37.11	5.3119	2.6115	6.1367
ETH	Ethiopia	2009	180.17	71.41	1001.87	24.39	52.16	5.1939	4.2684	6.9096
ETH	Ethiopia	2010	303.5	7.44	326.79	42.46	42.53	5.7154	2.0069	5.7893
ETH	Ethiopia	2011	120.63	213.09	1568.64	82.63	83.09	4.7927	5.3617	7.358
ETH	Ethiopia	2012	8.1	98.68	1337.41	61.35	78.03	2.0919	4.5919	7.1985
ETH	Ethiopia	2013	262.51	51.28	898.03	51.37	66.76	5.5703	3.9373	6.8002
ETH	Ethiopia	2014	100.83	51.53	1945.94	63.09	70.78	4.6134	3.9422	7.5735
ETH	Ethiopia	2015	145.18	61.11	1581.86	66.72	78.38	4.978	4.1127	7.3664

ETH	Ethiopia	2016	239.4	8.05	344.97	25.74	34.19	5.4781	2.0857	5.8435
ETH	Ethiopia	2017	11.09	36.92	1458.71	56.68	48.31	2.406	3.6088	7.2853
ETH	Ethiopia	2018	38.58	87.2	3731.48	92.4	89.65	3.6527	4.4682	8.2246
GAB	Gabon	1995	11.16	162.15	3635.93	80.93	96.64	2.4123	5.0885	8.1986
GAB	Gabon	1996	74.45	48.2	1128.93	92.4	84.02	4.3101	3.8754	7.029
GAB	Gabon	1997	171.19	8.33	321.86	40.77	56.01	5.1428	2.1199	5.7741
GAB	Gabon	1998	177.82	7.49	1109.55	39.4	50.09	5.1808	2.0136	7.0117
GAB	Gabon	1999	158.38	8.15	158.2	51.45	36.45	5.065	2.098	5.0639
GAB	Gabon	2000	25.95	15.93	1408.93	78.64	85.35	3.2562	2.7682	7.2506
GAB	Gabon	2001	8.1	118.9	1595.06	87.83	93.52	2.0919	4.7783	7.3747
GAB	Gabon	2002	140.98	71.73	1254.18	77.97	59.24	4.9486	4.2729	7.1342
GAB	Gabon	2003	99.73	38.56	921.53	48.19	80.67	4.6025	3.6522	6.826
GAB	Gabon	2004	172.74	4.8	158.2	20.93	24.71	5.1518	1.5686	5.0639
GAB	Gabon	2005	191.76	17.35	633.11	44.01	43.89	5.2562	2.8536	6.4506
GAB	Gabon	2006	147.56	24.32	598.98	29.24	78.55	4.9942	3.1913	6.3952
GAB	Gabon	2007	196.32	105.49	380.54	37.02	62.98	5.2797	4.6586	5.9416
GAB	Gabon	2008	154.69	8.17	661.87	70.8	54.62	5.0414	2.1005	6.4951
GAB	Gabon	2009	178.28	16.27	1181.44	58.77	63.89	5.1834	2.7893	7.0745
GAB	Gabon	2010	81.47	174.83	6486.24	62.18	81.93	4.4002	5.1638	8.7774
GAB	Gabon	2011	122.64	47.52	1443.6	37.56	21.55	4.8093	3.8612	7.2749
GAB	Gabon	2012	152.15	42.18	989.64	81.59	51.98	5.0249	3.7419	6.8973
GAB	Gabon	2013	201.06	20.75	1131.59	51.47	55.58	5.3036	3.0325	7.0314
GAB	Gabon	2014	105.85	48.64	3349.95	63.04	67.68	4.662	3.8844	8.1167
GAB	Gabon	2015	177.58	41.8	1619.6	54.87	65.17	5.1794	3.7329	7.3899
GAB	Gabon	2016	115.88	18.13	435.03	24.84	70.99	4.7526	2.8976	6.0754
GAB	Gabon	2017	127.5	64.75	1511.59	84.81	66.06	4.8481	4.1705	7.3209
GAB	Gabon	2018	201.76	6.25	368.45	32.97	30.28	5.3071	1.8326	5.9093
GMB	Gambia	1995	8.1	118.75	1316.73	92.4	89.83	2.0919	4.777	7.1829
GMB	Gambia	1996	35.06	71.34	2857.94	77.75	76.25	3.5571	4.2675	7.9579
GMB	Gambia	1997	20.5	41.78	6475.52	92.4	89.41	3.0204	3.7324	8.7758
GMB	Gambia	1998	8.1	108.34	5718.33	92.4	90.87	2.0919	4.6853	8.6514
GMB	Gambia	1999	83.54	26.53	2422.94	84.33	99.6	4.4253	3.2783	7.7927
GMB	Gambia	2000	195.48	8.33	380	51.46	18.3	5.2755	2.1199	5.9402
GMB	Gambia	2001	114.38	26.43	869.64	66.34	59.36	4.7395	3.2745	6.7681
GMB	Gambia	2002	152.23	11.04	602.4	54.43	57.14	5.0254	2.4015	6.4009
GMB	Gambia	2003	222.13	21.11	306.3	32.3	32.63	5.4033	3.0497	5.7246
GMB	Gambia	2004	240.82	5.66	158.2	54.24	54.36	5.484	1.7334	5.0639
GMB	Gambia	2005	131.3	55.15	2502.59	53.64	80.01	4.8775	4.0101	7.8251
GMB	Gambia	2006	242.85	5.44	480.06	39.15	44.22	5.4924	1.6938	6.1739
GMB	Gambia	2007	143.94	18.04	369.72	44.3	49.97	4.9694	2.8926	5.9127
GMB	Gambia	2008	71.06	28.94	2017.11	76.06	73.45	4.2635	3.3652	7.6094

GMB	Gambia	2009	90.11	121.06	2108.59	62.63	71.09	4.501	4.7963	7.6538
GMB	Gambia	2010	20.63	89.31	3188.56	84.38	83.13	3.0267	4.4921	8.0673
GMB	Gambia	2011	67.08	41.49	1852.76	66.52	70.89	4.2059	3.7255	7.5244
GMB	Gambia	2012	108.65	54.6	2374.07	44.11	71.65	4.6881	4	7.7724
GMB	Gambia	2013	199.73	4.8	226.29	33.51	54.67	5.297	1.5686	5.4218
GMB	Gambia	2014	271.65	11.06	615.89	22.76	23.11	5.6045	2.4033	6.4231
GMB	Gambia	2015	28.34	322.72	5834.42	59.13	67.88	3.3443	5.7768	8.6715
GMB	Gambia	2016	167.52	26.74	1011.88	56.4	33.46	5.1211	3.2862	6.9196
GMB	Gambia	2017	55.13	56.56	1102.67	71.83	86.18	4.0097	4.0353	7.0055
GMB	Gambia	2018	173.94	35.67	2717.78	73.77	71.34	5.1587	3.5743	7.9076
GHA	Ghana	1995	126.44	66.17	1788.86	73.38	77.54	4.8398	4.1922	7.4893
GHA	Ghana	1996	8.1	16.73	1902.66	44.28	54.24	2.0919	2.8172	7.551
GHA	Ghana	1997	209.51	4.8	158.2	12.6	59.47	5.3448	1.5686	5.0639
GHA	Ghana	1998	89.28	49.72	884.16	90	62.87	4.4918	3.9064	6.7846
GHA	Ghana	1999	94.86	22.72	1856.62	50.33	70.58	4.5524	3.1232	7.5265
GHA	Ghana	2000	52.84	156.24	3540.4	88.06	96.01	3.9673	5.0514	8.172
GHA	Ghana	2001	85.42	33.5	396.12	38.78	44.25	4.4476	3.5115	5.9817
GHA	Ghana	2002	170.27	4.98	534.44	47.09	44.86	5.1374	1.6054	6.2812
GHA	Ghana	2003	121.88	12.01	429.34	37.35	57.9	4.803	2.4857	6.0622
GHA	Ghana	2004	162.49	4.8	503.97	54.33	97.05	5.0906	1.5686	6.2225
GHA	Ghana	2005	165.1	20.26	592.93	50.2	60.32	5.1066	3.0086	6.3851
GHA	Ghana	2006	240.27	12.3	380.54	29.83	67.17	5.4818	2.5096	5.9416
GHA	Ghana	2007	109.84	25.78	1785.25	48.73	84.49	4.699	3.2496	7.4873
GHA	Ghana	2008	20.92	162.64	2144.99	79.22	87.35	3.0407	5.0915	7.6709
GHA	Ghana	2009	220.4	43.2	402.95	20.51	29.72	5.3954	3.7658	5.9988
GHA	Ghana	2010	110.73	31.43	901.5	64.03	81.37	4.7071	3.4478	6.8041
GHA	Ghana	2011	224.12	4.8	278.4	75.24	26.76	5.4122	1.5686	5.6291
GHA	Ghana	2012	166.78	39.69	409.95	65.16	80.86	5.1167	3.6811	6.016
GHA	Ghana	2013	126.44	50.34	462.41	59.79	63.25	4.8398	3.9188	6.1365
GHA	Ghana	2014	164.07	31.59	1254.49	55.75	21.39	5.1003	3.4528	7.1345
GHA	Ghana	2015	289.7	22.14	257.64	12.6	26.74	5.6688	3.0974	5.5516
GHA	Ghana	2016	299.58	4.8	158.2	12.6	34.49	5.7024	1.5686	5.0639
GHA	Ghana	2017	142.16	144.69	662.41	72.15	60.24	4.957	4.9746	6.4959
GHA	Ghana	2018	149.28	12.66	359.06	30.72	61.54	5.0058	2.5384	5.8835
GIN	Guinea	1995	221.11	29.96	582.35	32.71	35.46	5.3987	3.3999	6.3671
GIN	Guinea	1996	70.41	12.38	1282.12	61.48	49.97	4.2543	2.5161	7.1563
GIN	Guinea	1997	162.84	11.77	307.93	23.56	46.47	5.0928	2.4656	5.7299
GIN	Guinea	1998	134.69	102.74	4228.21	54.76	71.48	4.903	4.6322	8.3495
GIN	Guinea	1999	161.33	20.37	431.37	43.81	48.13	5.0835	3.0141	6.067
GIN	Guinea	2000	71.38	93.68	1440.19	52.2	88.71	4.268	4.5399	7.2725
GIN	Guinea	2001	12.08	88.06	6501.69	76.74	74.74	2.4916	4.478	8.7798

GIN	Guinea	2002	8.1	87.66	3654.39	72.24	91.68	2.0919	4.4735	8.2037
GIN	Guinea	2003	49.11	167.27	2318.24	82.01	81.31	3.8941	5.1196	7.7486
GIN	Guinea	2004	100.76	31.99	976.15	55.33	41.91	4.6127	3.4654	6.8836
GIN	Guinea	2005	113.73	8.43	1091.84	55.93	43.9	4.7338	2.1318	6.9956
GIN	Guinea	2006	288.62	5.32	403.55	42.95	40.85	5.6651	1.6715	6.0003
GIN	Guinea	2007	223.44	25.13	332.61	34.67	74.99	5.4091	3.2241	5.807
GIN	Guinea	2008	61.28	70.44	1877.2	65.62	83.29	4.1155	4.2548	7.5375
GIN	Guinea	2009	163.98	7	382.61	49.95	26.71	5.0997	1.9459	5.947
GIN	Guinea	2010	104.8	21	481.85	60.75	18.3	4.6521	3.0445	6.1776
GIN	Guinea	2011	114.42	21.99	799.39	53.13	73.35	4.7399	3.0906	6.6838
GIN	Guinea	2012	151.25	20.13	664.89	51.71	56.41	5.0189	3.0022	6.4996
GIN	Guinea	2013	185.27	7.01	628.61	34.42	67.91	5.2218	1.9473	6.4435
GIN	Guinea	2014	110.12	21.84	1664.48	50.81	52.97	4.7016	3.0837	7.4173
GIN	Guinea	2015	220.14	9.2	266.32	46.25	50.7	5.3943	2.2192	5.5847
GIN	Guinea	2016	47.18	105.36	2236.75	80.32	92.29	3.854	4.6574	7.7128
GIN	Guinea	2017	137.22	57.16	1761.69	70.56	61.61	4.9216	4.0459	7.474
GIN	Guinea	2018	303.5	6.24	158.2	18.54	18.76	5.7154	1.831	5.0639
GNB	Guinea-Bissau	1995	154.21	19.29	893.29	54.39	59.96	5.0383	2.9596	6.7949
GNB	Guinea-Bissau	1996	249.1	15.04	342.71	46.06	52.81	5.5179	2.7107	5.8369
GNB	Guinea-Bissau	1997	143.9	14.76	337.81	57.67	55.44	4.9691	2.6919	5.8225
GNB	Guinea-Bissau	1998	182.26	8.61	215.54	48.86	62.62	5.2054	2.1529	5.3731
GNB	Guinea-Bissau	1999	132.27	14.52	1393.84	58.84	57.41	4.8848	2.6755	7.2398
GNB	Guinea-Bissau	2000	123.36	19.77	685.52	74.78	44.39	4.8151	2.9842	6.5302
GNB	Guinea-Bissau	2001	75.6	18.17	2278.42	74.21	99.6	4.3255	2.8998	7.7312
GNB	Guinea-Bissau	2002	170.46	26.82	524.1	56.27	46.88	5.1385	3.2891	6.2617
GNB	Guinea-Bissau	2003	69.95	86.62	2420.85	76.86	68.74	4.2478	4.4615	7.7919
GNB	Guinea-Bissau	2004	188.91	5.77	1137.75	57.23	56.31	5.2413	1.7527	7.0368
GNB	Guinea-Bissau	2005	221.82	16.66	236.89	21.28	41.96	5.4019	2.813	5.4676
GNB	Guinea-Bissau	2006	165.46	20.44	212.94	47.07	44.02	5.1087	3.0175	5.361
GNB	Guinea-Bissau	2007	114.28	46.23	2506.04	92.4	79.12	4.7387	3.8336	7.8265
GNB	Guinea-Bissau	2008	172.32	22.99	402.02	37.09	50.41	5.1494	3.1351	5.9965
GNB	Guinea-Bissau	2009	112.52	11.06	578.78	52.63	62.75	4.7231	2.4033	6.3609
GNB	Guinea-Bissau	2010	210.08	6.44	201.05	24.41	18.3	5.3475	1.8625	5.3036
GNB	Guinea-Bissau	2011	8.1	85.32	3404.42	74.57	99.6	2.0919	4.4464	8.1328
GNB	Guinea-Bissau	2012	110.41	82.56	965.16	82.87	67.67	4.7042	4.4135	6.8723
GNB	Guinea-Bissau	2013	8.1	15.37	1164.47	59.3	85.39	2.0919	2.7324	7.06
GNB	Guinea-Bissau	2014	19.49	91.16	3448.19	72.96	62.21	2.9699	4.5126	8.1456
GNB	Guinea-Bissau	2015	243.66	36.34	327.66	12.6	32.52	5.4958	3.5929	5.792
GNB	Guinea-Bissau	2016	206.91	16.05	305.4	25.04	34.1	5.3323	2.7757	5.7216
GNB	Guinea-Bissau	2017	80.31	69.65	1435.36	38.48	88.98	4.3859	4.2435	7.2692
GNB	Guinea-Bissau	2018	18.91	39.41	775.22	72.57	65.47	2.9397	3.674	6.6531

KEN	Kenya	1995	8.1	142.62	4547.32	92.4	99.6	2.0919	4.9602	8.4223
KEN	Kenya	1996	94.1	11.03	682.07	49.06	52.21	4.5444	2.4006	6.5251
KEN	Kenya	1997	303.5	4.8	158.2	12.6	18.3	5.7154	1.5686	5.0639
KEN	Kenya	1998	170.82	50.09	826.59	66.08	56.85	5.1406	3.9138	6.7173
KEN	Kenya	1999	92.84	18.55	827.65	45.97	82.31	4.5309	2.9205	6.7186
KEN	Kenya	2000	173.19	16.01	366.57	62.17	26	5.1544	2.7732	5.9042
KEN	Kenya	2001	14.33	23.51	2024.42	69.56	59.03	2.6624	3.1574	7.613
KEN	Kenya	2002	113.41	11.39	1336.62	51.31	35.03	4.731	2.4327	7.1979
KEN	Kenya	2003	144.52	24.63	583.03	46.69	40.74	4.9734	3.204	6.3682
KEN	Kenya	2004	129.97	17.48	897.82	67.47	51.66	4.8673	2.8611	6.8
KEN	Kenya	2005	198.73	26.08	528.33	40.65	26.63	5.2919	3.2612	6.2697
KEN	Kenya	2006	163.74	35.53	1028.75	47.02	47.76	5.0983	3.5704	6.9361
KEN	Kenya	2007	189.12	26.67	1557.44	54.52	29.55	5.2424	3.2835	7.3508
KEN	Kenya	2008	82.74	53.29	2010.78	49.01	54.75	4.4157	3.9757	7.6063
KEN	Kenya	2009	207.12	64.41	337.98	45	67.33	5.3333	4.1653	5.823
KEN	Kenya	2010	264.44	5.11	249.46	12.6	39.23	5.5776	1.6312	5.5193
KEN	Kenya	2011	60.65	49.27	3232.64	69.27	80.65	4.1051	3.8973	8.0811
KEN	Kenya	2012	67.12	122.18	2187.28	83.56	63.36	4.2065	4.8055	7.6904
KEN	Kenya	2013	241.46	39.2	1072.94	54.24	30.51	5.4867	3.6687	6.9782
KEN	Kenya	2014	121.72	10.63	371.42	54.89	40.22	4.8017	2.3637	5.9173
KEN	Kenya	2015	246.79	10.63	158.2	22.83	34.89	5.5085	2.3637	5.0639
KEN	Kenya	2016	102.02	114.19	2202.29	87.41	89.06	4.6252	4.7379	7.6973
KEN	Kenya	2017	250.81	19.97	158.2	40.16	53.02	5.5247	2.9942	5.0639
KEN	Kenya	2018	147.03	32.55	754.87	59.49	70.1	4.9906	3.4828	6.6265
LSO	Lesotho	1995	156.97	21.76	1393.72	73.33	53.94	5.0561	3.0801	7.2397
LSO	Lesotho	1996	259.41	9.17	158.2	30.26	33.96	5.5584	2.2159	5.0639
LSO	Lesotho	1997	108.35	46.2	600.72	45.95	55.95	4.6854	3.833	6.3981
LSO	Lesotho	1998	62.93	41.37	808.99	38.6	61.93	4.142	3.7226	6.6958
LSO	Lesotho	1999	101.55	37.18	1106.47	67.09	98.59	4.6206	3.6158	7.0089
LSO	Lesotho	2000	172.19	24.77	542.85	55.16	29.28	5.1486	3.2096	6.2968
LSO	Lesotho	2001	13.95	41.66	4061.66	92.4	84.58	2.6355	3.7295	8.3093
LSO	Lesotho	2002	186.7	32.15	1225.42	40.35	74.69	5.2295	3.4704	7.111
LSO	Lesotho	2003	94.47	420.75	5439.38	66.43	57.01	4.5483	6.042	8.6014
LSO	Lesotho	2004	226.72	4.8	214.39	37.95	31.88	5.4237	1.5686	5.3678
LSO	Lesotho	2005	8.1	148.08	5966.03	91.32	87.5	2.0919	4.9978	8.6938
LSO	Lesotho	2006	75.05	25.23	653.32	26.42	56.92	4.3182	3.228	6.4821
LSO	Lesotho	2007	8.1	122.21	5418.06	92.4	66.27	2.0919	4.8057	8.5975
LSO	Lesotho	2008	71.94	49.32	810.85	30	71.81	4.2758	3.8983	6.6981
LSO	Lesotho	2009	156.14	48.09	1625.39	46.03	71.96	5.0508	3.8731	7.3935
LSO	Lesotho	2010	122.67	85.11	3110.21	92.4	84.33	4.8095	4.4439	8.0424
LSO	Lesotho	2011	116.85	40.26	1252.95	89.55	58.15	4.7609	3.6954	7.1333

LSO	Lesotho	2012	124.24	81.28	1391.99	42.6	65.07	4.8222	4.3979	7.2385
LSO	Lesotho	2013	152.67	4.8	364.23	37.4	37.24	5.0283	1.5686	5.8978
LSO	Lesotho	2014	57.64	188.84	639.15	58.74	63.89	4.0542	5.2409	6.4601
LSO	Lesotho	2015	192.14	27.26	758.23	77.06	91.91	5.2582	3.3054	6.631
LSO	Lesotho	2016	188.68	49.16	823.26	42.71	56.42	5.2401	3.8951	6.7133
LSO	Lesotho	2017	166.91	9.06	397.62	35.36	32.48	5.1175	2.2039	5.9855
LSO	Lesotho	2018	180.36	11.25	640.84	71.95	60.78	5.195	2.4204	6.4628
LBR	Liberia	1995	159.96	28.53	729.08	45.1	36.47	5.0749	3.351	6.5918
LBR	Liberia	1996	296.29	9.47	158.2	30.29	18.3	5.6913	2.2481	5.0639
LBR	Liberia	1997	129.89	39.46	955.01	33.32	43.45	4.8667	3.6753	6.8617
LBR	Liberia	1998	112.64	84.97	1727.03	62.49	62.66	4.7242	4.4423	7.4542
LBR	Liberia	1999	77.64	11.05	735.98	30.83	74.79	4.3521	2.4024	6.6012
LBR	Liberia	2000	55.78	116.59	2800.02	58.7	85.13	4.0214	4.7587	7.9374
LBR	Liberia	2001	39.14	60.43	3558.34	92.35	92.16	3.6671	4.1015	8.177
LBR	Liberia	2002	67.03	41.77	773.45	58.16	51.18	4.2051	3.7322	6.6509
LBR	Liberia	2003	131.18	9.55	549.6	44.39	48.58	4.8766	2.2565	6.3092
LBR	Liberia	2004	162.93	37.21	1786.75	49.6	66.34	5.0933	3.6166	7.4882
LBR	Liberia	2005	140.73	4.8	158.2	26.67	34.51	4.9468	1.5686	5.0639
LBR	Liberia	2006	76.69	77.33	2077.18	74.8	71.25	4.3398	4.3481	7.6388
LBR	Liberia	2007	207.3	5.46	187.26	46.24	50.87	5.3342	1.6974	5.2325
LBR	Liberia	2008	194.7	20.68	443.87	12.6	38.14	5.2715	3.0292	6.0955
LBR	Liberia	2009	124.2	29.75	550.41	37.35	60.5	4.8219	3.3928	6.3107
LBR	Liberia	2010	85.52	110.38	1961.07	71.37	98	4.4488	4.7039	7.5812
LBR	Liberia	2011	179.72	19.09	1603.86	57.01	58.33	5.1914	2.9492	7.3802
LBR	Liberia	2012	151.46	15.43	282.1	46.61	69.92	5.0203	2.7363	5.6423
LBR	Liberia	2013	23.17	44.77	939.55	68.82	82.78	3.1429	3.8015	6.8454
LBR	Liberia	2014	131.39	86.49	733.6	48.93	38.85	4.8782	4.46	6.598
LBR	Liberia	2015	157.27	39.79	2434.26	57.19	49.17	5.058	3.6836	7.7974
LBR	Liberia	2016	66.17	36.31	1029.72	58.44	56.68	4.1922	3.5921	6.937
LBR	Liberia	2017	151.61	22.27	686.9	68.94	48.18	5.0213	3.1032	6.5322
LBR	Liberia	2018	22.65	19.16	942.49	52.78	69.64	3.1202	2.9528	6.8485
MDG	Madagascar	1995	241.49	19.39	248.83	31.03	50.52	5.4868	2.9648	5.5168
MDG	Madagascar	1996	234.57	4.8	162.91	29.75	56.84	5.4578	1.5686	5.0932
MDG	Madagascar	1997	116.92	63.08	5641.45	92.4	86.51	4.7615	4.1444	8.6379
MDG	Madagascar	1998	165.22	27.1	1592.33	55.01	55.39	5.1073	3.2995	7.373
MDG	Madagascar	1999	8.1	462.3	6945.03	92.4	69.72	2.0919	6.1362	8.8458
MDG	Madagascar	2000	46.05	23.61	1704.46	88.98	79.48	3.8297	3.1617	7.441
MDG	Madagascar	2001	113.68	32.49	630.76	51.89	61.67	4.7334	3.4809	6.4469
MDG	Madagascar	2002	52.65	231.23	1343.45	63.93	77.05	3.9637	5.4434	7.203
MDG	Madagascar	2003	192.74	52.32	1585.77	52.69	91.48	5.2613	3.9574	7.3688
MDG	Madagascar	2004	293.33	5.6	340.8	27.19	55.37	5.6813	1.7228	5.8313

MDG	Madagascar	2005	44.46	69.19	3733.53	92.4	96.08	3.7946	4.2369	8.2251
MDG	Madagascar	2006	71.05	47.89	1154.55	67.04	56.63	4.2634	3.8689	7.0515
MDG	Madagascar	2007	155.18	32.92	761.66	55.65	51.63	5.0446	3.4941	6.6355
MDG	Madagascar	2008	263.05	6.94	347.43	16.12	36.35	5.5723	1.9373	5.8506
MDG	Madagascar	2009	40.87	55.18	2332.83	58.76	64.49	3.7104	4.0106	7.7548
MDG	Madagascar	2010	156.25	7.21	306.26	74.31	63.79	5.0515	1.9755	5.7244
MDG	Madagascar	2011	279.53	12.06	158.2	16.68	36.25	5.6331	2.4899	5.0639
MDG	Madagascar	2012	8.1	108.2	3296.45	68.7	66.81	2.0919	4.684	8.1006
MDG	Madagascar	2013	36.27	51.03	3383.13	92.4	99.6	3.591	3.9324	8.1266
MDG	Madagascar	2014	103.51	10.36	299.5	48.89	58.26	4.6397	2.338	5.7021
MDG	Madagascar	2015	95.9	88.63	2640.34	80.58	50.17	4.5633	4.4845	7.8787
MDG	Madagascar	2016	200.44	25.48	716.2	45.49	52.37	5.3005	3.2379	6.574
MDG	Madagascar	2017	155.67	14.6	843	47.73	62	5.0477	2.681	6.737
MDG	Madagascar	2018	8.1	64.44	4067.87	81.22	99.6	2.0919	4.1657	8.3109
MWI	Malawi	1995	177.13	6.72	225.71	13.54	37.4	5.1769	1.9051	5.4193
MWI	Malawi	1996	91.44	18.14	332.83	45.46	70.66	4.5157	2.8981	5.8076
MWI	Malawi	1997	236.65	9.53	223.47	35.49	44.1	5.4666	2.2544	5.4093
MWI	Malawi	1998	87.51	114.1	3603	92.4	63.13	4.4718	4.7371	8.1895
MWI	Malawi	1999	86.8	25.56	746.2	58.16	44.11	4.4636	3.241	6.615
MWI	Malawi	2000	179.15	37.01	535.61	12.6	64.47	5.1882	3.6112	6.2834
MWI	Malawi	2001	196.54	12.68	158.2	27.88	59.59	5.2809	2.54	5.0639
MWI	Malawi	2002	171.86	28.45	1941.37	92.4	75.9	5.1467	3.3481	7.5711
MWI	Malawi	2003	8.1	68.56	3957.37	92.4	99.6	2.0919	4.2277	8.2833
MWI	Malawi	2004	178.91	44.7	1355.35	44.25	74.52	5.1869	3.8	7.2118
MWI	Malawi	2005	55.62	34.73	2380.93	82.24	88.82	4.0185	3.5476	7.7752
MWI	Malawi	2006	155.17	7.42	541.58	35.62	39.16	5.0445	2.0042	6.2945
MWI	Malawi	2007	25.08	21.86	1090.35	44.56	96.27	3.2221	3.0847	6.9943
MWI	Malawi	2008	171.72	15.22	475.42	39.34	60.02	5.1459	2.7226	6.1642
MWI	Malawi	2009	73.47	17.23	692.66	58.23	59.99	4.2969	2.8467	6.5405
MWI	Malawi	2010	36.15	85.26	10241.6	62.84	75.61	3.5877	4.4457	9.2342
MWI	Malawi	2011	192.69	13.82	616.72	28.13	53.4	5.2611	2.6261	6.4244
MWI	Malawi	2012	155.67	176.31	1516.02	60.86	40.17	5.0477	5.1722	7.3238
MWI	Malawi	2013	88.58	10.44	828.79	51.09	74.29	4.4839	2.3456	6.72
MWI	Malawi	2014	250.51	15.67	205.96	35.25	25.72	5.5235	2.7517	5.3277
MWI	Malawi	2015	102.17	15.47	1714.25	46.03	71.5	4.6266	2.7389	7.4467
MWI	Malawi	2016	139.24	19.78	477.86	58.73	50.5	4.9362	2.9847	6.1693
MWI	Malawi	2017	157.81	28.86	1027.27	36.54	53.36	5.0614	3.3625	6.9347
MWI	Malawi	2018	88.13	6.53	918.38	84.45	58.26	4.4788	1.8764	6.8226
MLI	Mali	1995	173.66	27.83	876.03	25.06	50.71	5.1571	3.3261	6.7754
MLI	Mali	1996	94.89	186.13	2848.26	55.53	99.6	4.5527	5.2264	7.9545
MLI	Mali	1997	104.44	26.18	951.23	64.9	87.08	4.6486	3.265	6.8578

MLI	Mali	1998	243.56	17.23	383.87	63.12	54.08	5.4954	2.8467	5.9503
MLI	Mali	1999	55.13	122.04	1890.88	75.76	76.98	4.0097	4.8043	7.5448
MLI	Mali	2000	8.1	101.09	3062.84	92.4	99.6	2.0919	4.616	8.0271
MLI	Mali	2001	263.03	7.63	551.79	39.59	61.26	5.5723	2.0321	6.3132
MLI	Mali	2002	303.5	4.8	158.2	12.6	18.3	5.7154	1.5686	5.0639
MLI	Mali	2003	104.94	62.85	945.65	50.86	63.41	4.6534	4.1408	6.8519
MLI	Mali	2004	8.1	80.7	2204.35	58.68	53.65	2.0919	4.3907	7.6982
MLI	Mali	2005	112.37	15.78	1312.33	41.12	79.69	4.7218	2.7587	7.1796
MLI	Mali	2006	114.28	38.9	1621.94	70.33	99.6	4.7387	3.661	7.3914
MLI	Mali	2007	121.83	20.83	1064.92	40.52	62.23	4.8026	3.0364	6.9707
MLI	Mali	2008	49.42	36.49	1254.56	70.94	41.91	3.9004	3.597	7.1345
MLI	Mali	2009	182.16	35.25	1057.17	33.25	64.13	5.2049	3.5625	6.9634
MLI	Mali	2010	177.85	7.62	246.89	41.05	34.09	5.1809	2.0308	5.5089
MLI	Mali	2011	19.54	160.13	3075.78	71.63	72.59	2.9725	5.076	8.0313
MLI	Mali	2012	191.54	6.59	536.69	66.55	64.2	5.2551	1.8856	6.2854
MLI	Mali	2013	297.67	5.58	283.33	33.83	40.33	5.696	1.7192	5.6466
MLI	Mali	2014	150.2	127.52	982.15	75.36	58.29	5.012	4.8483	6.8897
MLI	Mali	2015	110.27	89.45	1061.97	47.79	54.75	4.7029	4.4937	6.9679
MLI	Mali	2016	125.59	35.06	1057.12	58.96	66.14	4.833	3.5571	6.9633
MLI	Mali	2017	184.96	9.97	1051.13	37.48	48.19	5.2201	2.2996	6.9576
MLI	Mali	2018	8.1	51.48	733.63	56.93	56.44	2.0919	3.9412	6.598
MRT	Mauritania	1995	149.61	28.97	942.7	50.68	54.99	5.008	3.3663	6.8487
MRT	Mauritania	1996	106.1	38.38	522.71	39.9	64.15	4.6644	3.6475	6.259
MRT	Mauritania	1997	281.61	9.91	174.2	12.6	28.31	5.6405	2.2935	5.1602
MRT	Mauritania	1998	123.06	32.2	782.98	32.43	37.07	4.8127	3.472	6.6631
MRT	Mauritania	1999	267.5	9.92	210.32	12.6	45.61	5.5891	2.2946	5.3486
MRT	Mauritania	2000	50.18	17.42	731.89	42.56	24.32	3.9156	2.8576	6.5956
MRT	Mauritania	2001	182.77	14.24	480.66	53.97	46.79	5.2082	2.6561	6.1752
MRT	Mauritania	2002	161.76	52.23	758.77	26.4	44.86	5.0861	3.9557	6.6317
MRT	Mauritania	2003	68.58	16.21	381.93	28.59	60.2	4.228	2.7856	5.9452
MRT	Mauritania	2004	150.63	23.28	1115.04	84.84	74.83	5.0148	3.1476	7.0166
MRT	Mauritania	2005	231.79	7.87	429.97	28.76	60.78	5.4458	2.0631	6.0637
MRT	Mauritania	2006	111.33	39.24	1816.73	70.62	59.73	4.7125	3.6697	7.5048
MRT	Mauritania	2007	8.1	56.41	937.45	76.25	86.3	2.0919	4.0326	6.8432
MRT	Mauritania	2008	135.34	99.11	1914.72	75.18	73.13	4.9078	4.5962	7.5573
MRT	Mauritania	2009	65.96	74.49	2840.48	50.54	48.16	4.189	4.3107	7.9517
MRT	Mauritania	2010	109.88	12.64	353.55	42.35	84.65	4.6994	2.5369	5.868
MRT	Mauritania	2011	130.32	53.74	1215.89	34.03	39.11	4.87	3.9842	7.1032
MRT	Mauritania	2012	8.1	41.68	1810.77	92.4	93.24	2.0919	3.73	7.5015
MRT	Mauritania	2013	10.04	46.46	5625.01	61.47	89.63	2.3066	3.8386	8.635
MRT	Mauritania	2014	174.52	29.43	2150.58	46.08	65.57	5.162	3.382	7.6735

MRT	Mauritania	2015	95.73	27.01	389.31	32.12	49.34	4.5615	3.2962	5.9644
MRT	Mauritania	2016	8.1	257.26	10241.6	88.14	99.6	2.0919	5.5501	9.2342
MRT	Mauritania	2017	198.26	10.36	225.02	55.18	24.64	5.2896	2.338	5.4162
MRT	Mauritania	2018	158.08	15.64	984.05	92.4	65.08	5.0631	2.7498	6.8917
MUS	Mauritius	1995	80.75	26.33	1838.71	60.36	62.59	4.3914	3.2707	7.5168
MUS	Mauritius	1996	33.47	39.67	928.66	42.82	58.74	3.5106	3.6806	6.8337
MUS	Mauritius	1997	202.26	45.39	1046.03	16.96	57.08	5.3096	3.8153	6.9528
MUS	Mauritius	1998	164.11	40.82	843.16	48.7	74.28	5.1005	3.7092	6.7372
MUS	Mauritius	1999	303.5	31.24	505.23	29.29	32.89	5.7154	3.4417	6.225
MUS	Mauritius	2000	169.67	146.43	1913.81	52.02	75.34	5.1339	4.9865	7.5569
MUS	Mauritius	2001	167.12	10.53	870.49	55.6	58.76	5.1187	2.3542	6.7691
MUS	Mauritius	2002	123.63	34.78	1042.69	64.28	51.83	4.8173	3.549	6.9496
MUS	Mauritius	2003	200.76	7.37	285.44	41.41	42.6	5.3021	1.9974	5.654
MUS	Mauritius	2004	185.73	11.3	781.12	44.47	49.5	5.2243	2.4248	6.6607
MUS	Mauritius	2005	234.87	8.97	410.84	20.71	31.64	5.459	2.1939	6.0182
MUS	Mauritius	2006	95.84	17.14	1200.3	72.02	75.53	4.5627	2.8414	7.0903
MUS	Mauritius	2007	102.58	16.4	514.88	51.26	64	4.6306	2.7973	6.2439
MUS	Mauritius	2008	99.15	34.85	620.16	67.83	41.33	4.5966	3.5511	6.43
MUS	Mauritius	2009	198.73	7.24	227.58	46.26	21.46	5.2919	1.9796	5.4275
MUS	Mauritius	2010	254.21	25.5	323.99	12.6	44.95	5.5382	3.2387	5.7807
MUS	Mauritius	2011	100.74	18.51	1258.39	39.13	51.16	4.6125	2.9183	7.1376
MUS	Mauritius	2012	103.41	362.94	6351.12	69.88	84.06	4.6387	5.8942	8.7564
MUS	Mauritius	2013	161.35	17.48	538.55	30.49	63.87	5.0836	2.8611	6.2889
MUS	Mauritius	2014	117.45	36.4	2370.7	80.08	53.76	4.766	3.5946	7.7709
MUS	Mauritius	2015	211.37	6.21	594.67	49.58	29.49	5.3536	1.8262	6.388
MUS	Mauritius	2016	8.1	415.15	8813.61	92.4	99.6	2.0919	6.0286	9.0841
MUS	Mauritius	2017	71.9	116.84	1486.88	72.93	79.39	4.2753	4.7608	7.3044
MUS	Mauritius	2018	75.37	58.86	4012.26	81.05	73.56	4.3224	4.0752	8.2971
MOZ	Mozambique	1995	8.1	37.11	2209.01	92.4	75.72	2.0919	3.6139	7.7003
MOZ	Mozambique	1996	61.16	60.77	1916.32	77.6	68.95	4.1135	4.1071	7.5582
MOZ	Mozambique	1997	64.96	20.28	823.94	60.61	50.11	4.1738	3.0096	6.7141
MOZ	Mozambique	1998	120.95	108.49	1093.34	82.64	83.09	4.7954	4.6867	6.997
MOZ	Mozambique	1999	223.99	30.8	254.35	35.63	32.44	5.4116	3.4275	5.5387
MOZ	Mozambique	2000	117.5	37.07	1521.32	58.18	83.21	4.7664	3.6128	7.3273
MOZ	Mozambique	2001	55.89	7.52	402.27	38.19	54.31	4.0234	2.0176	5.9971
MOZ	Mozambique	2002	132.25	14.03	3418.67	82.01	57.34	4.8847	2.6412	8.137
MOZ	Mozambique	2003	218.99	28.95	313.44	56.11	42.67	5.389	3.3656	5.7476
MOZ	Mozambique	2004	60.2	136.91	1330.86	65.54	34.02	4.0977	4.9193	7.1936
MOZ	Mozambique	2005	65.32	121.44	3330.53	92.4	81.3	4.1793	4.7994	8.1109
MOZ	Mozambique	2006	180.52	6.1	746.27	18.01	46.63	5.1958	1.8083	6.6151
MOZ	Mozambique	2007	119.35	43.18	1181.21	59.06	77.96	4.7821	3.7654	7.0743

MOZ	Mozambique	2008	187.49	47.15	1195.78	54.29	30.67	5.2337	3.8533	7.0866
MOZ	Mozambique	2009	135.65	7.96	158.2	22.77	63.27	4.9101	2.0744	5.0639
MOZ	Mozambique	2010	191.74	20.1	372.77	78.14	68.09	5.2561	3.0007	5.921
MOZ	Mozambique	2011	55.56	66.54	1043.42	62.49	90.2	4.0175	4.1978	6.9503
MOZ	Mozambique	2012	135.77	23.67	264.39	34.45	50.74	4.911	3.1642	5.5774
MOZ	Mozambique	2013	120.2	7.6	498.13	49.41	73.02	4.7892	2.0281	6.2109
MOZ	Mozambique	2014	41.38	45.47	472.83	23.6	39.42	3.7228	3.8171	6.1587
MOZ	Mozambique	2015	14.13	55.15	1000.43	54.14	83.9	2.6483	4.0101	6.9082
MOZ	Mozambique	2016	190.49	18.12	385.03	56.49	40.71	5.2496	2.897	5.9533
MOZ	Mozambique	2017	109.2	23.16	541.83	41.39	33.99	4.6932	3.1424	6.295
MOZ	Mozambique	2018	56.56	37.14	1773.99	56.37	55.7	4.0353	3.6147	7.481
NAM	Namibia	1995	129.18	30.6	1084.07	78.67	67.38	4.8612	3.421	6.9885
NAM	Namibia	1996	225.17	22.75	827.43	68.54	43.19	5.4169	3.1246	6.7183
NAM	Namibia	1997	8.1	83.87	5243.1	92.4	99.6	2.0919	4.4293	8.5647
NAM	Namibia	1998	19.37	49.73	3744.03	73.97	55.84	2.9637	3.9066	8.2279
NAM	Namibia	1999	64.36	54.01	1652.61	64.39	41.27	4.1645	3.9892	7.4101
NAM	Namibia	2000	251.29	4.8	179.97	13.98	54.78	5.5266	1.5686	5.1928
NAM	Namibia	2001	158.88	37.51	1175.79	41.13	72.53	5.0681	3.6246	7.0697
NAM	Namibia	2002	196.89	19.49	570.04	28.68	33.4	5.2826	2.9699	6.3457
NAM	Namibia	2003	47.32	58.46	1490.05	58.54	73.17	3.8569	4.0683	7.3066
NAM	Namibia	2004	48.94	121.14	2227.67	56.88	90.86	3.8906	4.7969	7.7087
NAM	Namibia	2005	171.83	4.85	182.67	12.6	46.97	5.1465	1.579	5.2077
NAM	Namibia	2006	141.29	5.93	472.19	50.12	57.81	4.9508	1.78	6.1574
NAM	Namibia	2007	179.75	27.46	644.27	51.73	71.94	5.1916	3.3127	6.4681
NAM	Namibia	2008	122	33.06	673.31	79.83	54.69	4.804	3.4983	6.5122
NAM	Namibia	2009	158.53	29.39	534.01	36.94	54.36	5.0659	3.3807	6.2804
NAM	Namibia	2010	149.12	18.91	326.34	46.9	53.14	5.0048	2.9397	5.7879
NAM	Namibia	2011	197.7	33.06	1196.79	58.93	54.5	5.2868	3.4983	7.0874
NAM	Namibia	2012	200	40.35	786.71	44.99	48.13	5.2983	3.6976	6.6679
NAM	Namibia	2013	9.71	109.23	1880.99	85.88	83.98	2.2732	4.6935	7.5396
NAM	Namibia	2014	8.1	85.25	5391.27	92.4	95.83	2.0919	4.4456	8.5925
NAM	Namibia	2015	215.27	4.8	158.2	31.48	23.21	5.3719	1.5686	5.0639
NAM	Namibia	2016	229.85	28.6	246.79	28.95	54.28	5.4374	3.3534	5.5085
NAM	Namibia	2017	56.69	141.37	5010.45	76.53	67.98	4.0376	4.9514	8.5193
NAM	Namibia	2018	8.1	142.11	2828.94	58.93	79.06	2.0919	4.9566	7.9477
NER	Niger	1995	144.49	13.97	450.17	33.53	48.55	4.9732	2.6369	6.1096
NER	Niger	1996	209.71	30.58	638.41	35.88	55.63	5.3457	3.4203	6.459
NER	Niger	1997	277.67	21.89	729.74	24.22	18.3	5.6264	3.086	6.5927
NER	Niger	1998	177.2	78.51	1191.23	62.82	75.13	5.1773	4.3632	7.0827
NER	Niger	1999	107.57	18.23	391.99	66.39	51.09	4.6781	2.9031	5.9712
NER	Niger	2000	66.69	41.12	1937.42	55.42	90.41	4.2001	3.7165	7.5691

NER	Niger	2001	137.62	54.23	891.74	59.81	55.64	4.9245	3.9932	6.7932
NER	Niger	2002	113.25	37.06	3163.01	55.59	69.86	4.7296	3.6125	8.0593
NER	Niger	2003	57.13	21.52	1067.74	58.39	98.46	4.0453	3.069	6.9733
NER	Niger	2004	297.36	13.3	158.2	12.6	20.87	5.6949	2.5878	5.0639
NER	Niger	2005	276.7	17.58	419.63	44.91	61.88	5.6229	2.8668	6.0394
NER	Niger	2006	225.8	17.03	1291.3	41.77	53.67	5.4196	2.835	7.1634
NER	Niger	2007	64.52	59.76	4257.01	92.4	89.77	4.167	4.0903	8.3563
NER	Niger	2008	203.76	15.08	1262.03	49.96	57.2	5.3169	2.7134	7.1405
NER	Niger	2009	186.87	68.69	589.25	36.6	65.36	5.2304	4.2296	6.3789
NER	Niger	2010	171.42	11.34	753.98	30.38	42.37	5.1441	2.4283	6.6254
NER	Niger	2011	234.71	9.29	199.98	33.65	25.76	5.4584	2.2289	5.2982
NER	Niger	2012	186.54	21.18	654.46	61.69	46.87	5.2286	3.0531	6.4838
NER	Niger	2013	194.74	40.12	373.47	44.96	51.98	5.2717	3.6919	5.9228
NER	Niger	2014	186.66	6.3	214.73	69.27	47.47	5.2293	1.8405	5.3694
NER	Niger	2015	163.44	8.64	276.54	61.39	63.74	5.0964	2.1564	5.6224
NER	Niger	2016	8.1	15.78	2015.71	70.26	99.6	2.0919	2.7587	7.6087
NER	Niger	2017	143.28	29.34	1314.7	54.19	48.25	4.9648	3.379	7.1814
NER	Niger	2018	93.11	16.63	925.08	66.07	55.9	4.5338	2.8112	6.8299
NGA	Nigeria	1995	36.37	44.95	798.51	48.48	47.36	3.5937	3.8056	6.6827
NGA	Nigeria	1996	268.59	19.9	317.84	51.22	74.18	5.5932	2.9907	5.7615
NGA	Nigeria	1997	272.29	6.8	158.2	28.25	38.81	5.6069	1.9169	5.0639
NGA	Nigeria	1998	243.3	16.87	643.07	47	55.96	5.4943	2.8255	6.4663
NGA	Nigeria	1999	156.73	20.41	1269.62	68.44	43.53	5.0545	3.016	7.1465
NGA	Nigeria	2000	242.62	24.15	861.93	73.75	55.19	5.4915	3.1843	6.7592
NGA	Nigeria	2001	137.67	43.57	683.69	54.83	68.03	4.9249	3.7744	6.5275
NGA	Nigeria	2002	152.62	15.33	158.2	28.47	40.75	5.028	2.7298	5.0639
NGA	Nigeria	2003	50.98	48.18	609.78	81.22	88.01	3.9314	3.8749	6.4131
NGA	Nigeria	2004	167.85	55.48	2308.22	79.45	99.6	5.1231	4.016	7.7442
NGA	Nigeria	2005	141.45	39.71	782.91	48.34	45.36	4.9519	3.6816	6.663
NGA	Nigeria	2006	34.58	20.18	751.01	60.85	54.82	3.5433	3.0047	6.6214
NGA	Nigeria	2007	132.71	52.18	2991.91	72.98	58.68	4.8882	3.9547	8.0037
NGA	Nigeria	2008	130.47	13.1	1202.61	64.49	88.72	4.8711	2.5726	7.0922
NGA	Nigeria	2009	277.67	34.11	485.61	15.97	55.28	5.6264	3.5296	6.1854
NGA	Nigeria	2010	206.84	41.36	624.7	21.47	46.16	5.3319	3.7223	6.4373
NGA	Nigeria	2011	137.62	37.55	902.55	41.35	59.99	4.9245	3.6257	6.8052
NGA	Nigeria	2012	156.23	29.56	896.9	38.53	44.84	5.0513	3.3864	6.7989
NGA	Nigeria	2013	140.19	24.69	1922.24	53.67	78.31	4.943	3.2064	7.5612
NGA	Nigeria	2014	120.81	57.85	1669.41	74.01	64.36	4.7942	4.0579	7.4202
NGA	Nigeria	2015	51.85	40.7	2291.9	70.17	72.86	3.9484	3.7062	7.7371
NGA	Nigeria	2016	124.88	39.37	2054.35	69.06	78.78	4.8274	3.673	7.6277
NGA	Nigeria	2017	78.22	91.55	1045.7	42.67	63.53	4.3595	4.5169	6.9524

NGA	Nigeria	2018	38.68	38.34	2404.08	67.09	74.06	3.6553	3.6465	7.7849
RWA	Rwanda	1995	176.8	13.71	408.61	51.87	52.92	5.175	2.6181	6.0128
RWA	Rwanda	1996	167.4	9.22	158.2	35.9	54.95	5.1204	2.2214	5.0639
RWA	Rwanda	1997	8.1	34.55	541.27	48.63	94.84	2.0919	3.5424	6.2939
RWA	Rwanda	1998	127.1	7.38	249.38	42.9	61.19	4.845	1.9988	5.519
RWA	Rwanda	1999	214.79	30.85	826.79	82.99	71.25	5.3697	3.4291	6.7176
RWA	Rwanda	2000	219.77	70.87	975.59	49.97	51.74	5.3926	4.2608	6.883
RWA	Rwanda	2001	217.16	53.05	886.38	38.28	41.59	5.3806	3.9712	6.7871
RWA	Rwanda	2002	139.77	7.93	1313.98	56.17	72.23	4.94	2.0707	7.1808
RWA	Rwanda	2003	70.46	85.97	992.64	63.37	72.79	4.255	4.454	6.9004
RWA	Rwanda	2004	51.75	172.02	3127.81	74.72	59.07	3.9464	5.1476	8.0481
RWA	Rwanda	2005	163.74	17.11	683.6	49.25	51.44	5.0983	2.8397	6.5274
RWA	Rwanda	2006	166.46	26.28	465.85	22.48	48.68	5.1148	3.2688	6.1439
RWA	Rwanda	2007	237.66	4.8	166.47	12.6	26.9	5.4708	1.5686	5.1148
RWA	Rwanda	2008	222.97	20.06	190.48	27.96	63.24	5.407	2.9987	5.2495
RWA	Rwanda	2009	126.35	13.72	1362.99	57.99	71.76	4.8391	2.6189	7.2174
RWA	Rwanda	2010	39.16	70.46	1449.8	59.74	94.76	3.6677	4.255	7.2792
RWA	Rwanda	2011	111.7	10.21	1786.08	61.96	71.63	4.7158	2.3234	7.4878
RWA	Rwanda	2012	153.75	41.02	926.09	55.4	61.86	5.0353	3.7141	6.831
RWA	Rwanda	2013	120.87	76.36	2712.46	83.83	60.47	4.7947	4.3355	7.9056
RWA	Rwanda	2014	91.41	22.04	893.08	56.94	65.75	4.5154	3.0929	6.7947
RWA	Rwanda	2015	156.55	10.43	453.73	51.56	54.98	5.0534	2.3447	6.1175
RWA	Rwanda	2016	97.2	7.02	357.92	38.31	35.55	4.5768	1.9488	5.8803
RWA	Rwanda	2017	87.47	34.34	1258.89	72.03	62.57	4.4713	3.5363	7.138
RWA	Rwanda	2018	161.14	15.77	668.78	55.57	52.62	5.0823	2.7581	6.5055
STP	Sao Tome and Principe	1995	105.2	10.78	383.29	60.87	66.16	4.6559	2.3777	5.9488
STP	Sao Tome and Principe	1996	155.86	37.59	832.04	64.23	68.24	5.049	3.6267	6.7239
STP	Sao Tome and Principe	1997	158.14	17.9	427.57	53.97	46.48	5.0635	2.8848	6.0581
STP	Sao Tome and Principe	1998	47.38	23.85	4347.18	78.9	88.6	3.8582	3.1718	8.3773
STP	Sao Tome and Principe	1999	98.99	25.09	902.09	61.96	63.2	4.595	3.2225	6.8047
STP	Sao Tome and Principe	2000	249.46	31.71	1266.03	67.46	18.3	5.5193	3.4566	7.1436
STP	Sao Tome and Principe	2001	45.6	93.06	2136.7	62.56	69.08	3.8199	4.5332	7.667
STP	Sao Tome and Principe	2002	8.1	88.04	3824.28	75.44	99.6	2.0919	4.4778	8.2491
STP	Sao Tome and Principe	2003	8.1	139.39	1796.4	78.02	57.91	2.0919	4.9373	7.4935
STP	Sao Tome and Principe	2004	139	11.59	410.79	52.04	57.64	4.9345	2.4501	6.0181
STP	Sao Tome and Principe	2005	139.14	30.2	973.52	43.02	83.61	4.9355	3.4078	6.8809
STP	Sao Tome and Principe	2006	127.5	35.99	2455.12	66.64	58.45	4.8481	3.5832	7.8059
STP	Sao Tome and Principe	2007	231.92	10.41	367	35.56	44.44	5.4464	2.3428	5.9054
STP	Sao Tome and Principe	2008	8.1	189.23	10241.6	68.57	78.29	2.0919	5.243	9.2342
STP	Sao Tome and Principe	2009	167.77	12.82	700.22	46.13	79.8	5.1226	2.551	6.5514
STP	Sao Tome and Principe	2010	259.15	18.85	970.9	44.15	47.92	5.5574	2.9365	6.8782

STP	Sao Tome and Principe	2011	48.29	87.62	2210.59	70.48	78.3	3.8772	4.473	7.701
STP	Sao Tome and Principe	2012	106.94	4.8	1304.13	83.29	89.47	4.6723	1.5686	7.1733
STP	Sao Tome and Principe	2013	77.69	118.69	1765.36	49.1	80.42	4.3527	4.7765	7.4761
STP	Sao Tome and Principe	2014	66.59	4.8	288.83	33.46	43.2	4.1986	1.5686	5.6658
STP	Sao Tome and Principe	2015	111.14	21.9	420.83	12.6	41.68	4.7108	3.0865	6.0422
STP	Sao Tome and Principe	2016	248.65	30.73	1953.37	48.25	62.33	5.516	3.4252	7.5773
STP	Sao Tome and Principe	2017	280.79	8.31	364.57	26.91	29.1	5.6376	2.1175	5.8987
STP	Sao Tome and Principe	2018	110.38	11.12	490.68	41.7	25.79	4.7039	2.4087	6.1958
SEN	Senegal	1995	286.1	4.8	323.32	48.5	39.68	5.6563	1.5686	5.7786
SEN	Senegal	1996	139.51	66.99	1915.52	77.82	47.72	4.9381	4.2045	7.5577
SEN	Senegal	1997	274.23	4.8	381.52	34.87	63.84	5.614	1.5686	5.9442
SEN	Senegal	1998	129.4	78.15	611.46	45.86	62.14	4.8629	4.3586	6.4158
SEN	Senegal	1999	147	26.62	671.36	67.17	47.55	4.9904	3.2817	6.5093
SEN	Senegal	2000	165.38	9.36	322.45	40.24	39.71	5.1082	2.2364	5.7759
SEN	Senegal	2001	303.5	4.8	158.2	12.6	18.3	5.7154	1.5686	5.0639
SEN	Senegal	2002	203.47	8.22	598.03	17.79	29.73	5.3155	2.1066	6.3936
SEN	Senegal	2003	81.26	89.17	1694.02	60.42	86.9	4.3977	4.4905	7.4349
SEN	Senegal	2004	212.7	31.38	948.01	62	90.05	5.3599	3.4462	6.8544
SEN	Senegal	2005	108.35	9.21	2073.72	92.4	86.47	4.6854	2.2203	7.6371
SEN	Senegal	2006	98.32	28.46	831.23	58.21	63.65	4.5882	3.3485	6.7229
SEN	Senegal	2007	207.96	9.01	264.78	22.91	36	5.3373	2.1983	5.5789
SEN	Senegal	2008	139.16	83.2	1552.35	43.24	48.82	4.9356	4.4212	7.3475
SEN	Senegal	2009	158.56	8.66	728.17	59.29	89.2	5.0661	2.1587	6.5905
SEN	Senegal	2010	137.82	107.82	1209.19	31.39	57.35	4.9259	4.6805	7.0977
SEN	Senegal	2011	163.11	24.15	481.14	54.49	87.52	5.0944	3.1843	6.1762
SEN	Senegal	2012	170.04	9.28	743.75	62.88	78.98	5.136	2.2279	6.6117
SEN	Senegal	2013	8.1	51.29	2904.3	87.69	60.86	2.0919	3.9375	7.9739
SEN	Senegal	2014	188.99	10.83	158.2	24.4	30.64	5.2417	2.3823	5.0639
SEN	Senegal	2015	59.72	18.61	488.98	62.68	55.91	4.0897	2.9237	6.1923
SEN	Senegal	2016	23.63	72.35	5455.29	88.09	86.14	3.1625	4.2815	8.6043
SEN	Senegal	2017	132.14	11.53	685.09	39.75	56.26	4.8839	2.445	6.5296
SEN	Senegal	2018	143.3	4.95	217.88	66.53	98.94	4.9649	1.5994	5.3839
SLE	Sierra Leone	1995	82.34	32.52	1064.22	55.87	51.26	4.4109	3.4819	6.97
SLE	Sierra Leone	1996	201.88	4.8	242.17	46.31	49.34	5.3077	1.5686	5.4896
SLE	Sierra Leone	1997	31.48	34.64	2335.44	36.42	82.02	3.4494	3.545	7.756
SLE	Sierra Leone	1998	104.81	18.11	361.57	66.91	61.13	4.6521	2.8965	5.8905
SLE	Sierra Leone	1999	90.86	20.62	553.44	76.05	67.93	4.5093	3.0263	6.3162
SLE	Sierra Leone	2000	133.07	153.41	2385.15	68.15	55.05	4.8909	5.0331	7.777
SLE	Sierra Leone	2001	158.59	26.81	700.81	59.43	60.66	5.0663	3.2888	6.5522
SLE	Sierra Leone	2002	57.69	64.05	2576.81	82.76	87.09	4.0551	4.1597	7.8543
SLE	Sierra Leone	2003	193.51	4.8	158.2	17.31	43.39	5.2653	1.5686	5.0639

SLE	Sierra Leone	2004	141.66	17.09	781.1	61.61	69.65	4.9534	2.8385	6.6607
SLE	Sierra Leone	2005	8.1	102.48	6100.65	76.8	99.6	2.0919	4.6297	8.7162
SLE	Sierra Leone	2006	8.1	39.28	2715.23	70.45	97.7	2.0919	3.6707	7.9066
SLE	Sierra Leone	2007	135.75	62.54	1378.84	78.42	69.64	4.9108	4.1358	7.229
SLE	Sierra Leone	2008	119.39	12.89	580.58	66.45	44.42	4.7824	2.5565	6.364
SLE	Sierra Leone	2009	128.61	25.2	515.28	38.14	47.35	4.8568	3.2268	6.2447
SLE	Sierra Leone	2010	134.53	18.99	668.34	40.19	54.03	4.9018	2.9439	6.5048
SLE	Sierra Leone	2011	154.41	30.12	1640.75	50.79	66.35	5.0396	3.4052	7.4029
SLE	Sierra Leone	2012	211.03	10.54	335.75	49.14	40.88	5.352	2.3552	5.8164
SLE	Sierra Leone	2013	49.6	44.82	972.88	47.24	54.56	3.904	3.8027	6.8803
SLE	Sierra Leone	2014	44.83	47.68	1286.92	72.29	56.97	3.8029	3.8645	7.16
SLE	Sierra Leone	2015	50.99	30.58	1475.45	79.38	51.03	3.9316	3.4203	7.2967
SLE	Sierra Leone	2016	159.37	37.62	711.04	49.49	54.14	5.0712	3.6275	6.5667
SLE	Sierra Leone	2017	234.34	18.08	558.91	57.94	28.63	5.4568	2.8948	6.326
SLE	Sierra Leone	2018	102.9	35.49	1497.07	59.09	53.06	4.6338	3.5693	7.3113
ZAF	South Africa	1995	8.1	85.76	6217.49	89.97	89.78	2.0919	4.4516	8.7351
ZAF	South Africa	1996	8.1	147.18	8270.55	76.74	69.95	2.0919	4.9917	9.0205
ZAF	South Africa	1997	71.4	39.46	2397.81	87.89	83.99	4.2683	3.6753	7.7823
ZAF	South Africa	1998	92.99	31.96	650.46	42.74	72.78	4.5325	3.4645	6.4777
ZAF	South Africa	1999	104.7	40.92	710.86	60.59	56.12	4.6511	3.7116	6.5665
ZAF	South Africa	2000	139.75	114.54	1632.92	61.47	60.21	4.9399	4.7409	7.3981
ZAF	South Africa	2001	112.28	12.14	475.94	32.68	63.87	4.721	2.4965	6.1653
ZAF	South Africa	2002	219	30.92	314.71	27.09	33.5	5.3891	3.4314	5.7517
ZAF	South Africa	2003	83.71	9.54	483.94	73.34	53.31	4.4274	2.2555	6.182
ZAF	South Africa	2004	69.11	57.73	1278.8	68	90.08	4.2357	4.0558	7.1537
ZAF	South Africa	2005	174.27	81.23	829.99	35.98	68.85	5.1606	4.3973	6.7214
ZAF	South Africa	2006	16.31	104.6	2432.4	81.45	91.92	2.7918	4.6501	7.7966
ZAF	South Africa	2007	167.28	27.62	1410.7	55.87	75.33	5.1197	3.3185	7.2518
ZAF	South Africa	2008	144.76	18.02	723.19	92.4	38.35	4.9751	2.8915	6.5837
ZAF	South Africa	2009	125.16	33.33	3945.04	78.02	94.78	4.8296	3.5065	8.2802
ZAF	South Africa	2010	261.26	10.06	305.09	26.62	45.23	5.5655	2.3086	5.7206
ZAF	South Africa	2011	87.93	22.54	802.9	79.91	84.41	4.4765	3.1153	6.6882
ZAF	South Africa	2012	298.27	7.5	200.6	12.6	34.24	5.698	2.0149	5.3013
ZAF	South Africa	2013	119.04	39.83	1265.58	62.22	67.16	4.7795	3.6846	7.1433
ZAF	South Africa	2014	36.59	33	1875.41	92.4	78.28	3.5998	3.4965	7.5366
ZAF	South Africa	2015	142.2	15.06	1937.45	61.72	71.27	4.9572	2.712	7.5691
ZAF	South Africa	2016	52.33	18.32	622.96	29.86	57.62	3.9576	2.908	6.4345
ZAF	South Africa	2017	77.77	62.39	2722.19	66.81	88.26	4.3538	4.1334	7.9092
ZAF	South Africa	2018	167.85	37.17	944.3	76.47	39.19	5.1231	3.6155	6.8504
SDN	Sudan	1995	180.28	26.44	272.67	43.82	41.39	5.1945	3.2749	5.6083
SDN	Sudan	1996	87.94	92.07	3012.35	60.41	99.6	4.4767	4.5225	8.0105

SDN	Sudan	1997	214.14	18.5	969.41	39.23	42.81	5.3666	2.9178	6.8767
SDN	Sudan	1998	227.48	21.48	294.36	26.28	39.09	5.4271	3.0671	5.6848
SDN	Sudan	1999	249.34	17.13	382.64	42.11	31.41	5.5188	2.8408	5.9471
SDN	Sudan	2000	178.23	20.69	222.5	56.65	55.63	5.1831	3.0297	5.4049
SDN	Sudan	2001	243.63	9.12	158.2	41.38	28.12	5.4957	2.2105	5.0639
SDN	Sudan	2002	8.1	462.3	10241.6	92.4	97.13	2.0919	6.1362	9.2342
SDN	Sudan	2003	111.79	24.87	682.79	32.86	71.15	4.7166	3.2137	6.5262
SDN	Sudan	2004	68.74	28.47	622.38	35.18	51.66	4.2303	3.3489	6.4336
SDN	Sudan	2005	146.07	39.7	1095.56	65.39	75.7	4.9841	3.6814	6.999
SDN	Sudan	2006	91.91	50.45	1043.27	39.44	76.44	4.5208	3.921	6.9501
SDN	Sudan	2007	123.69	10.63	416.65	43.23	71.63	4.8178	2.3637	6.0322
SDN	Sudan	2008	284.3	25.78	611.75	44.22	46.94	5.65	3.2496	6.4163
SDN	Sudan	2009	123.41	30.52	483.84	31.09	99.6	4.8155	3.4184	6.1818
SDN	Sudan	2010	169.17	9.73	251.27	21.21	61.19	5.1309	2.2752	5.5265
SDN	Sudan	2011	118.51	88.61	1802.84	63.78	74.18	4.775	4.4842	7.4971
SDN	Sudan	2012	142.66	47.45	1856.05	71.44	54.97	4.9605	3.8597	7.5262
SDN	Sudan	2013	137.19	10.8	1039.73	73.22	63.1	4.9214	2.3795	6.9467
SDN	Sudan	2014	171.87	97.19	923.74	62.97	82.5	5.1467	4.5767	6.8284
SDN	Sudan	2015	228.09	26.51	904.72	49.47	78.36	5.4297	3.2775	6.8076
SDN	Sudan	2016	265.89	11.83	188.62	14.94	56.75	5.5831	2.4706	5.2397
SDN	Sudan	2017	161	90.38	3850.1	54.06	79.79	5.0814	4.504	8.2559
SDN	Sudan	2018	182.95	24.48	331.74	31.9	29.38	5.2092	3.1979	5.8044
SWZ	Eswatini	1995	46.48	55.69	3884.6	86.02	90.3	3.839	4.0198	8.2648
SWZ	Eswatini	1996	129.83	18.5	483.9	53.62	39.64	4.8662	2.9178	6.1819
SWZ	Eswatini	1997	210.45	28.26	1870.25	25.11	31.64	5.3492	3.3414	7.5338
SWZ	Eswatini	1998	204.62	27.07	839.23	36.85	55.79	5.3212	3.2984	6.7325
SWZ	Eswatini	1999	153.31	26.92	428.09	64.23	65.58	5.0325	3.2929	6.0593
SWZ	Eswatini	2000	206.22	9.67	261.45	36.24	58.46	5.3289	2.269	5.5662
SWZ	Eswatini	2001	175.2	25.26	1036.36	31.58	62.38	5.1659	3.2292	6.9435
SWZ	Eswatini	2002	230.84	14.47	699.48	81.95	64.06	5.4417	2.6721	6.5503
SWZ	Eswatini	2003	159.41	8.72	399.44	43.03	37.47	5.0715	2.1656	5.9901
SWZ	Eswatini	2004	108.83	11.19	614.82	58.56	60.2	4.6898	2.415	6.4213
SWZ	Eswatini	2005	163.05	39.08	1354.37	64.46	40.71	5.0941	3.6656	7.2111
SWZ	Eswatini	2006	8.1	19.04	2193.49	77.24	59.56	2.0919	2.9465	7.6932
SWZ	Eswatini	2007	166.74	28.51	353.58	30.54	61	5.1164	3.3503	5.8681
SWZ	Eswatini	2008	8.1	156.67	4921.54	92.4	98.45	2.0919	5.0541	8.5014
SWZ	Eswatini	2009	8.1	224.46	5268.29	92.4	99.6	2.0919	5.4137	8.5695
SWZ	Eswatini	2010	172.14	15.65	1052.54	67.08	77.52	5.1483	2.7505	6.959
SWZ	Eswatini	2011	174.16	38.95	2087.32	71.47	56.55	5.16	3.6623	7.6436
SWZ	Eswatini	2012	45.57	41.68	2463.07	58.35	84.57	3.8192	3.73	7.8092
SWZ	Eswatini	2013	80.88	48.84	1711.06	87.4	65.86	4.393	3.8885	7.4449

SWZ	Eswatini	2014	244.18	25.16	733.81	31.32	19.34	5.4979	3.2253	6.5983
SWZ	Eswatini	2015	98.77	27.06	676.56	59.24	65.88	4.5928	3.2981	6.517
SWZ	Eswatini	2016	303.5	19.04	276.34	12.6	23.67	5.7154	2.9465	5.6216
SWZ	Eswatini	2017	136.57	13.49	362.59	12.6	42.25	4.9168	2.6019	5.8933
SWZ	Eswatini	2018	168.71	30.2	370.08	47.43	82.53	5.1282	3.4078	5.9137
TZA	Tanzania	1995	263.5	25.46	532.54	26.63	19.99	5.5741	3.2371	6.2777
TZA	Tanzania	1996	146.99	47.29	1163.68	26.35	63.37	4.9904	3.8563	7.0593
TZA	Tanzania	1997	58.13	244.54	5452.66	91.8	71.09	4.0627	5.4994	8.6039
TZA	Tanzania	1998	128.12	17.24	930.83	89.49	81.57	4.853	2.8472	6.8361
TZA	Tanzania	1999	133.93	10.08	579.42	71.75	65.92	4.8973	2.3106	6.362
TZA	Tanzania	2000	29.71	28.88	1938.15	68.35	82.89	3.3915	3.3631	7.5695
TZA	Tanzania	2001	116.66	58.73	1317.59	61.7	52.91	4.7593	4.073	7.1836
TZA	Tanzania	2002	78.52	67.64	2194.91	84.5	65.6	4.3634	4.2142	7.6939
TZA	Tanzania	2003	209.2	19.39	327.91	55.4	63.61	5.3433	2.9648	5.7927
TZA	Tanzania	2004	139.43	11.91	660.83	45.63	83.96	4.9376	2.4774	6.4935
TZA	Tanzania	2005	114.55	64.94	2097.42	67.75	78.07	4.741	4.1735	7.6485
TZA	Tanzania	2006	128.39	11.88	385.37	50.3	42.78	4.8551	2.4749	5.9542
TZA	Tanzania	2007	154.21	67.07	1246.88	66.83	69.62	5.0383	4.2057	7.1284
TZA	Tanzania	2008	185.08	210.73	1320.76	54.82	97.56	5.2208	5.3506	7.186
TZA	Tanzania	2009	58.33	70.28	1444.61	65.27	74.94	4.0661	4.2525	7.2756
TZA	Tanzania	2010	55.05	85.62	1155.91	86.62	98.25	4.0082	4.4499	7.0526
TZA	Tanzania	2011	223.34	10.87	706.18	64.45	42.44	5.4087	2.386	6.5599
TZA	Tanzania	2012	104.39	8.8	990.81	65.86	65.09	4.6481	2.1748	6.8985
TZA	Tanzania	2013	25.63	40.72	2330.55	92.4	93.86	3.2438	3.7067	7.7539
TZA	Tanzania	2014	171.52	9.71	1270.15	50.08	64.59	5.1447	2.2732	7.1469
TZA	Tanzania	2015	173.05	7.23	318.01	65.27	41.98	5.1536	1.9782	5.7621
TZA	Tanzania	2016	16.7	281.1	10241.6	92.4	89.76	2.8154	5.6387	9.2342
TZA	Tanzania	2017	154.71	32.79	735.97	92.4	82.09	5.0416	3.4901	6.6012
TZA	Tanzania	2018	194.4	26.93	725.86	29.51	68.96	5.2699	3.2932	6.5874
TGO	Togo	1995	166.08	18.95	478.31	34.56	74.57	5.1125	2.9418	6.1703
TGO	Togo	1996	186.27	18.3	661.42	54.27	82.24	5.2272	2.9069	6.4944
TGO	Togo	1997	26.61	142.47	5216.51	91.2	89.98	3.2813	4.9591	8.5596
TGO	Togo	1998	162.68	24.25	647.77	80.08	57.03	5.0918	3.1884	6.4735
TGO	Togo	1999	112.99	54.32	3615.91	63.11	93.22	4.7273	3.9949	8.1931
TGO	Togo	2000	98.86	33.5	1261.23	76.42	81.13	4.5937	3.5115	7.1398
TGO	Togo	2001	204.98	13.98	498.01	61.12	38.2	5.3229	2.6376	6.2106
TGO	Togo	2002	252.71	4.8	158.2	32.09	19.37	5.5322	1.5686	5.0639
TGO	Togo	2003	277.42	4.8	158.2	12.6	37.04	5.6255	1.5686	5.0639
TGO	Togo	2004	239.81	11.64	305.86	56.54	43.76	5.4798	2.4544	5.7231
TGO	Togo	2005	128.12	33.31	677.55	72.01	63.45	4.853	3.5059	6.5185
TGO	Togo	2006	164.38	8.75	261.81	47.6	66.48	5.1022	2.1691	5.5676

TGO	Togo	2007	196.85	18.97	2362.7	65.03	74.23	5.2824	2.9429	7.7676
TGO	Togo	2008	146.22	29.22	707.42	55.27	79.52	4.9851	3.3749	6.5616
TGO	Togo	2009	146.97	4.92	158.2	30.98	18.3	4.9902	1.5933	5.0639
TGO	Togo	2010	201.31	9.06	234.15	44.14	49.83	5.3048	2.2039	5.456
TGO	Togo	2011	132.07	42.93	1038.52	57.95	74.03	4.8833	3.7596	6.9456
TGO	Togo	2012	79.54	61.43	2243.36	57.27	49.49	4.3763	4.1179	7.7157
TGO	Togo	2013	104.22	14.94	972.79	41.83	52.18	4.6465	2.704	6.8802
TGO	Togo	2014	186.42	23.86	899.7	39.53	41.87	5.228	3.1722	6.8021
TGO	Togo	2015	136.95	67.97	917.09	59.32	63.47	4.9196	4.2191	6.8212
TGO	Togo	2016	163.4	46.22	1162.48	56	85.65	5.0962	3.8334	7.0583
TGO	Togo	2017	189.26	19.07	328.01	42.63	79.61	5.2431	2.9481	5.793
TGO	Togo	2018	107.33	25.35	645.46	61.43	51.13	4.6759	3.2328	6.47
UGA	Uganda	1995	196.02	11.83	243.04	25.11	51.59	5.2782	2.4706	5.4932
UGA	Uganda	1996	166.43	35.28	419.21	67.21	65.61	5.1146	3.5633	6.0384
UGA	Uganda	1997	39.9	69.84	3872.57	75.9	87.84	3.6864	4.2462	8.2617
UGA	Uganda	1998	249.81	22.17	647.34	35.82	52.55	5.5207	3.0987	6.4729
UGA	Uganda	1999	97.46	44.04	2219.28	76.61	78.36	4.5794	3.7851	7.7049
UGA	Uganda	2000	8.1	145.79	3685.6	53.43	99.6	2.0919	4.9822	8.2122
UGA	Uganda	2001	54.78	57.93	2787.51	62.6	93.12	4.0033	4.0592	7.9329
UGA	Uganda	2002	56.66	99.53	863.57	76.86	57.17	4.0371	4.6005	6.7611
UGA	Uganda	2003	140.81	58.55	1962.88	37.01	74.87	4.9474	4.0699	7.5822
UGA	Uganda	2004	115.25	18.28	826.65	73.31	79.12	4.7471	2.9058	6.7174
UGA	Uganda	2005	110.31	8.45	735.88	78.19	70.42	4.7033	2.1342	6.6011
UGA	Uganda	2006	185.31	73.2	1356.85	50.94	76.65	5.222	4.2932	7.2129
UGA	Uganda	2007	163.37	30.43	441.98	49.5	57.45	5.096	3.4154	6.0913
UGA	Uganda	2008	161.5	6.33	158.2	49.29	50.67	5.0845	1.8453	5.0639
UGA	Uganda	2009	168.85	13.42	331.02	33.39	51	5.129	2.5967	5.8022
UGA	Uganda	2010	185.03	39.45	1099.61	67.73	30.59	5.2205	3.675	7.0027
UGA	Uganda	2011	8.1	77.68	4565.48	76.74	87.85	2.0919	4.3526	8.4263
UGA	Uganda	2012	108.14	24.32	411.77	40.66	47.31	4.6834	3.1913	6.0205
UGA	Uganda	2013	8.1	312.12	3702.84	73.29	71.24	2.0919	5.7434	8.2169
UGA	Uganda	2014	139.55	12.65	366.35	49.54	76.49	4.9384	2.5377	5.9036
UGA	Uganda	2015	136.36	15.81	513.04	66.68	67.68	4.9153	2.7606	6.2404
UGA	Uganda	2016	218.7	19.78	220.84	29.47	41.94	5.3877	2.9847	5.3974
UGA	Uganda	2017	229.84	21.1	209.34	12.6	29.56	5.4374	3.0493	5.344
UGA	Uganda	2018	152.62	39.84	586.08	32.09	58.78	5.028	3.6849	6.3735
ZMB	Zambia	1995	97.49	82.36	1844.82	73.33	87.69	4.5797	4.4111	7.5201
ZMB	Zambia	1996	174.76	26.78	351.55	70.36	43.44	5.1634	3.2877	5.8624
ZMB	Zambia	1997	95.33	59.59	1408.11	70.17	70.68	4.5573	4.0875	7.25
ZMB	Zambia	1998	136.61	24.33	1426.91	54.49	76.84	4.9171	3.1917	7.2633
ZMB	Zambia	1999	214.04	18.15	223.5	44.9	18.3	5.3662	2.8987	5.4094

ZMB	Zambia	2000	92.99	44.58	1165.66	58.03	66.77	4.5325	3.7973	7.061
ZMB	Zambia	2001	199.89	22.69	1002.58	45.64	48.44	5.2978	3.1219	6.9103
ZMB	Zambia	2002	189.84	38.15	604.87	31.56	49.13	5.2462	3.6415	6.405
ZMB	Zambia	2003	61.85	79.75	1475.9	89.39	69.88	4.1247	4.3789	7.297
ZMB	Zambia	2004	213.08	18	905.52	12.6	48.9	5.3617	2.8904	6.8085
ZMB	Zambia	2005	191.49	10.58	331.63	51.51	78.99	5.2548	2.359	5.804
ZMB	Zambia	2006	144.71	29.86	1565.73	53.84	58.8	4.9747	3.3965	7.3561
ZMB	Zambia	2007	76.95	44.83	1807.74	61.71	76.36	4.3432	3.8029	7.4998
ZMB	Zambia	2008	69.35	56.52	1361.62	92.2	99.6	4.2392	4.0346	7.2164
ZMB	Zambia	2009	94.56	238.11	4026.66	65.68	68.55	4.5492	5.4727	8.3007
ZMB	Zambia	2010	179.26	14.51	589.43	36.03	79.1	5.1888	2.6748	6.3792
ZMB	Zambia	2011	61.79	71.71	3455.07	75.07	79.48	4.1237	4.2726	8.1476
ZMB	Zambia	2012	171.03	55.33	742.6	57.18	85.29	5.1418	4.0133	6.6102
ZMB	Zambia	2013	39.35	64.84	2091.98	65.95	88.32	3.6725	4.1719	7.6459
ZMB	Zambia	2014	120.72	219.61	2512.53	44.58	73	4.7935	5.3919	7.829
ZMB	Zambia	2015	145.32	20.78	1033.32	42.43	58.17	4.9789	3.034	6.9405
ZMB	Zambia	2016	303.5	9.91	158.2	35.93	20.41	5.7154	2.2935	5.0639
ZMB	Zambia	2017	28.72	34.03	2750.01	77.83	82.02	3.3576	3.5272	7.9194
ZMB	Zambia	2018	252.14	9.92	373.8	42.8	57.42	5.53	2.2946	5.9237
ZWE	Zimbabwe	1995	148.47	33.63	413.83	41.19	54.05	5.0004	3.5154	6.0255
ZWE	Zimbabwe	1996	168.96	46.97	1868.06	51.17	57.68	5.1297	3.8495	7.5327
ZWE	Zimbabwe	1997	146	36.22	3260.61	92.4	71.02	4.9836	3.5896	8.0897
ZWE	Zimbabwe	1998	171.59	64.23	1926.35	58.89	78.85	5.1451	4.1625	7.5634
ZWE	Zimbabwe	1999	124.67	30.23	2079.06	59.02	86.19	4.8257	3.4088	7.6397
ZWE	Zimbabwe	2000	250.73	10.17	307.14	50.78	34.38	5.5244	2.3194	5.7273
ZWE	Zimbabwe	2001	100.93	339.37	1390.36	52.75	58.7	4.6144	5.8271	7.2373
ZWE	Zimbabwe	2002	225.5	21.83	171.12	19.53	44.54	5.4183	3.0833	5.1424
ZWE	Zimbabwe	2003	86.2	24.08	1140.71	61.97	91.19	4.4567	3.1814	7.0394
ZWE	Zimbabwe	2004	132	17.73	486.1	48.19	74.37	4.8828	2.8753	6.1864
ZWE	Zimbabwe	2005	52.67	25.56	709.23	62.91	50.05	3.964	3.241	6.5642
ZWE	Zimbabwe	2006	172.4	49.28	915.93	85.93	60.34	5.1498	3.8975	6.8199
ZWE	Zimbabwe	2007	250.03	9.96	411.88	42.29	30.58	5.5216	2.2986	6.0207
ZWE	Zimbabwe	2008	130.65	34.63	422.96	12.6	46.53	4.8725	3.5447	6.0473
ZWE	Zimbabwe	2009	121.28	31.76	747.43	59.43	86.87	4.7981	3.4582	6.6166
ZWE	Zimbabwe	2010	49.32	100.48	5746.98	84.79	63.75	3.8983	4.61	8.6564
ZWE	Zimbabwe	2011	118.74	17.24	387.7	47.21	32.61	4.7769	2.8472	5.9602
ZWE	Zimbabwe	2012	11.83	30.73	2599.78	81.11	70.08	2.4706	3.4252	7.8632
ZWE	Zimbabwe	2013	65.14	59.72	1318.05	65.04	76.46	4.1765	4.0897	7.1839
ZWE	Zimbabwe	2014	154.5	42.75	1308.58	57.63	72.14	5.0402	3.7554	7.1767
ZWE	Zimbabwe	2015	240.14	18.71	783.22	55.21	58.12	5.4812	2.9291	6.6634
ZWE	Zimbabwe	2016	303.5	4.8	158.2	12.6	40.84	5.7154	1.5686	5.0639

ZWE	Zimbabwe	2017	90.73	71.63	2828.1	57.64	46.39	4.5079	4.2715	7.9474
ZWE	Zimbabwe	2018	249.26	7.38	158.2	71.07	61	5.5185	1.9988	5.0639

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