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Economic Crisis and Child Well-being in the West and Central Africa Region

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EXECUTIVE SUMMARY

The COVID-19 pandemic that swept over the world from early 2020 has triggered both health and economic shocks of unprecedented proportions in recent memory. Some estimates suggest that the consequences of these shocks will likely erase most of the progress made in global development over the past two decades. Many countries now risk falling further behind the attainment of national and international development goals, including the UN's Sustainable Development Goals. Children are particularly vulnerable to the effects of these shocks due to their persistent higher levels of vulnerability, and the reality that school closures and other COVID-19 containment measures can be more damaging to children. This report examines the effect of previous economic crises on children's well-being in UNICEF's West and Central Africa Region (WCAR) and makes projections regarding the potential impacts of COVID-19-induced economic crises on priority indicators for the region.

Compared with other regions, most countries in the WCAR have experienced low to moderate caseloads of COVID-19 and deaths, although this may be due to different testing and reporting regimes. For this reason, the stringency of containment measures has also been relatively moderate. Nonetheless, actual and forecast economic growth figures for 2020 and 2021, respectively, fall short of pre-pandemic projections. Economic and social support responses have also been varied, but generally limited in depth and breadth.

The WCAR experienced similar aggregate economic shocks in 2008 (because of the global financial crisis) and in 2014 (because of global commodity price shocks and partly due to outbreaks of Ebola virus disease). An assessment of the correlation between economic performance and the priority indicators of immunization, stunting, education, and child marriage shows that periods of growth generally lead to improvements in these indicators, and that the two aforementioned economic shocks had unambiguous negative impacts on progress.

The 2008 and 2014 crises greatly impacted child well-being, with the magnitude of the impact proportional to the slump in aggregate income. For instance, the percentage of children who received three doses of the combined diphtheria, tetanus toxoid and pertussis (DTP) vaccine reduced by 4.41 and 12.04 percentage points due to the 2008 and 2014 crises, respectively. Similarly, primary school completion rates among children of the relevant age group reduced by 5.1 and 13.8 per cent due to the 2008 and 2014 crises, respectively.

For the first time since the last six decades, economic output in sub-Saharan Africa (SSA) shrank by 2.4 per cent in 2020 as a result of the pandemic. Eleven out of the 24 countries in the WCAR recorded a negative real gross domestic product growth rate ranging from -14.8 to -0.9 per cent; output was stagnant in two countries, while the remaining showed a modest output expansion ranging from 0.4 to 7 per cent. The implications of this magnitude of crisis will mean that well-being conditions for children worsen. For instance, even more infants (over 867,000) from the 2020 birth cohort will not receive the DTP vaccine, leading to a total of more than 6.7 million infants born in 2020 not being completely immunized as a result of the crisis.

Similarly, the prevalence of undernourishment is projected to increase by 1.38 percentage points from the pre-pandemic level of 16.53 per cent. The estimates based on the simulated impact of the COVID-19 economic crisis on immunization and undernourishment are conservative, as the simulation exercise does not account for containment measures adopted to limit the spread of COVID-19. These measures can amplify the impact of the virus. For instance, containment measures will reduce mobility to seek immunization as well as reduce household economic activities, leading to an overall drop in household income – and hence will affect the demand for key services for children.

To avert these reversals in progress, governments are strongly encouraged to not cut financing for essential child services such as immunization and education as part of austerity measures. Indeed, extra economic support will be needed to offset the anticipated economic effects on households. The international development community are also strongly encouraged to provide additional resources and technical support to ensure that the well-being of children in the WCAR is protected and promoted to the greatest extent possible during this period of economic and social uncertainty.

1. INTRODUCTION

1.1 Background and conceptual framework

The outbreak of the disease caused by novel coronavirus SARS-CoV-2 (COVID-19) in 2019 and the associated necessary mitigation measures to stop its spread caused an abrupt fall in the global production and demand for goods and services. Economic output in sub-Saharan Africa (SSA) shrank by 2.4 per cent in 2020 as a result of the pandemic, creating the deepest recession in over six decades (World Bank 2021). Shrinking government revenue as a result of the pandemic and the need to borrow on domestic and international markets to finance expenditure has given rise to widening budget deficits and a sharp increase in government debt. The debt-to-gross domestic product (GDP) ratio in SSA increased from 62 to 70 per cent of GDP on average (International Monetary Fund 2020).

The decrease in economic output was, however, lower than initial projections largely due to slower spread of COVID-19, which enabled some mitigation measures to be eased. For instance, by the end of December 2020, the total cumulative confirmed COVID-19 caseloads and deaths remained low in the West and Central Africa Region (WCAR) compared with other regions of the world. With the exception of Cabo Verde – with the highest rate – confirmed total cases in the other countries averaged 127 per 100,000 population, while death rates stood at an average of 21 per 1 million (*see Figure 1*). In comparison, total confirmed cases in continental America and Europe were 1,792 and 3,265 per 100,000 population respectively, while death rates stood at 381 and 597 per 1 million, respectively. The discoveries of new variants of COVID-19 with higher infection rates can pose a challenge in maintaining these low levels.

Figure 1: Standardized total confirmed COVID-19 caseloads and deaths as of 31 December 2020
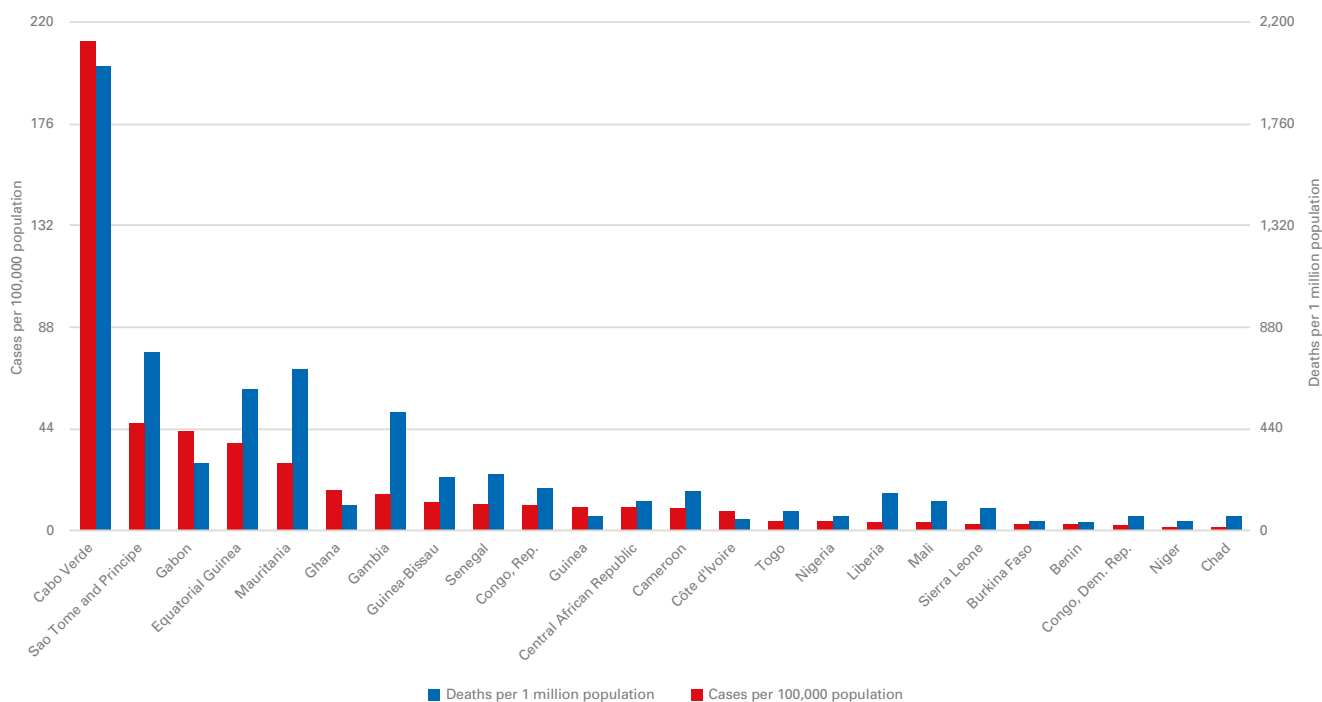
Source: Authors' elaboration based on data from World Health Organization COVID-19 situation database.

Notwithstanding the low incidence and fatality rates of COVID-19 among the general population and in children, there are various ways the outbreak of COVID-19 will affect the well-being of children in the WCAR. First, the application of containment measures adopted by governments in the WCAR to halt the spread of COVID-19 could be unfavourable to children. The stringency index developed by the University of Oxford is appropriate to determine how containment measures were rolled out.[1] A timeline of stringency and containment measures applied in the WCAR between March 2020 and December 2020 is presented here (*see Figure 2*). In early March 2020, there were virtually no stringency measures put in place in the whole region. One month later, all countries had adopted stringency measures to contain the spread of COVID-19, with May 2020 being the peak month during which most measures were in place.

Figure 2: A timeline of stringency and containment measures adopted in West and Central Africa
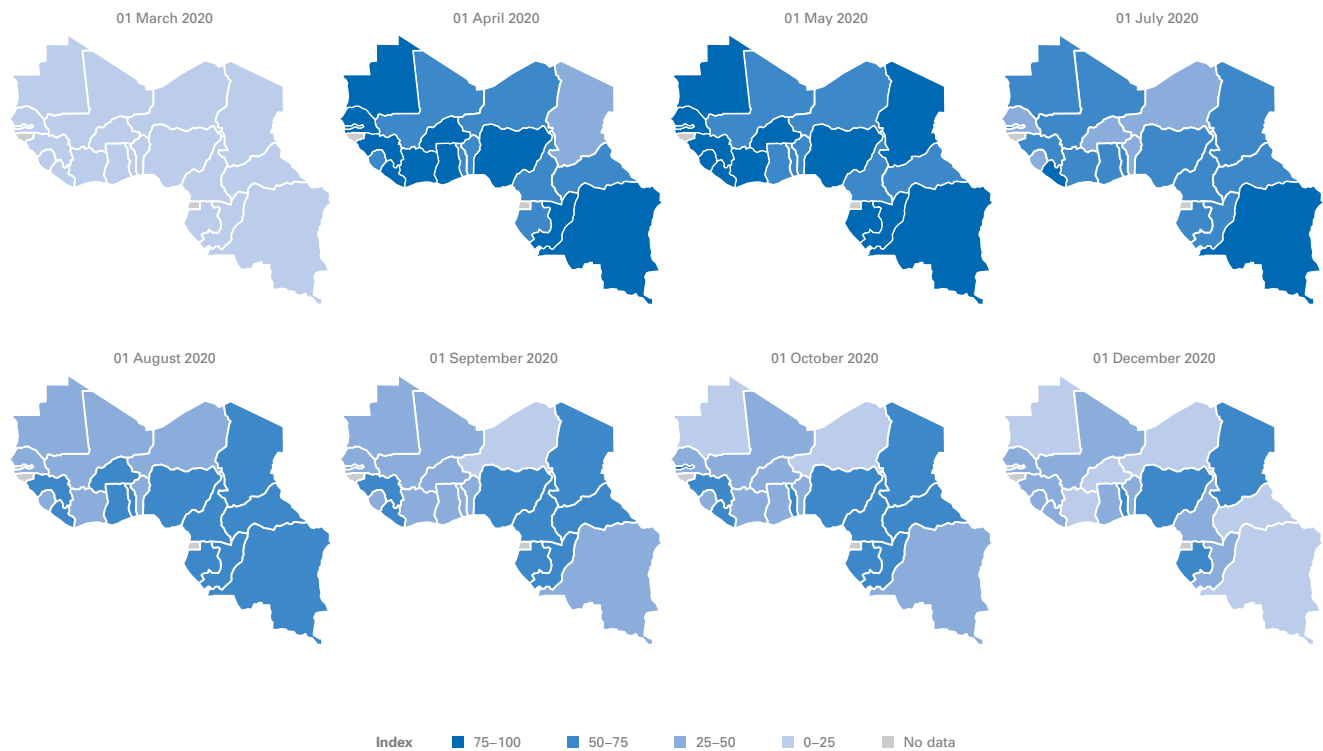
Source: Authors' elaboration based on Oxford COVID-19 Government Response Tracker.
Note: The designations employed in this publication and the presentation of the material do not imply on the part of UNICEF the expression of any opinion whatsoever concerning the legal status of any country or territory, or of its authorities or the delimitations of its frontiers.

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1   The Blavatnik School of Government at the University of Oxford records measures taken by governments in response to COVID-19. Containment measures such as school and workplace closures, cancellation of public events, restrictions on gathering, closure of public transport, stay-at-home requirements, and restrictions on internal and international movements, are recorded on daily basis. These containment measures are summarized in a stringency index, which may be used for cross-country analysis and comparison. Further information on whether these measures are targeted by geographic limit, sector or country-wide are used for a stringency index that represents the level of containment measures (see Hale et al. 2020 for details).

By July 2020, some containment measures began to be gradually reversed. However, most of these reversal policies targeted workplace closure, internal movement, and public events. School closures continued to be in place while most other measures were reversed. To highlight the disparity, we computed the number of days schools were closed as a percentage of the number of school days for the year 2020, excluding days of academic break. Similarly, we computed the percentage of number of days workplaces were closed and public events were banned over the total number of days in 2020 (*see Figure 3*). Comparing these measures shows that schools were closed for an average of 80 per cent of 2020 compared with 44 per cent (workplace closures) and 59 per cent (public events banned) (*see Figure 3*). This shows that policies primarily taken in response to the pandemic disproportionately affected children even though COVID-19 incidence and fatality rate among children is minimal.

To a large extent, the closure of schools was the predominant containment measure used in the WCAR compared with other restriction policies such as bans on public gathering. Several studies have analysed the impact of school closures on children. These include impacts on learning loss (Engzell, Frey and Verhagen 2021), mental health (Lee 2020), and violence and maltreatment (Baron, Goldstein and Wallace 2020), among many others.

Figure 3: Children were disproportionately affected by the stringency measures

Percent of Days of Closures of School, Workplace and Public Events

| Schools | Workplace | Public events |

Percent ■ 80–100 ■ 60–80 ■ 40–60 ■ 20–40 ■ 0–20 ■ No data

Source: Authors' elaboration based on Oxford COVID-19 Government Response Tracker.
Note: The designations employed in this publication and the presentation of the material do not imply on the part of UNICEF the expression of any opinion whatsoever concerning the legal status of any country or territory, or of its authorities or the delimitations of its frontiers.
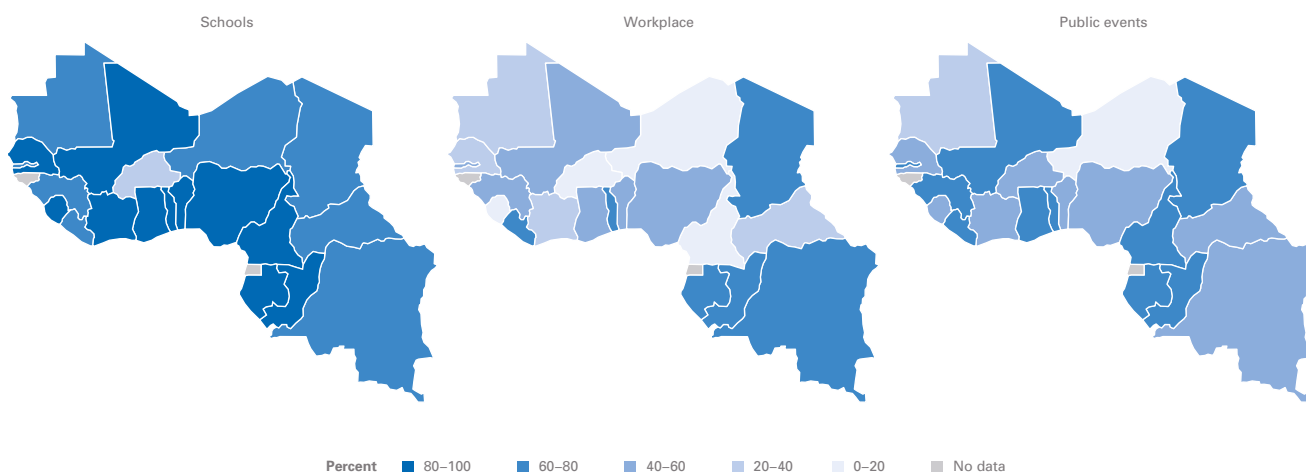
Another important channel through which COVID-19 will affect children is the associated economic shocks and crises both during the health pandemic and long after the health crisis has been overcome. This is because economic shocks and crises create disruptions in economic activities that can further distort growth trajectories. Most critically, economic crisis affects the ability of governments and households to undertake long-term investments necessary to enhance the well-being of children.

This report focuses on how previous economic crises of similar magnitude in the last two decades affected children and makes projections in the context of the economic crisis due to COVID-19. The report is organized as follows: the remainder of this chapter presents a conceptual theory of economic crisis and child well-being, after which the scope and research questions are also stated, then the main sources of data used for the analysis are discussed. Chapter 2 examines historical trends of economic shocks in the WCAR between 2000 and 2018. The similarities between the 2014–2015 economic shock and the COVID-19 economic shock (global decline of commodities trade and prices) lead to further examination of the commodities trade structure in the WCAR. This is to ascertain the likelihood of West and Central Africa re-experiencing a similar magnitude of shocks in the aftermath of the COVID-19 crisis. Chapter 3 presents the core of the analysis: section 3.1 first examines correlations between variations in economic output per person and selected child well-being indicators; and section 3.2 estimates the causal relationship between economic crises and child well-being. Lastly, chapter 4 draws on the current macroeconomic outlook to derive the potential minimum impacts of the current crisis on children.

1.2 A conceptual theory of economic crisis and child well-being

Negative economic shocks and crises can be short run, where economies recover quickly to pre-crisis levels, or can be prolonged thereby resulting in slow economic growth and recession. Economic crises – whether they be short-term deviations from the business cycle trend or negative shocks to aggregate economic growth – impact the ability of households to maintain current consumption and investment levels without a significant redistribution of resources.

Aggregate shocks can originate from the misalignment of a country's economic policies or from fluctuations in international markets which are then transmitted across borders through economic and trade relations. Similarly, health shocks such as outbreaks of disease transmitted domestically or across national borders adversely affect households' livelihoods and economic activities, which can lead to larger aggregate negative economic impacts. For instance, past outbreaks of human immunodeficiency virus (HIV) negatively impacted aggregate output in affected countries (Cuddington 1993; Cuddington and Hancock 1994). Persistent health epidemics such as malaria have also negatively affected livelihoods (Gallup and Sachs 2001; Deressa, Hailemariam and Ali 2007). The 2014 outbreak of Ebola virus disease (EVD) also contributed to a slump in aggregate output in some West African countries (Gatiso et al. 2018; Bowles et al. 2016).

Irrespective of their origin, negative economic shocks can directly and indirectly affect children's well-being. Shocks to GDP often compel governments to reduce investments in key services that are fundamental to child well-being. Baird et al. (2011) compute that a 1 per cent reduction in GDP per capita in developing countries results in an increase in infant mortality of between 24 and 40 per 1,000 live births. Similar results have been established linking country-specific economic crises to child mortality. For instance, infant mortality increased from 5 to 7 per cent during Mexico's economic crisis in 1995–1996 (Cutler et al. 2002). Child mortality in Peru also increased by 2.5 percentage points during the country's economic crisis in the late 1980s (Paxson and Schady 2005).

On the demand channel economic crises and unfavourable macroeconomic conditions affect children through negative shocks to household income (Harper et al. 2011). A simple conceptual framework developed by Ferreira and Schady (2009) to examine the impact of aggregate economic shock on children's education and health outcomes shows that aggregate shocks have both income and substitution effects on households. The income effect leads to variations in the resources available to households for investment in education and health; hence, during recessions, a deterioration of child outcomes is expected especially if households are credit constrained. In an extensive review of the literature, the authors showed that in Africa and low-income Asian countries, infant mortality rises, while school enrolment and nutrition fall, during economic recessions.

1.3 Research scope and questions

The above-discussed conceptual framework suggests that an aggregate negative economic shock poses an undeniable challenge to achieve the child-focused targets of the Sustainable Development Goals (SDGs). In line with the objectives of the SDGs, UNICEF's Regional Office in West and Central Africa (WCARO) has selected key targets under the broader goals of health, nutrition, education, child protection and environment to accelerate and consolidate gains in these areas. The key results under the SDGs are immunization, prevention of stunting, equitable and sustainable access to education, improved learning outcomes, prevention of child marriage and ending open defecation. *Table 1* lists these key strategic programme areas and their corresponding SDGs which form the main outcome areas of interest in this report.

Table 1: Key Sustainable Development Goal targets for children in West and Central Africa

Key result area	Sustainable Development Goal area
Immunization	Immunization is the main preventive instrument at the foundation of all child-related SDG indicators.
Prevention of stunting	This key programme area is linked with SDG 2.1 and SDG 2.2 and all sub-indicators.
Equitable and sustainable access to education	This programme area is linked with SDG 4.1, 4.6 and 4.7 and all sub-indicators.
Child marriage	This programme area is linked with SDG 5.3.1.
Ending open defecation	This programme area is linked with SDG 6.2 and all sub-indicators.

Source: Authors' compilation based on a UNICEF WCARO internal document.

In view of the above, the following questions are addressed in this report to assess the potential impact of the COVID-19 crisis on child outcomes:

1. How do economic crises affect child outcomes?

2. How sensitive are child well-being indicators to changes in economic conditions?

3. How did past economic crises in the WCAR affect child well-being indicators?

4. What are the expected impacts of the COVID-19 economic crisis on child well-being in the WCAR?

1.4 Data sources and availability

The study draws information from various database sources to build a macro panel dataset.[2] The quasi-experimental method central to this analysis relies on time series data of variables and indicators over a sufficiently long interval to detect the impact of a shock event on an indicator. Most importantly, the interval should be sufficient to capture before and after trends of the shock event. Furthermore, to ensure policy relevance of the estimates, we placed a time interval between 2000 and 2018 for each variable or indicator.[3]

To this end, three main categories of data are utilized. First, a time series macro data capturing aggregate income for all countries. The preferred variable for this category is per capita GDP. GDP per capita is also a proxy for standard of living, thus making it more suitable than non-normalized GDP. This information is extracted from the World Development Indicators compiled by the World Bank.

The second set of data regards the list of indicators in *Table 1* as main outcome areas. The availability of data on these indicators presents a mixed scenario. While some indicators had consistent time series data, other indicators had only a few data points available, making them unsuitable to perform the statistical analysis and inference required by the estimation framework. Data on immunization coverage measures the percentage of children aged between 12 months and 23 months who have received vaccination of antigens. These data come from the joint World Health Organization (WHO) and UNICEF Immunization Analysis and Insights Unit which performs monitoring, surveillance and risk assessment for all countries' immunization coverage.

Data on the percentage of children being stunted had more than three-quarters of the potential data points missing, making them unsuitable to perform and derive statistical analysis. To remedy this shortcoming, other indicators measuring food security and nutrition were used as proxies. These indicators include vitamin A supplementation coverage rate, prevalence of undernourishment, average dietary energy supply adequacy and average daily protein supply per grams per capita. While the vitamin A supplementation data were extracted from the World Development Indicators, the nutrition and food security indicators were extracted from the food security database of the Food and Agriculture Organization of the United Nations (FAO).

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2   The list of databases is provided in Annex A.

3   With 19 time series data points for each variable (covering 24 countries in the West and Central Africa Region (the potential number of observations for countries and time series data points is given by).

Similarly, several indicators specific to SDGs 4.5, 4.6 and 4.7 had various missing data points ranging from 43 per cent to 94 per cent of the expected observations. Primary school completion rate and lower secondary school completion rate, both computed on the relevant age group, satisfied the minimum requirement for data point availability to be used in the empirical analysis. We complement these two indicators with the education index computed by the United Nations Development Programme. The index is computed as an average of the expected years of schooling and mean years of schooling, thus capturing both education level and literacy of the general population.

The most appropriate indicator for SDG 5.3.1 is the proportion of women aged 20–24 years who were married or in a union before the ages of 15 and 18. Unfortunately, these two indicators are only available for 13 per cent and 17 per cent of the total data points, respectively. The lack of series in particular makes these data unsuitable for applying the estimation method. To overcome this challenge, we use the adolescent fertility rate, defined as births per 1,000 women aged 15–19 years. In spite of adolescent fertility rate not being a direct measure, a large proportion of teenage mothers are either already married or are sometimes forced to marry immediately after birth (Yaya, Odusina and Bishwajit 2019). Additionally, adolescent mothers are more likely to experience complications during pregnancy and childbirth, putting them at a higher risk of maternal mortality. The last variable of interest in our outcome list is open defecation. The series data were largely available.

The third set of variables are contextual variables that are predictors of the outcome variable though not the main explanatory variable of the econometric model. These include population density, percentage of GDP on health expenditure, per capita official development assistance received and age dependency ratio. Time series data on the indicators were extracted from the World Bank's World Development Indicators.

2. TREND IN AGGREGATE INCOME, SHOCKS AND SOURCES, AND IMPLICATIONS FOR CHILD WELL-BEING

2.1 Trend in gross domestic product and past economic shocks in West and Central Africa

Before the onset of the global financial crisis in 2008, the West and Central Africa Region (WCAR) enjoyed a period of sustained growth from 2000 onwards. Gross domestic product (GDP) recorded a yearly average growth of 5.34 per cent in the region during the pre-crisis period between 2000 and 2007. Per capita GDP increased from US$1,517 in 2000 to US$2,206 in 2008 in constant prices, representing a cumulative growth of 45 per cent over the period (*see Figure 4*). This growth halted with the financial crisis in 2008. A tentative recovery to pre-crisis levels by 2012 was short-lived as the plunge in commodities prices in 2014–2015, and the effects of the Ebola crisis, led to a significant reduction in GDP per capita across the region. Indeed, the GDP per capita in 2019 was still lower than that of 2007, indicating the WCAR was poorer in 2019 compared with 2007.

Accordingly, the historical trend in the West and Central Africa regional average per capita GDP between 2000 and 2018 can be subdivided into three periods. The period of sustained growth falls between 2000 and 2007/2008, followed by a period of stagnation between 2008 and 2013/2014, then lastly a period of decline between 2014 and 2019. These three periods resonate with the general picture of yearly variations in key outcome indicators. For instance, during the period of sustained growth, the coverage rate for Bacillus Calmette–Guérin (BCG) immunization increased at a yearly average of 2.20 percentage points, while the prevalence of undernourishment also decreased by an average of 2.89 percentage points per year. As income levels stalled in the immediate period following the global financial crisis, there was also a slowdown in the increase of the BCG immunization coverage rate between 2008 and 2013, which declined to a 1.09 percentage points increase per year. Similarly, the pace of decline in the prevalence of undernourishment decreased from 2.89 percentage points per year in the period of growth to 1.73 percentage points per year in the period of stagnation.

Figure 4: Complicated recovery after the 2008 global financial crisis
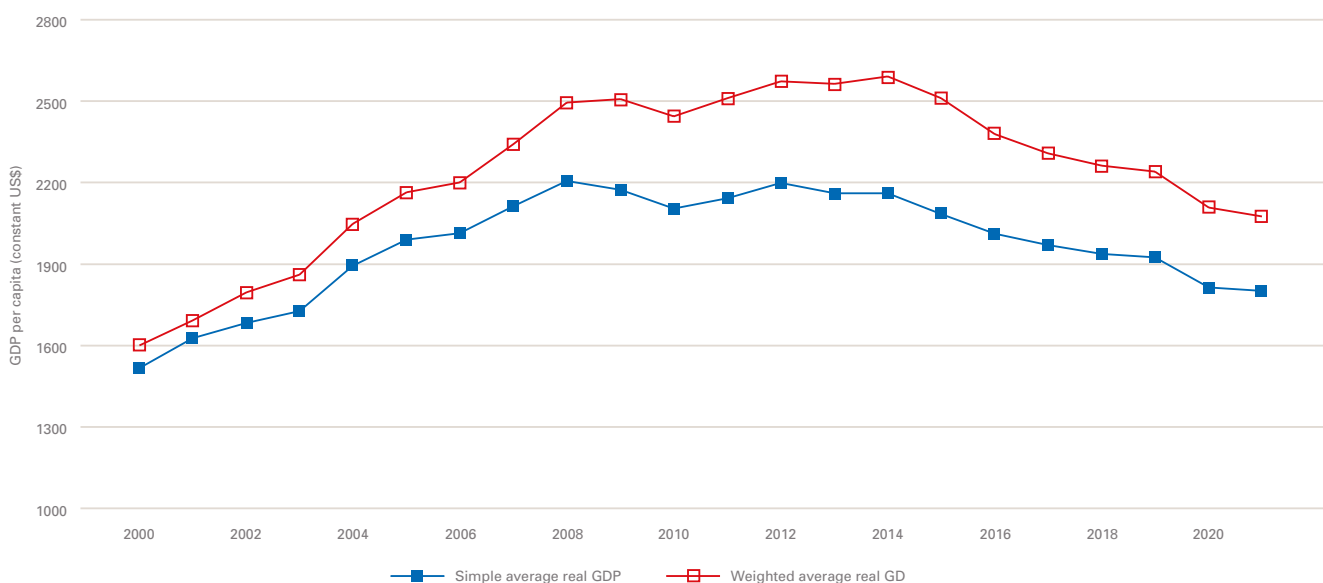
Source: Authors' elaboration based on data from World Development Indicators database.

To put the number into perspective, the child population aged 0 to 11 months increased, on average, by 2.5 per cent yearly between 2000 and 2007 and 2.10 per cent yearly between 2008 and 2013 in the region. The growth in the child population and the reduction in the BCG coverage rate las led to an increased number of children not immunized. While the above description remains an assumption, it does underline that the number of immunization doses administered yearly must at least grow in proportion to the country's birth rate if we want to ensure that the total number of children not immunized will not increase.

Plotting the GDP per capita trend at country level shows signs of heterogeneity among countries. For instance, a closer look at the GDP trends shows that the "golden growth period" between 2000 and 2008 was concentrated in just some countries: Cabo Verde, Equatorial Guinea, Ghana, Nigeria, and Sao Tome and Principe (*see Figure 5*). Given that aggregate income increased in few countries while the majority saw stagnant growth, the implications of such a growth pattern lead to two scenarios.

If all countries were on a similar level of per capita GDP, then the increase of aggregate income in some countries would lead to higher inequality between countries in the region. Such a pattern seemed to have occurred among the group of countries in the bottom left and right panels of *Figure 5*.

Likewise, if growth rate is concentrated in countries with above-average income levels, such a pattern will also contribute to a widening of the income gap between countries. Add to this growing inequality, and the standard of living in some countries has remained stagnant, while in other countries (e.g., Equatorial Guinea, Nigeria) living standards have plummeted after the 2008 crisis.

Figure 5: Uneven growth and increasing inequality between West and Central Africa Region countries
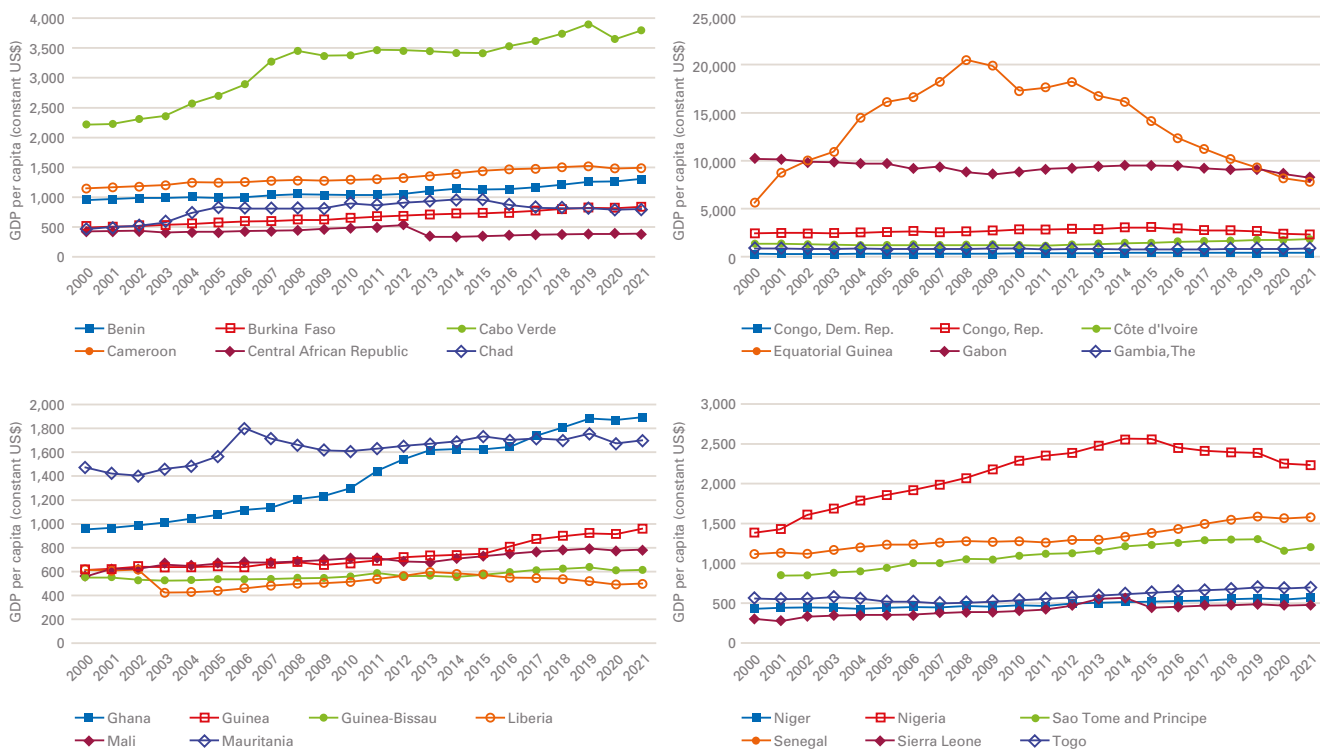
Source: Authors' elaboration based on data from World Development Indicators database.

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2.2 Sources of aggregate income slump between 2000 and 2018

The trend in aggregate income examined above showed three periods with different growth patterns. This section analyses the basic macroeconomic structure to understand the sources of growth and slumps observed during the period under consideration. The starting points are the sources of economic growth and its impact on children well-being.

Arbache and Page (2009) argued that the spike in Africa's growth rate recorded in the period 2000–2008 was mainly driven by the rising prices of natural resources and commodities. As such, without policies to reduce dependency on commodities, the economies remain fragile to shocks and volatility in the commodities market. The first signs of these fragilities emerged in the aftermath of the global financial crisis in 2008–2009. The global financial crisis in 2008 can be traced to the United States subprime mortgages crisis which escalated to global level. The most affected sector of the economy was the financial and banking sector at the time of outbreak. Given the region's low global financial integration, the level of impact remained contained in the initial stages.

While the WCAR did not suffer a direct contagion of the global financial crisis, it could not escape the indirect effects through global economy linkages. These indirect channels had been the most significant transmission mechanism of the global financial crisis on the region's output (Aryeetey and Ackah 2011). Some of these indirect channels include reductions in remittances, foreign direct investment and tourism inflows. For instance, the International Monetary Fund (IMF) estimated that a 1 percentage point reduction in growth in host countries led to a 4 per cent decline in remittances to low-income countries (International Monetary Fund 2009).

Other consequences of the global financial crisis were the declining demand for exports and declining export prices. This process revolved into the commodities market price crisis observed in 2014–2015. The commodities price crash is linked to multiple causes, one being the sudden drop in oil prices, which triggered down to other commodities such as precious metals and raw materials. Baffes et al. (2015) attribute the sharp decline in oil prices to underlying demand and supply conditions as well as a significant shift in the price-targeting objectives of the Organization of the Petroleum Exporting Countries (OPEC). On the demand side, slowdown in economic recovery in large emerging markets in the aftermath of the global recession contributed to low demand for energy. On the supply side, the rise in oil production in the United States and Canada as well as the increase in alternative sources of energy led to quantity supply of oil that outstripped demand. In view of these developments, OPEC abandoned its price targeting strategy while maintaining the same levels of production in an attempt to preserve its market share (Baffes et al. 2015).

2.2.1 Parallels between the COVID-19 economic crisis and the global financial crisis

Given the evolution of the global financial crisis into a commodities market crisis, one may wonder whether there are parallels that can be drawn between the global financial crisis and the COVID-19-induced economic crisis. While a perfect prediction of the trajectory of the COVID-19 crisis is uncertain due to many health factors, Foroni, Marcellino and Stevanovic (2020) showed that lessons of the financial crisis can be used to simulate COVID-19 recession and recovery patterns.

The likelihood that the COVID-19 recession may follow a similar pattern to the global financial crisis can be valuable to unpack potential channels of effects on the economy and children's well-being. Considering the large drop in aggregate income across the region, the starting point is to examine pre-existing macroeconomic conditions in 2013 and 2018. The abrupt shutdown of the world economy

to prevent the spread of COVID-19 led a to simultaneous demand and supply macroeconomic shock. While some sections of the economy are gradually reopening by allowing the return to the workplace, thereby lessening the supply shock, the effect on demand is likely to be prolonged for the foreseeable future.

The most plausible channel through which a global recession will impact economies in sub-Saharan African (SSA) countries is through trade (Allen and Giovannetti 2011). Hence, to understand how a prolonged weakened demand for commodities products will impact countries in West and Central Africa, we compare the composition of merchandise exports a year before the commodities price crisis in 2013 and 2018. Merchandise export by WCAR countries is dominated by commodities products, such as agricultural raw materials, fuels and mining products (*see Figure 6*). In addition, there have not been significant changes to the composition of merchandise trade between 2013 and 2018.

Figure 6: Export of commodities products dominates merchandise trade in West and Central Africa

Distribution of West and Central Africa Merchandise Export
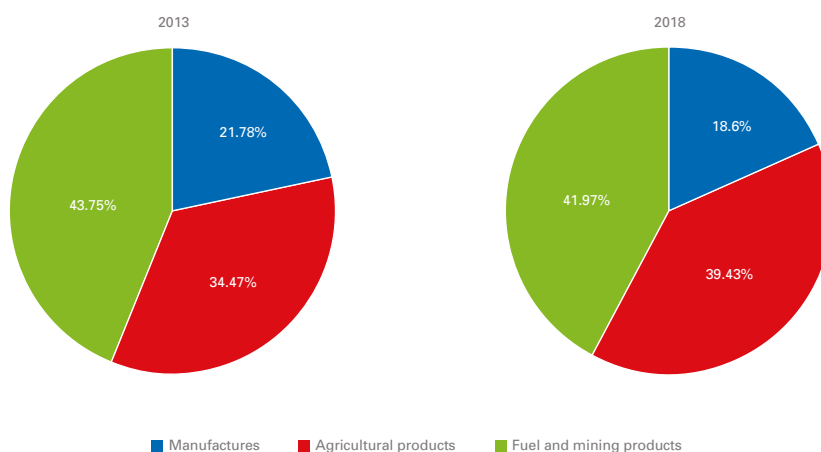
2013 — Manufactures: 21.78%, Agricultural products: 34.47%, Fuel and mining products: 43.75%

2018 — Manufactures: 18.6%, Agricultural products: 39.43%, Fuel and mining products: 41.97%

■ Manufactures ■ Agricultural products ■ Fuel and mining products

Source: Authors' elaboration based on data from World Development Indicators database.

The importance of commodities is further emphasized by the share of merchandise export in GDP. Across the region, merchandise exports account for approximately 22 per cent of GDP (*see Figure 7*). This ranges from 3.7 per cent in Cabo Verde to more than 50 per cent in the Republic of Congo. Additionally, merchandise exports account for a quarter of GDP in more than half of the countries in West and Central Africa. The relative significance of commodities through merchandise export for GDP underlines the need to closely observe developments in the commodities market as changes in price or demand will undoubtedly affect the economies of countries in the WCAR.

Figure 7: Merchandise export accounts for a quarter of GDP in half of the countries in the West and Central Africa Region

Share of merchandise export to GDP, 2018
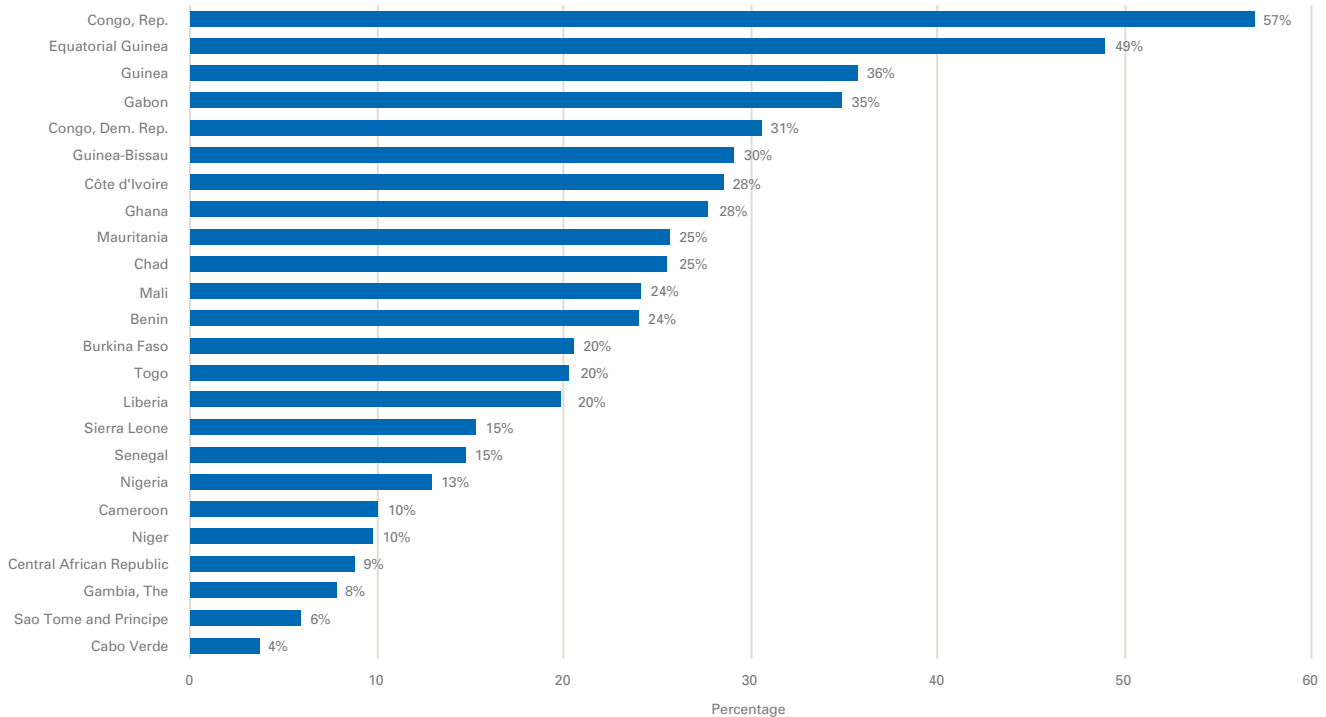
Country	Percentage
Congo, Rep.	57%
Equatorial Guinea	49%
Guinea	36%
Gabon	35%
Congo, Dem. Rep.	31%
Guinea-Bissau	30%
Côte d'Ivoire	28%
Ghana	28%
Mauritania	25%
Chad	25%
Mali	24%
Benin	24%
Burkina Faso	20%
Togo	20%
Liberia	20%
Sierra Leone	15%
Senegal	15%
Nigeria	13%
Cameroon	10%
Niger	10%
Central African Republic	9%
Gambia, The	8%
Sao Tome and Principe	6%
Cabo Verde	4%

Source: Authors' elaboration based on data from World Development Indicators database.

The outbreak of COVID-19 and subsequent lockdown measures were accompanied by a sharp decline in commodity prices (World Bank Group 2020a). Measures taken to control the outbreak led to unique simultaneous demand and supply shocks to commodities. Crude oil has been the most affected commodity, particularly due to reduced energy demand for travel because of restrictions on mobility to curtail the spread of COVID-19. For instance, the crude oil price reduced by more than 60 per cent in the first quarter of 2020 while demand also reduced by 10 per cent (World Bank Group 2020a).

While the easing of current mobility restrictions may slightly improve energy demand, a full recovery of both commodity demand and prices could be protracted beyond the easing of restrictions. First, during the 2008 global financial crisis, governments were able to enact stimulus packages in addition to financial sector bailouts and restructuring to shorten the length of the crisis. However, the recovery process for the COVID-19 crisis is dependent on successful vaccine development, which will allow virtually all mobility restrictions to be eased. The uncertainty about the potential timeline for ending the health crisis reflects on predicting the end of the economic crisis.

Another question to address is whether the shock to commodity prices will recover to pre-pandemic levels. Shocks to commodity prices may be transitory – whereby full recovery is expected once the shock cycle ends – or persistent, whereby the effect tends to be permanent. If shocks are transitory and cyclical – whereby periods of 'boom and bust' repeat at intervals – counter-cyclical policies can be

adopted to level off the net impact of price shocks. Alternatively, if shocks to commodity prices tend to be permanent then structural policies are needed to offset the impact of the shock. In a decomposition of price shocks to commodities from 1970 to 2019, World Bank Group (2020b) evidenced that shocks to commodities prices tend be medium term to permanent. Particularly, negative shocks to agricultural products tend to be permanent without recovering to pre-shocks levels. On the other hand, permanent shocks to energy prices trended upward, while metal prices are less volatile compared with energy and agricultural products.

The implications of the findings in World Bank Group (2020b) suggest that the majority of countries in West and Central Africa that depend on commodities export will experience shocks to GDP at least in the medium term. Such shocks have the propensity to reduce the general standard of living (*see Figure 4*) and potentially impact child well-being. Another channel through which shocks to commodities prices affect children is through government revenue and financing for services for children.

2.3 Pathways and implications of aggregate shocks to child well-being

This section examines how negative shocks to aggregate income affect child well-being indicators such as immunization, nutrition, education, and child marriage. There are two channels through which shock to aggregate income can directly or indirectly affect child well-being: the supply side or the demand side.

2.3.1 Supply-side pathways

The percentage change in tax revenue due to percentage change in GDP is one of the key parameters used to identify the potential impact of economic shocks on fiscal policy. For countries in SSA, Brückner (2012) estimated that a 1 percentage point increase in GDP leads to an increase in tax revenue by 2.5 per cent. By conjecture, the estimated tax revenue elasticity suggests that a decrease in GDP will lead to reductions in tax revenue at least in similar proportions. Government revenue from commodity-related exports as well as revenue from consumption taxes because of declining economic activity will be the most affected. Depending on the scale of the recession experienced in high-income countries, there could be spillover effects in terms of aid flow transfers to developing countries. It is hence not surprising that governments in SSA experienced a significant drop in revenue due to the 2008 economic recession (Berg et al. 2009).

Consequently, the reduction in government revenue due to economic shocks will impact governments' capability to meet programmed fiscal expenditure. In addition to programmed fiscal expenditure, governments will also be faced by pressures to increase spending in favour of sectors or groups most affected by the economic recession. In the short term, pressures to expand 'safety net' expenditure either vertically or horizontally as well as subsidies for the most affected sectors will encourage the government to adopt expansionary fiscal policies. While it is often assumed government spending is procyclical in developing countries, Brückner and Gradstein (2014) argued that the procyclicality of government expenditure depends on the whether the shock experience is transitory or persistent.

Beyond the cyclicality of government expenditure, the potential to adopt expansionary fiscal policies to lessen the impact of the crisis depends on the macroeconomic conditions and balance of payments constraints. Berg et al. (2009) argued that SSA countries with sustainable debt levels and financing options can implement expansionary fiscal policies, whereby automatic stabilizers should be allowed to work. The authors further argued that countries in that position should favour expenditure that reduces

poverty (such as expansion of safety nets and capital investments) as opposed to tax reductions. In this scenario, the impact of the aggregate shock on government expenditure in key service delivery for children such as health and education will be limited or cushioned by the expansionary fiscal policies.

However, few countries meet the macroeconomic stability, sustainable debt and financing options to implement these policies. As such, the most likely outcome will result in reductions of key service delivery for children. These reductions will negatively impact child well-being.

2.3.2 Demand-side pathways

The impact of an economic shock on household income and how households respond to the shock is another channel through which economic recession can potentially affect child well-being. Recent evidence from rural Uganda on the impact of COVID-19 lockdown restrictions shows that household non-farm income plummeted by as much as 60 per cent (Mahmud and Riley 2021). A reduction in household income over such a short period of time reduces the amount of resources available to the household.

Before examining household responses, the relationship between child outcomes and household resources is first examined. We consider a simple theoretical model where a child health outcome, such as immunization or nutrition, is a production function with two main arguments: household private health expenditure and household time allocated to health-promoting activities. The household health expenditure can further be divided into preventive and curative health expenditure. All arguments of the health production function are positively correlated with the outcome indicator. That is, increasing household health expenditure and time allocated to health-promoting activities improves health outcomes for children.

Given an initial starting point, what will be the effect of shocks to household income on children's health outcomes? Certainly, a reduction in household income will reduce the amount of resources available for household consumption. Healthcare expenditure – curative and preventive – will compete for limited resources with other household consumption components such as food, clothing and housing needs. Under such a scenario, the willingness and preferences of households towards preventive healthcare expenditures will be diminished in favour of other expenditures.

Besides out of pocket healthcare expenditure, preventive healthcare-promotion activity such as immunization requires time dedicated by households – even if households provide no monetary contribution for immunization. Taking children to immunization centres, particularly when they are located very far away, requires a time effort in addition to the transaction cost involved. The short-term opportunity cost of preventive healthcare-seeking such as immunization could be higher for households already faced with income shocks.

Although the above description of pathways through which shocks to aggregate income affect child well-being focuses on health and nutrition outcomes, the simple thought model can be extended to other outcome domains in education and child protection. The key element is that shock to aggregate income affects household income and can modify the opportunity cost for the outcome indicator with respect to pre-crisis levels.

3. THE EFFECT OF RECENT ECONOMIC CRISES IN WEST AND CENTRAL AFRICA ON CHILD WELL-BEING

3.1 The baseline elasticities between child well-being and aggregate income

The discussion in section 2.3 outlined potential pathways through which shocks to aggregate income affect children through either the supply-side or the demand-side channel. This section examines the basic empirical relationship between variations in aggregate income and child well-being. In a first-best scenario, that will entail estimating the impact of specific supply-side and demand-side indicator variables on child well-being. Due to a lack of detailed data, the section presents direct estimates of variations of aggregate income and their effect on child well-being. Data sources and coverage are presented in section 1.3 and Annex A.

Real gross domestic product (GDP) per capita represents the preferred measure of aggregate income and economic conditions. We complement GDP per capita with total government expenditure and household final consumption expenditure. Child well-being indicators were selected based on key Sustainable Development Goal (SDG) targets established as priority for the West and Central Africa Region (WCAR).[4] The study estimates the logarithm of each of the economic variables on each child well-being indicator by ordinary least squares (OLS), controlling for time and country fixed effects. The simple methodology allows the computation of how a much a variation in GDP per capita per 1 per cent leads to variations in child well-being indicators in percentages/percentage points. Full details of the econometric specification and estimation outputs are reported in Annex B.

3.1.1 Immunization

Immunization is the most cost-effective preventive healthcare intervention to control infectious disease outbreaks and reduce the burden of vaccine-preventable diseases (VPDs) (World Health Organization 2018). For instance, smallpox has been eradicated through immunization while poliomyelitis is on the verge of eradication. Despite the progress made in the prevention of infectious disease outbreaks, many children remain unprotected either by not receiving any dose or not completing a full dosage schedule.

To address concerns about the scale-up of immunization coverage, the World Health Organization Regional Office for Africa outlines its strategic plan through the Global Vaccine Action Plan (GVAP) resolution (World Health Organization 2015). The strategic plan is based on the GVAP for May 2012 with the aim of reaching national immunization coverage of 90 per cent for diphtheria, tetanus and pertussis (DTP) containing vaccines by 2015 and 90 per cent coverage for all vaccines by 2020 (World Health Organization 2013; 2015). The WCAR was on course to achieve GVAP immunization targets between 2000 and 2009 (*see Figure 8*). The weighted average of immunization antigen coverage rate consistently increased on a year-on-year basis between 2000 and 2009. However, the average immunization coverage rate started to dip after 2009 before flattening between 2011 and 2015. A quick upsurge in coverage rate flattened off immediately, leaving the region far off the GVAP goal of a 90 per cent coverage rate.

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4   UNICEF West and Central Africa Regional Office (WCARO) compiled the key SDG indicators as part of its strategic programming.

Figure 8: The West and Central Africa Region was on course to achieve GVAP target between 2000 and 2009
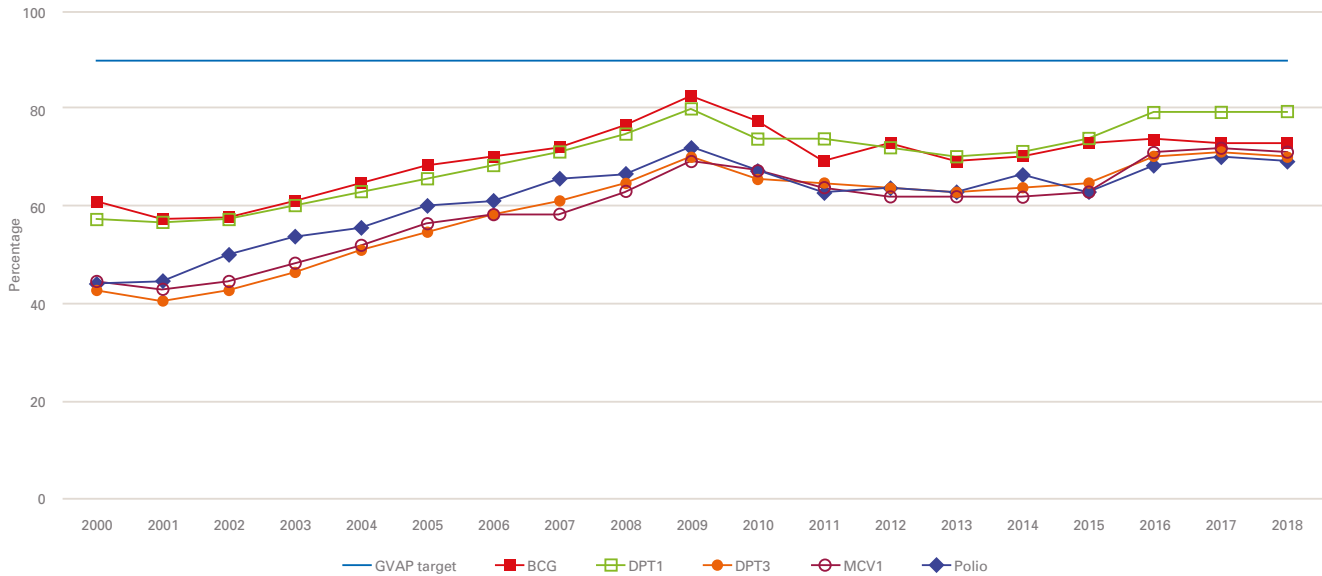
Source: Authors' elaboration based on data from World Development Indicators database

Note: The GVAP target is detailed in World Health Organization (2013 and 2015).

This section examines baseline economic conditions that underline variations in immunization coverage. Average baseline estimated elasticities between economic indicators and immunization coverage rate are 0.13, 0.08 and 0.11 for GDP per capita, government expenditure and household consumption, respectively (*Figure 9*). This suggests that improvements in economic indicators are associated with an increase in immunization coverage rates. In particular, for Bacillus Calmette–Guérin (BCG), diphtheria-tetanus-pertussis (DTP1 and DTP3), hepatitis B (HEPB), measles-containing vaccine first-dose (MCV1) and polio, coverage rates increase by 0.07, 0.10, 0.15, 0.18, 0.13 and 0.13 percentage points, respectively, if GDP per capita increases by 1 per cent.

Another important factor is the level of variation in elasticity between immunization antigen type and economic variables. For instance, BCG antigen administered as soon as possible after birth has less elasticity, 0.07, compared with the first dose of measles-containing vaccine (MCV1), 0.13, which cannot be administered until at least 6 months after birth. Similarly, later doses of the same antigen vaccine are highly sensitive to variations in economic conditions compared with the first doses. For example, the computed elasticity for DTP1 is 0.10 while that of DTP3 is 0.15 as well as the elasticity of 0.18 for HEPB3. These variations suggest that unfavourable economic conditions will affect the likelihood of children completing all expected immunization dosages.

Figure 9: Improvement in economic indicators increases immunization coverage rates
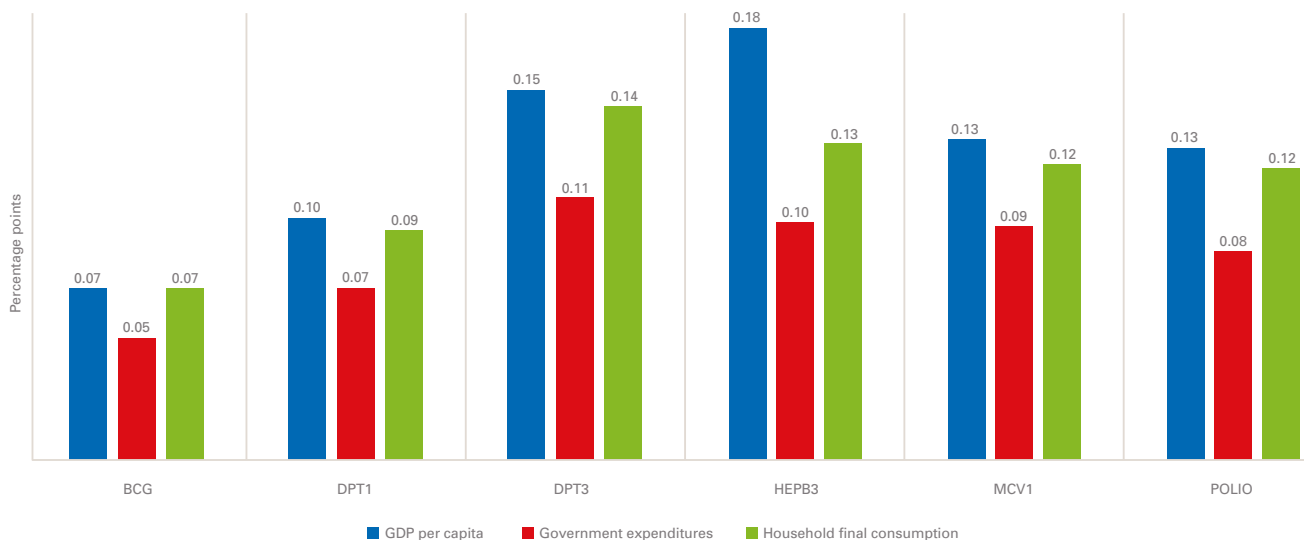
Source: Authors' computation based on statistically significant estimates using UNICEF and World Development Indicators data.

3.1.2 Nutrition

Another key child outcome indicator is the prevention of stunting. A child is defined as stunted if his/her height-for-age is more than two standard deviations below the median of the World Health Organization's Child Growth Standards. Stunting in early childhood reduces the ability of children to achieve their full development potential. For instance, stunting in children can lead to long-term negative effects such as diminished cognitive and educational outcomes in adolescence (Walker et al. 2007). Additionally, stunting is linked with a high risk of under-five mortality and general poor state of health in adult life (Dewey and Begum 2011).

Broadly, the two main causes of stunting are nutritional deficiencies and exposure to infectious diseases (Black and Heidkamp 2018). Protection against infectious diseases was analysed in the section above, hence, this section examines the interrelation between nutrition and economic conditions. Overall, improvements in economic conditions lead to improvements in nutritional outcomes (*see Figure 10*). A 1 per cent variation in GDP per capita, government expenditure and household consumption is associated with 0.24, 0.14 and 0.19 percentages point variations, respectively, in vitamin A supplementation coverage rate in the same direction. Similarly, variations in economic conditions are associated with variation in dietary intake in the same direction, whereas the variation with prevalence of undernourishment is the opposite direction. This means if economic conditions improve the prevalence of undernourishment declines and vice versa.

Figure 10: Improvement in economic conditions improves nutritional outcomes
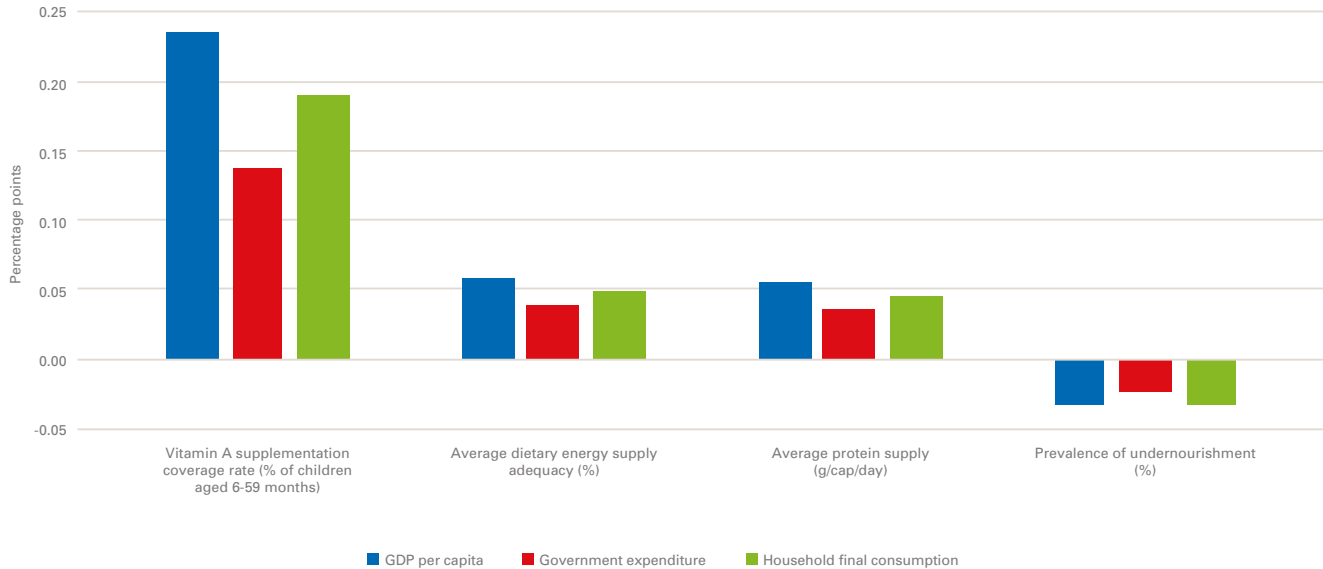
3.1.3 Quality and relevant basic education

Goal 4 of the SDGs calls for access to quality education for all children. We use three variables to capture the quality and relevant basic education comparable across countries. The United Nations Development Programme (UNDP) Education Index, which is a component of the Human Development Index (HDI), includes primary and secondary school completion rates for relevant age groups. The UNDP Education Index combines the expected and average years of schooling for each country, thus capturing education attainment among the general population.

Primary and secondary school completion rates focus more on children. While one may argue that enrolment rate can be a good indicator of access to education, its disadvantage as an indicator is that it is incomplete. Whether children complete their schooling is not captured in enrolment rate, hence the completion rate is best placed to capture quality of education beyond enrolment.

The baseline suggests that variations in economic conditions are associated with variations in education indicators in the same direction (*see Figure 11*). Hence, if economic conditions improve education outcomes will improve and vice versa. A variation in GDP per capita by 1 per cent is associated with variations in primary and secondary school completion rate by 0.14 and 0.15 percentage points, respectively. Likewise, a variation in government expenditure and household consumption by 1 per cent is associated with variations in primary school completion rate by 0.11 and 0.14 percentage points, respectively. Similarly, lower secondary school completion varies by 0.10 and 0.12 percentage points if government expenditure and household consumption vary by 1 per cent, respectively.

Figure 11: Improvement in economic conditions improves educational outcomes

3.1.4 Ending child marriage

Globally, more than 700 million women were married before the age of 18 years, with about 36 per cent of these women marrying before age 15 (UNICEF 2014). While boys are also affected by the practice of child marriage, girls are disproportionately affected. The practice of child marriage is most common in South Asia and West and Central Africa, where 56 per cent and 46 per cent, respectively, of women aged between 20 and 49 were married before the age of 18 (UNICEF 2014). Moreover, 6 out of the 10 countries with the highest prevalence of child marriage are in West and Central Africa, where 1 in 3 child brides were married before the age of 15 (UNICEF 2017). The projected growth in the number of girls in the region presents a challenge and a policy priority to end child marriage (UNICEF 2017).

This section examines the association between aggregate income and child marriage. Due to a lack of consistent time series data on the practice of child marriage, we proxy child marriage with adolescent fertility rate which measures births per 1,000 women aged 15–19 years. Baseline estimates show a statistically significant association between aggregate income and adolescent fertility. In particular, the association is negative suggesting that improvements in economic conditions are associated with reductions in child marriage and vice versa (*see Figure 12*).

Figure 12: Effect of a 1 per cent change in economic conditions on adolescent fertility

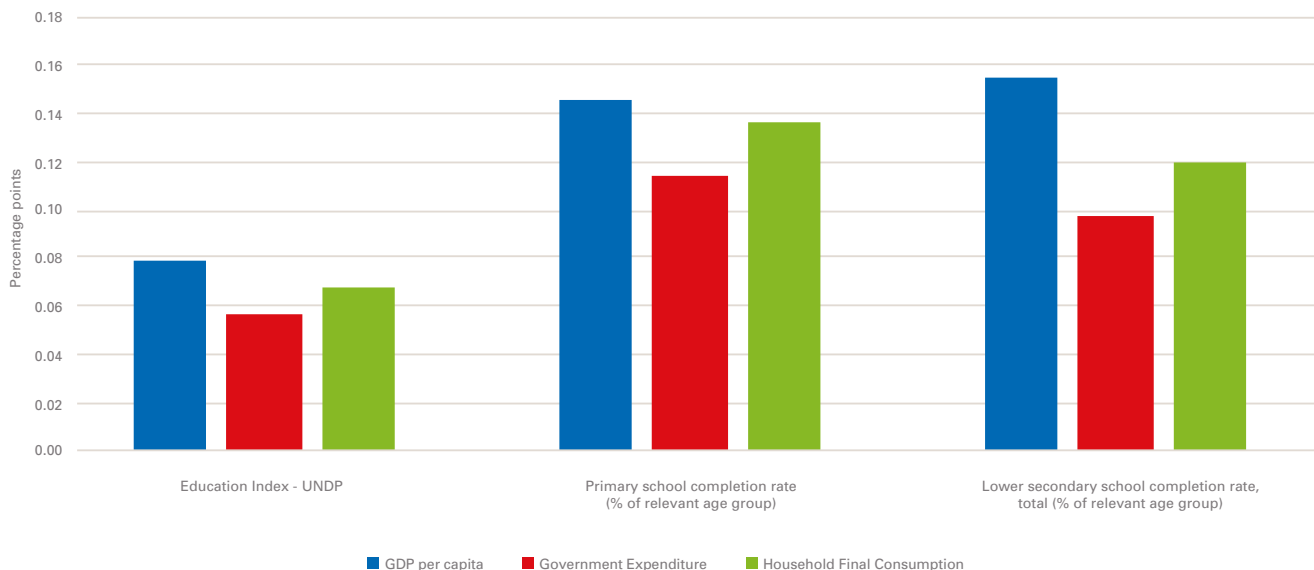**Source**: Authors' computation based on statistically significant estimates using World Development Indicators data.

3.1.5 Ending open defecation

Another issue that poses a significant challenge for child well-being is the practice of open defecation in the WCAR, where an estimated 115 million people (one in four) continue to engage in open defecation. Open defecation facilitates the transmission of diarrhoeal diseases, which are a significant health challenge for children, and particularly those aged under 5. The association between economic conditions and the prevalence of open defecation is negative, suggesting improvement in aggregate income reduces the practice of open defecation (*see Figure 13*).

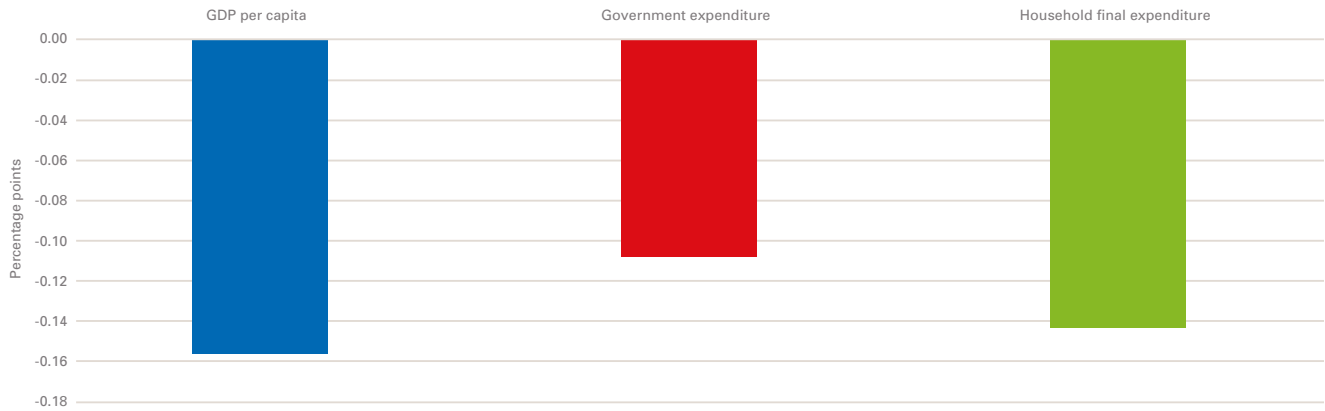## Figure 13: Effect of a 1 per cent change in economic conditions on open defecation
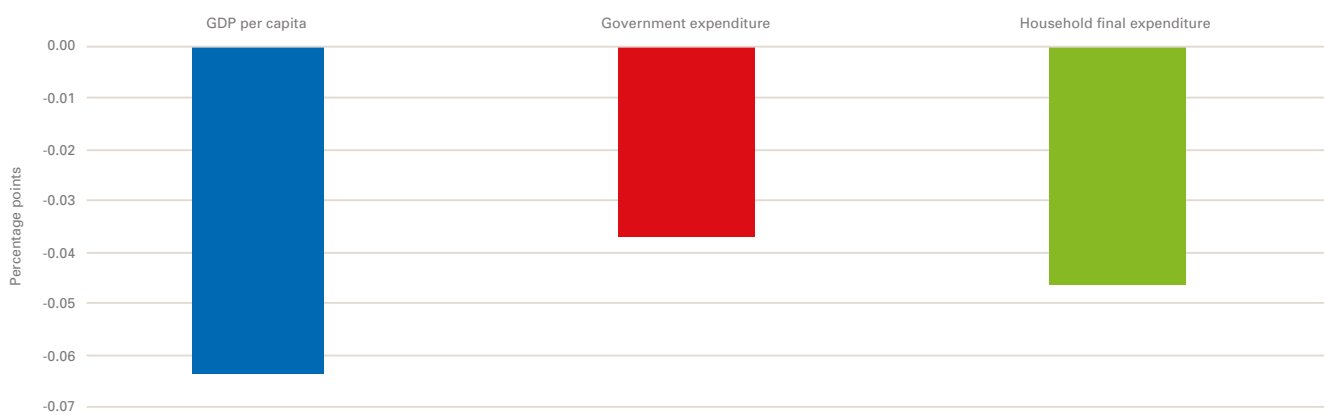
Source: Authors' computation based on statistically significant estimates using World Development Indicators data.

3.2 The impact of economic crises on children well-being

Baseline estimates in section 3.1 show strong statistically significant correlation between variations in economic conditions and variations in child outcomes of interest. This section takes a further step beyond baseline correlations to examine the impact of negative shocks to aggregate income on child well-being. Building on insights from the two economic crises experienced in West and Central Africa in the last two decades, the section presents estimates of the actual impact of these two crises on child well-being.

The estimation methodology exploits the global financial crisis in 2008 and the commodity market crisis in 2014 to build a quasi-natural experiment. The method estimates the impact of these two crises by comparing the time series trend in child well-being, before and after shocks to aggregate income.[5]

3.2.1 Immunization

Estimates of the model on immunization antigen coverage show a statistically significant impact from the two crises on immunization coverage. Both crises reduced immunization coverage, with the magnitude of the impact proportional to the magnitude of the crisis (*see Figure 14*). For instance, BCG coverage rate reduced by 2.28 and 6.64 percentage points due to the 2008 and 2014 crises, respectively. The rate of reduction in coverage mimics the degree of baseline correlations shown above, where antigens with highly sensitive correlations saw a major reduction compared with antigens with low sensitivity. The polio coverage rate reduction is very similar to that of DTP3, where both antigens recorded a decline of 12 percentage points in the aftermath of the 2014 crisis. The decline in immunization coverage registered across all antigens emphasizes the scale of reduction in the protection of children against infectious diseases.

Figure 14: Average impact of the 2008 and 2014 crises on immunization coverage rates
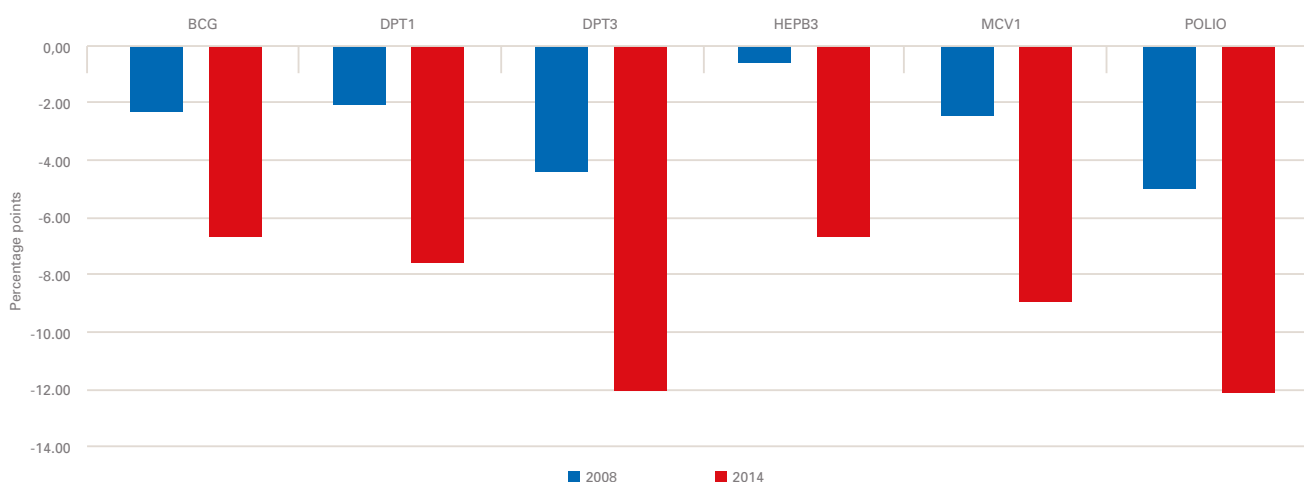
Source: Authors' estimates based on data from World Development Indicators.

5   Detailed technical discussion of the estimation model is available in Damoah (2021), while a summary for this application is reported in Annex B.

3.2.2 Nutrition

The impact of the two crises on nutritional indicators (adequacy of dietary intake and prevalence of undernourishment) was statistically significant. In particular, the global financial crisis in 2008 reduced the adequacy of dietary intake by 0.75 percentage points on average across the region, while the commodity prices crisis in 2014 led to a decline in dietary intake by 2.55 percentage points. Not surprisingly, as dietary intake declined during the two crises this also caused an increase in the prevalence of undernourishment. The global financial crisis induced an increase in prevalence of undernourishment by 0.35 percentage points while the commodity price crisis increased undernourishment by 2.80 percentage points (*see Figure 15*).

Figure 15: Average impact of the 2008 and 2014 crises on nutrition indicators
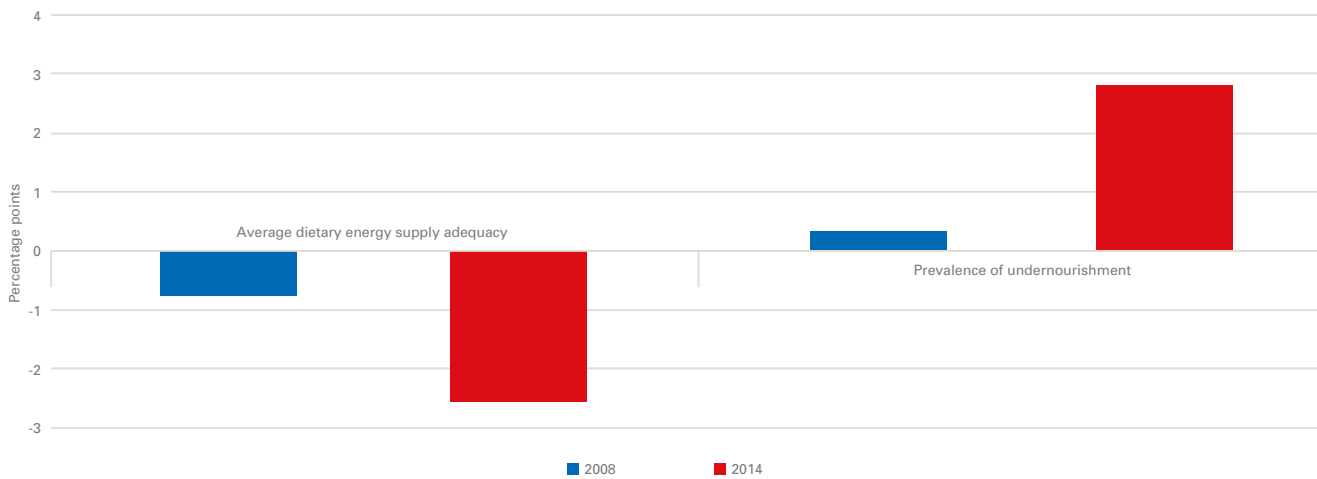
Source: Authors' estimates based on data from World Development Indicators.

3.2.3 Quality and relevant basic education

Both the global financial crisis in 2008 and the commodity crisis in 2014 affected the derived Education Index, signalling a drop in the average number of years of schooling as well as a drop in the primary school completion rate. With regard to the latter, the 2008 crisis provoked an additional decline in primary school completion by 5.1 percentage points compared with the pre-crisis level. Correspondingly, the 2014 crisis caused the primary school completion rate to decline by 13.80 percentage points compared with the pre-crisis level (*see Figure 16*).

Figure 16: Average impact of the 2008 and 2014 crises on education indicators

WCAR Average
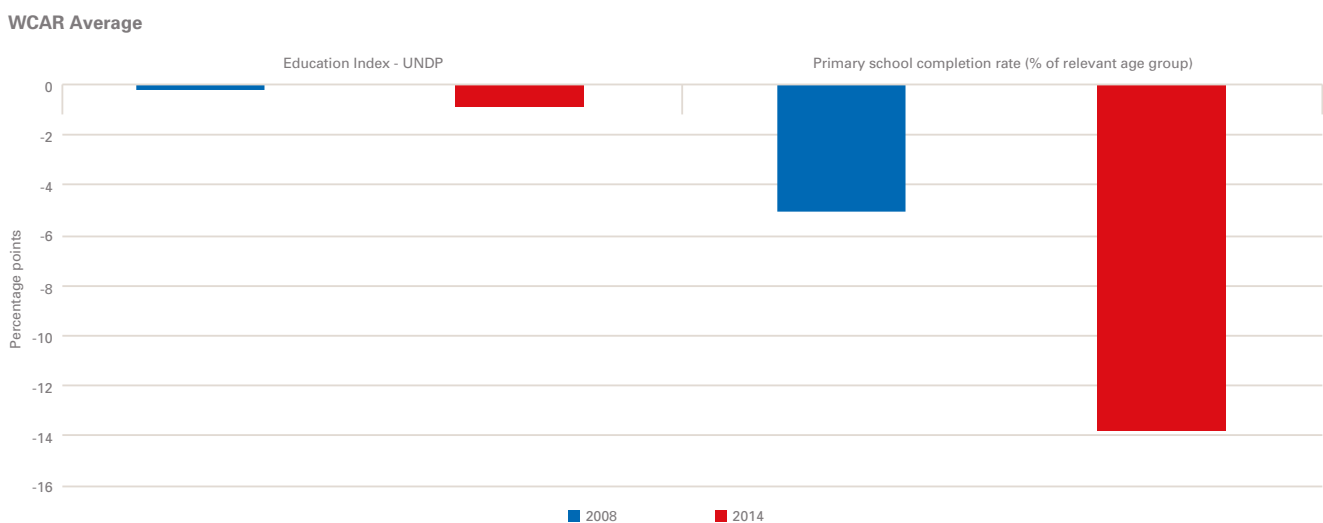
Source: Authors' estimates based on data from World Development Indicators.

3.2.4 Ending child marriage

The two crises in 2008 and 2014 resulted in an increase in the adolescent fertility rate compared with pre-crisis levels. Births by adolescents aged between 15 and 19 increased by 3.08 and 4.13 percentage points per every 1,000 live births due to the 2008 and 2014 crises, respectively. This is equivalent to an increase in adolescent fertility of 0.3 per cent and 0.4 per cent, respectively.

Figure 17: Average impact of the 2008 and 2014 crises on adolescent fertility rate
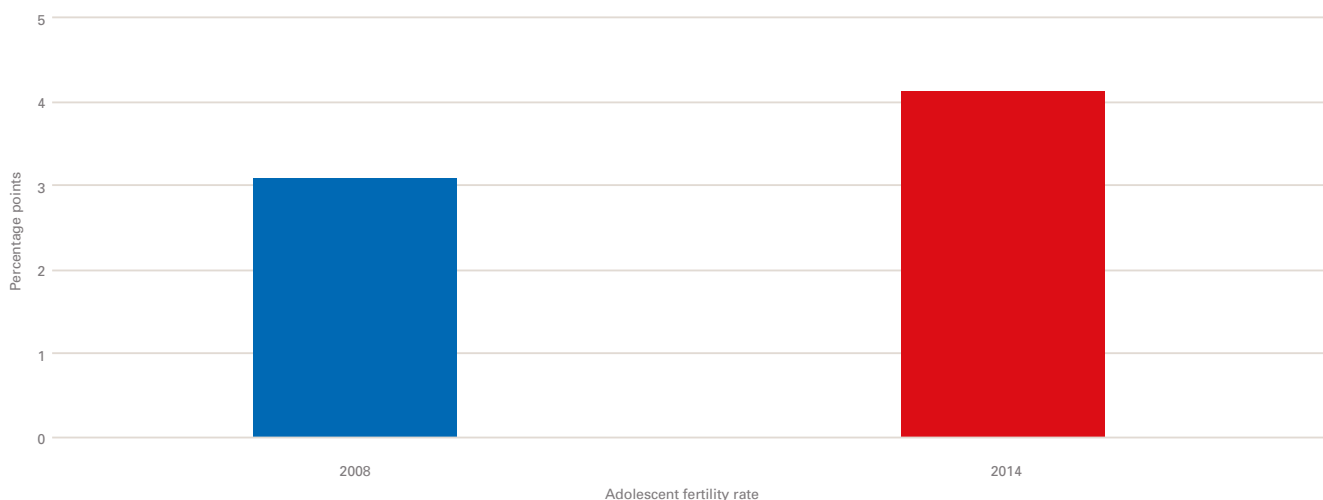
Source: Authors' estimates based on data from World Development Indicators.

3.2.5 Ending open defecation

Finally, both the 2008 and 2014 crises worsened the practice of open defecation. Likewise, the percentage of people practising open defecation increased by 1.49 and 1.72 percentage points due to the 2008 and 2014 crises, respectively.

Figure 18: Average impact of the 2008 and 2014 crises on prevalence of open defecation
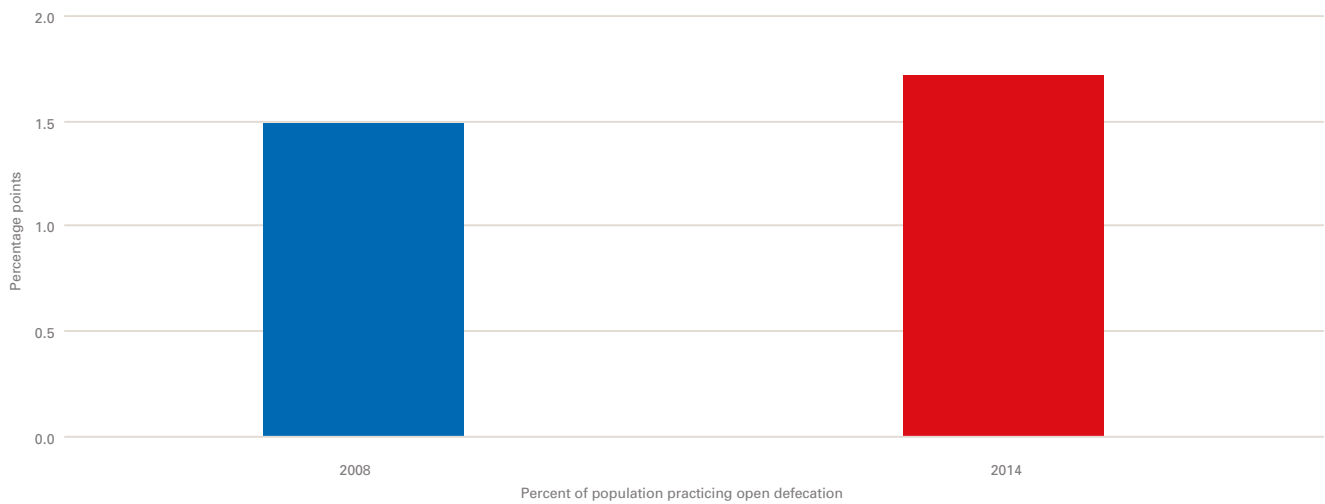
Source: Authors' estimates based on data from World Development Indicators.

4. MACROECONOMIC OUTLOOK FOR WEST AND CENTRAL AFRICA, AND IMPLICATIONS FOR CHILD WELL-BEING

4.1 The COVID-19 crisis in perspective

The twin health and economic crisis induced by COVID-19 presents unique challenges to the West and Central Africa Region (WCAR). First, while the global financial crisis was demand driven, the COVID-19 economic crisis is simultaneously driven by both demand and supply shocks. Second, the process of recovery is linked with uncertainty about when the health crisis will end, due to the emergence of various strains of the virus and vaccine roll-out.

The first sign of the economic recession is shown by the change in per capita GDP between 2019 and 2020 (*see Figure 19*). As expected, per capita GDP reduced in almost all countries in the WCAR with the exception of Benin, Sao Tome and Principe, and Guinea. Cabo Verde was the most affected country as per capita GDP reduced by almost 16 per cent. Much like the global financial crisis which created a spillover effect for the commodities price crisis due to prolonged weakened demand for energy, there are synergies between the immediate COVID-19 economic crisis and the potential commodities crisis.

Figure 19: Per capita GDP reduced in almost all countries in the West and Central Africa Region in 2020
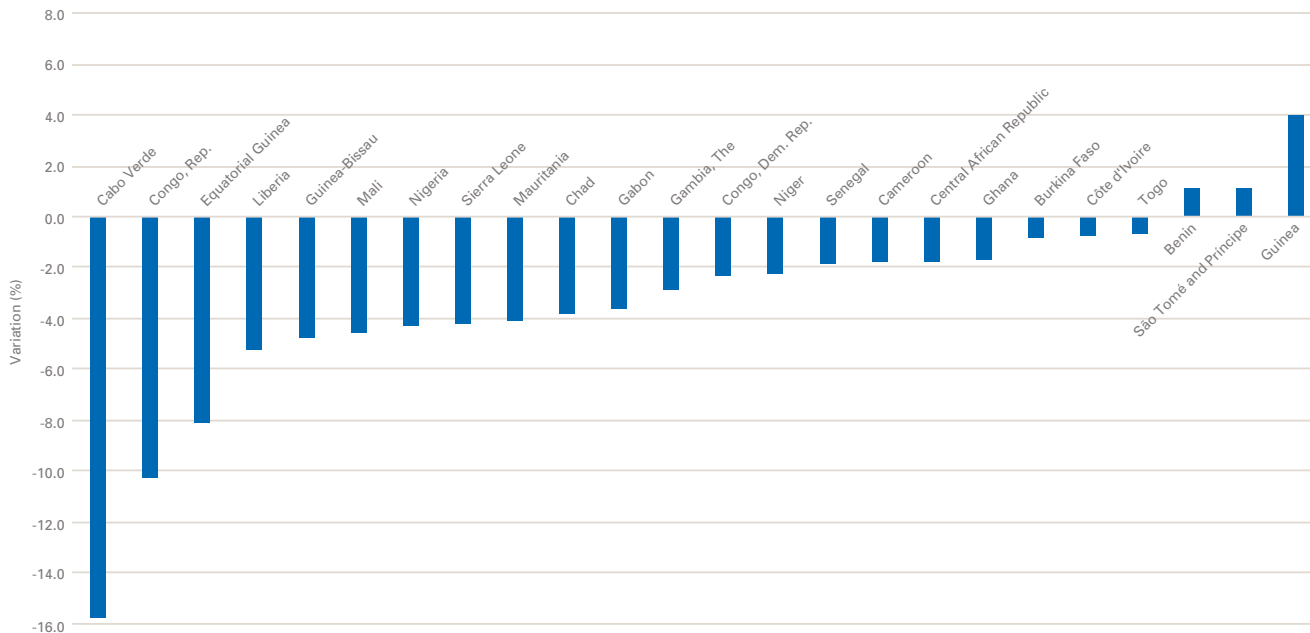
Source: Authors' elaboration based on data from World Development Indicators.

The analysis in section 3.2 shows that the impact of the crisis on child well-being is proportional to the magnitude of the crisis. The drop in aggregate income suggests that more children are likely to be negatively affected by the COVID-19 economic recession than the 2008 and 2014 crises. This section builds on insights from the analysis in section 3.2 to make projections on some key child well-being indicators for the year 2021. These are conservative projections based on a best-case scenario that the 2020 economic recession is at least limited to 2014 levels.

Using the immunization coverage rate for infants born in 2020 and 2018 as the baseline, in the best-case scenario where the economic crisis produces the same impact as that of the commodity prices crisis, an additional 867,598 infants born in 2020 will miss the diphtheria-tetanus-pertussis (DTP) immunization, while an additional 862,237 will miss the polio immunization. Adding this to the number of infants in the region who would have been out of immunization coverage, over 6 million infants born in 2020 will not be fully immunized in 2021 (*see Figure 20*).

The projected number of 2020 birth cohort infants falling out of immunization coverage is computed assuming a baseline best-case scenario. The projection excludes logistics complications along the immunization value chain from procurement of vaccines and international shipping to deliveries to service points, arising due to global lockdown measures. Factoring in these logistics constraints will likely increase the number of infants projected to fall out of the immunization coverage rate.

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Figure 20: Projected number of 2020 birth cohort missing immunization in 2021, in best-case scenario

Non-coverage of Polio Immunization in 2021
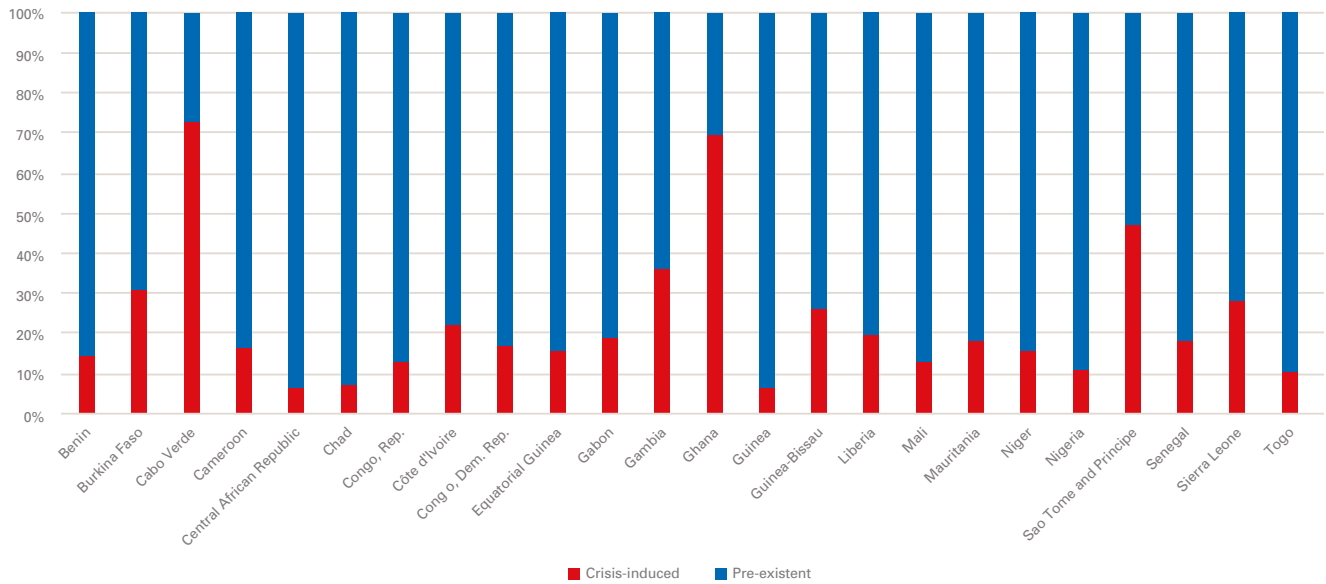
Non-coverage of DPT Immunization in 2021
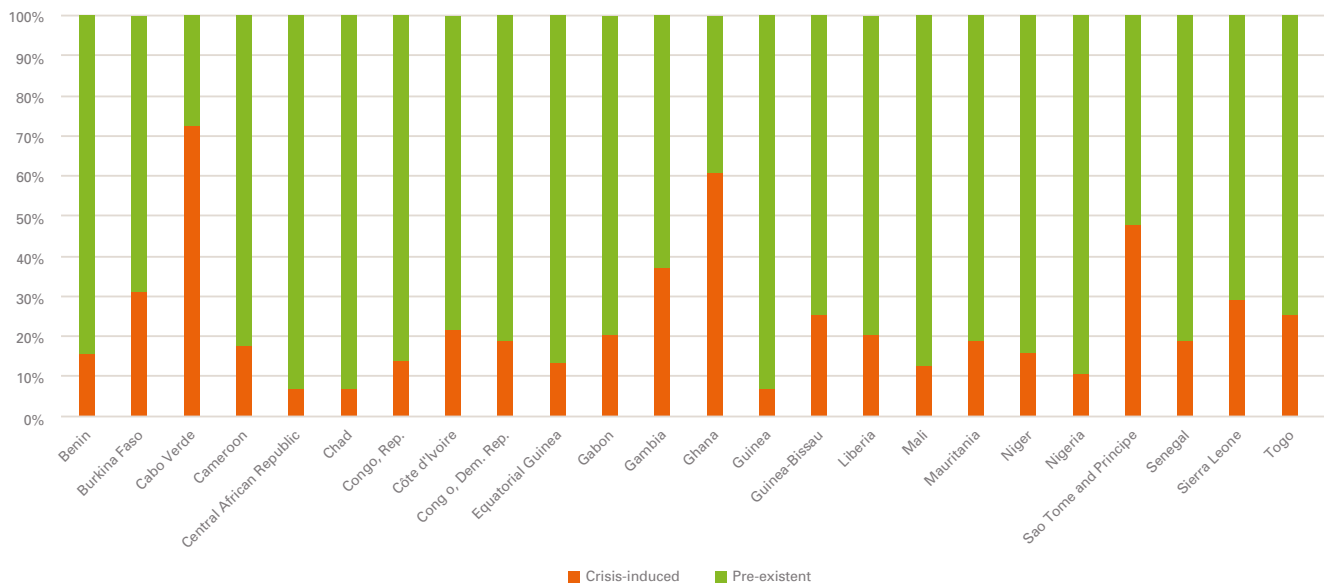
Source: Authors' estimates based on data from World Development Indicators.

The prevalence of undernourishment among the general population is also expected to increase by 1.38 percentage points. Undernourishment is hence expected to increase from the baseline 16.53 per cent to 17.91 per cent in 2021. The rate of increase is expected to be highest in Equatorial Guinea and Gabon. Additionally, Chad and Liberia will have the highest rate of undernourishment, where 4 out of every 10 people will be undernourished (*see Figure 21*).

Figure 21: Projected prevalence of undernourishment in 2021

Potential COVID-19 induced undernutrition

Prevalence of undernourishment in 2021 adjusted for COVID-19

Source: Authors' estimates based on data from World Development Indicators.

Primary school completion rate among the relevant age group is expected to decline among most countries in the region. Cabo Verde, which has the highest COVID-19 standardized infection rate, will register the most non-completion. An estimated 8 per cent of primary school children may not complete the school cycle this year because of COVID-19. It is followed by Ghana, where a little over 3 per cent of primary school children will not complete the school cycle. In a few countries such as Liberia, Sierra Leone, Burkina Faso and Togo, the primary school completion rate is expected to increase by less than 1 per cent (*see Figure 22*).

Figure 22: Projected variations in primary school completion rate
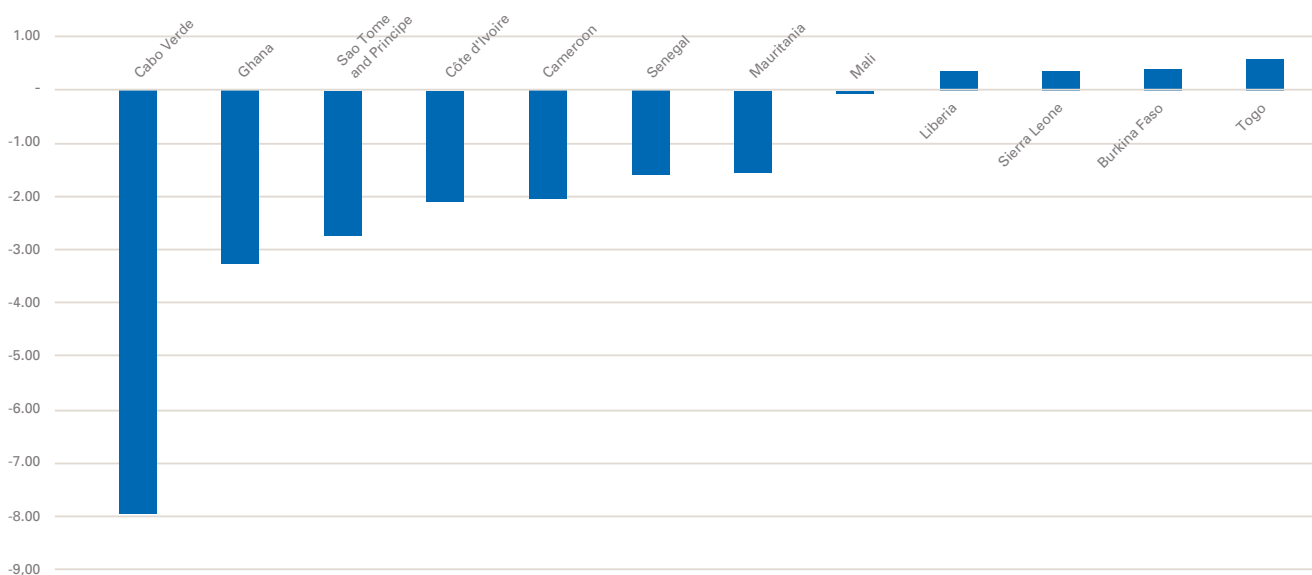
Source: Authors' estimates based on data from World Development Indicators.
Note: Due to lack of data at baseline, projections could not be computed for the following countries: Benin, Central Africa Republic, Chad, the Democratic Republic of the Congo, the Congo, Equatorial Guinea, Gabon, Gambia, Guinea, Guinea-Bissau, Niger and Nigeria.

Finally, the prevalence of open defecation is expected to increase by 0.56 percentage points in 2021, increasing the number of people practising open defecation by 1.6 million. The number of people still engaging in the practice is expected to be over 130 million across the region, highlighting the necessity of adequate water, sanitation, and hygiene (WASH) facilities to reduce the burden of preventable disease. Moreover, the distribution of people engaged in the practice of open defecation shows huge differences across countries. For example, in Niger and Chad almost 7 out of 10 people are projected to engage in open defecation (*see Figure 23*).

Figure 23: Projected prevalence of open defecation

Country	Percentage
Niger	67%
Chad	67%
Benin	54%
Sao Tome and Principe	48%
Togo	47%
Burkina Faso	46%
Liberia	39%
Mauritania	32%
Congo, Dem. Rep.	26%
Cabo Verde	21%
Nigeria	21%
Ghana	18%
Sierra Leone	17%
Guinea Bissau	16%
Guinea	14%
Senegal	14%
Equatorial Guinea	13%
Congo, Rep.	12%
Côte d'ivoire	10%
Gabon	8%
Cameroon	7%
Mali	7%
Gambia	1%

Percentage
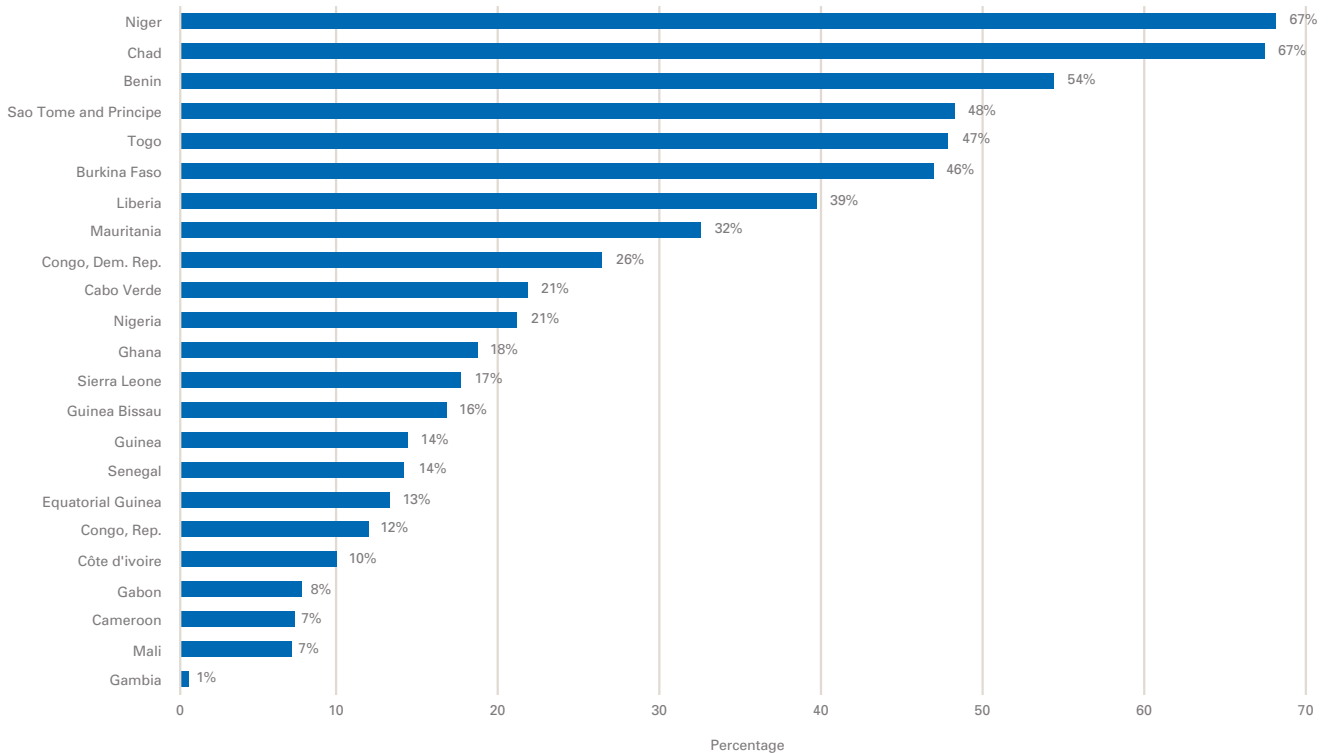
Source: Authors' estimates based on data from World Development Indicators.

4.2 Social and economic policy responses

The projected impact of the COVID-19 economic crisis on children and young people calls for social and economic policies that can offset the negative well-being impacts. Economic policy responses to previous crises provide avenues to assess policy measures and their impact on child well-being. For instance, in the aftermath of the global financial crisis, many high and middle-income countries adopted expansionary fiscal and monetary policies aimed at protecting employment and incomes, maintaining basic services and promoting economic activity (Tirivayi et al. 2020). Notable policies targeted at children include child benefits and grants, favourable parental leave, school feeding and education subsidies, among others (Richardson 2010). On the other hand, in many low-income countries expansionary fiscal measures were channeled towards infrastructure expenditure rather than social protection (Tirivayi et al. 2020). Ortiz and Cummins (2013) argued that many low-income countries faced severe fiscal pressures compared with high and middle-income countries, hence they were unable to meet growing demand for social protection measures.

A summary of evidence shows that social protection expenditures via cash transfers, in-kind transfers, school and health subsidies, and school feeding positively and directly affect child well-being. Some of the outcome domains directly affected include child poverty reduction, increase in health care utilization, increase in school attendance and reduction in child mortality. Additionally, social insurance and labour market policies – such as unemployment benefits, paid sick leave, wage subsidy and

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job retention – also produce indirect benefits to children via improvements in family welfare (see Richardson et al. (2020) and Tirivayi et al. (2020) for an overview).

As in previous crises, governments around the world enacted social protection policies as a first-aid response to the immediate impact of lockdown measures to contain the spread of COVID-19. A timeline for the index of economic and social support adopted in West and Central Africa is presented in *Figure 24*. Government support to households in the form of cash transfers – excluding transfers to firms – and relieving households of their financial obligations, such as utility fees and deferment of loan or tax payments, are combined into one index (Hale et al. 2020). In March 2020, none of the countries had introduced additional social protection measures to address the COVID-19 socioeconomic impacts In contrast to the stringency index, which measures were abruptly introduced by all countries, economic and social support systems were gradually rolled out. However, this support to households was short lived – for a couple of months.

Figure 24: A timeline of economic and social support to households in the West and Central Africa Region
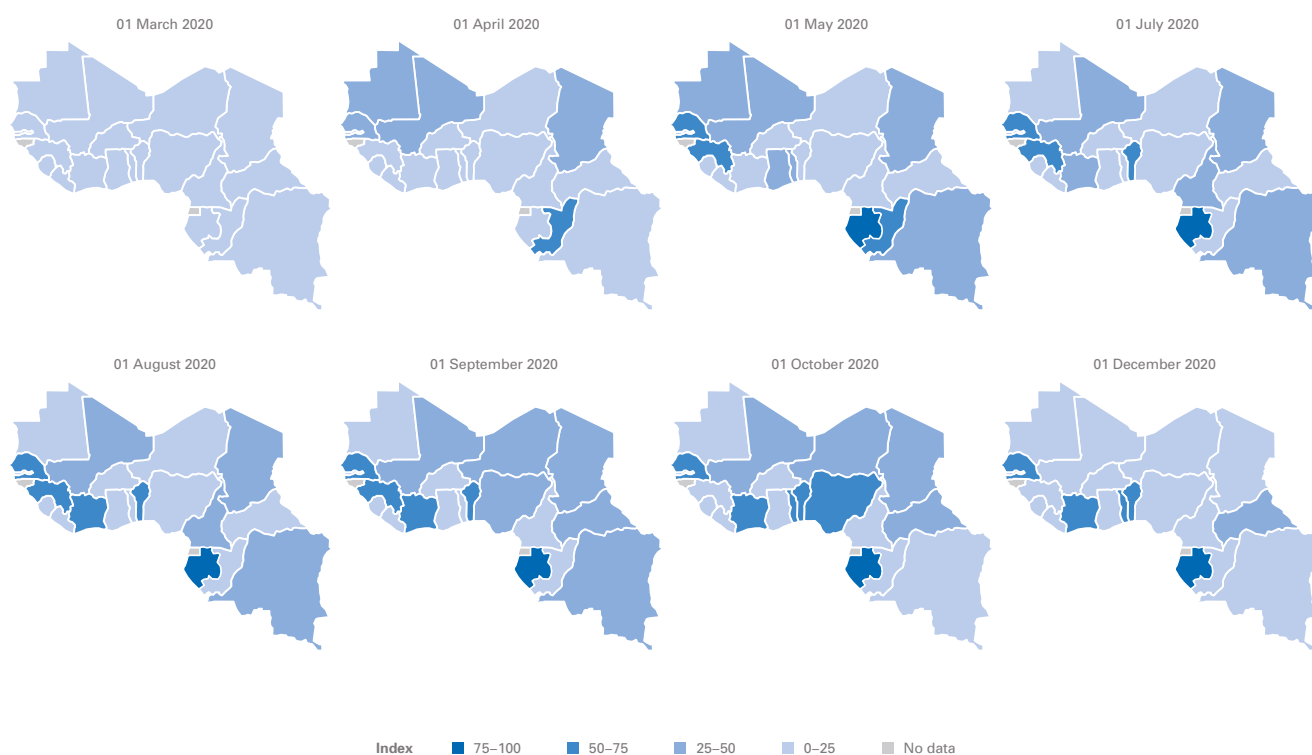
Index ■ 75–100 ■ 50–75 ■ 25–50 ■ 0–25 ■ No data

Source: Authors' elaboration based on Oxford COVID-19 Government Response Tracker.
Note: The designations employed in this publication and the presentation of the material do not imply on the part of UNICEF the expression of any opinion whatsoever concerning the legal status of any country or territory, or of its authorities or the delimitations of its frontiers.

Besides social protection measures to address demand-side channels through which economic crisis affect children, it is equally important to supplement these with supply-side measures such as access and continuity of service delivery. This would require protecting and expanding social sector budgets such as education and health, for a long-term resilient and sustainable recovery.

4.3 Conclusion

The scale of the dual health and economic crisis induced by COVID-19 is unprecedented. In response, to curb the spread of the virus, governments around the globe enacted stringency and containment measures. While incidence and fatality rates in the WCAR remain low compared with other regions, stringency measures enacted in the region disproportionately affected children. For instance, schools were closed on approximately 80 per cent of the expected school days in 2020, while workplace closures and bans on public events represented closure for 43 and 59 per cent of expected days/time, respectively, in 2020.

Using past economic crises observed in the region – in 2008 as a result of the global financial crisis and in 2014 as a result of the slump in the commodities market – the report analyses the effect of these two crises on child well-being indicators identified as key priorities by the UNICEF Regional Office in West and Central Africa. Estimates show that both crises worsened child well-being indicators, with the level of impact proportional to the magnitude of the crisis.

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ANNEX A: DATA SOURCES

Institution	Name of database	Last accessed
Blavatnik School of Government (University of Oxford)	Oxford COVID-19 Government Response Tracker	25 January 2021
Food and Agriculture Organization	Suite of Food Security Indicators – FAOSTAT	5 October 2020
UN Development Programme	Human Development Reports – Education Index	5 October 2020
World Bank	Global Economic Prospects, June 2020	1 September 2020
World Bank	World Development Indicators	1 September 2020
World Bank	Commodity Markets Outlook, October 2020	5 October 2020
World Health Organization	WHO Coronavirus Disease (COVID-19) Dashboard	29 January 2021

ANNEX B: ECONOMETRIC METHODOLOGY

B.1 Baseline elasticities

Using panel data for 24 countries in the West and Central Africa Region covering the period 2000 to 2018, we estimate the following regression using ordinary least squares:

$$Y_{ct} = \beta_1 \ln X_{ct} + \alpha_c + \mu_{ct}, \qquad (1)$$

where Y_{ct} is the child well-being indicator variable for country c at time t; $\ln X_{ct}$ is the logarithm of economic indicators represented by gross domestic product (GDP) per capita, government expenditure and household final consumption; while α_c and μ_{ct} represent country fixed effects and idiosyncratic error term.

Given that the outcome variables are in levels, while GDP per capita is in logarithm, the following transformation $\varepsilon = \hat{\beta}_1/100$ is applied to the estimated coefficient deriving the elasticity between the economic variable and child well-being indicator. The computed elasticity is then interpreted as an increase in GDP per capita by 1 per cent will lead to a variation (increase/decrease) in the specific child well-being indicator by ε per cent.

B.2 Difference-in-difference and identification strategy

Following Damoah 2021, an identification estimation strategy in a difference-in-difference framework is used to estimate the impact of the past two crises on child well-being. The identification strategy exploits exogenous shocks to GDP per capita in the last two decades described in chapter 2. A threat to the adopted identification strategy that requires further discussion is anticipation and expectation effect. Particularly, if countries were expecting a crisis in 2008, this will undermine the estimation results as this will be picking up countries anticipated responses rather than the impact of the crisis. The 2008 global financial crisis was largely unexpected; hence countries could not build up a response prior to the actual crisis in anticipation of what was ahead. A formal statistical test of the anticipation effects confirm that the identification strategy does not suffer from anticipation and expectation effect.

The identification strategy is expressed by the following difference-in-difference equation:

$$Y_{ct} = \alpha_c + \beta_1 (Post_{2008}) + \beta_2 (GDP_{c2008}) + \beta_3 (GDP_{c2008} \times Post_{2008}) + \beta_4 (Post_{2014}) + \beta_5 (GDP_{c2014})$$
$$+ \beta_6 (GDP_{c2014} \times Post_{2014}) + Z_{ct} + \delta_t + \mu_{ct}$$

where Y_{ct} is the child well-being outcome variable for country c at time t; $Post_{2008}$ and $Post_{2014}$ are dummy variables indicating pre- and post-2008 as well as pre- and post-2014; GDP_{c2008} and GDP_{c2014} are time-invariant variables equal to GDP per capita for each country in 2008 and 2014, respectively; Z_{ct} is a vector of control variables; δ_t and μ_{ct} are time fixed effects and idiosyncratic error term. Our main variables of interest are β_3 and β_6 that capture the impact of the 2008 and 2014 crises on our child outcome variables. To compute the actual impact of each crisis for child well-being outcomes, we compute the marginal effect given by: $\dfrac{\delta Y}{\delta 2008} = \hat{\beta}_1 + (\hat{\beta}_3 \times GDP_{2008})$ and $\dfrac{\delta Y}{\delta 2014} = \hat{\beta}_4 + (\hat{\beta}_6 \times GDP_{2014})$ for the 2008 and 2014 crises, respectively.

ANNEX C: ESTIMATION OUTPUTS AND SOCIAL PROTECTION MATRIX

Table 3:Baseline relationship between economic conditions and immunization coverage outcomes

VARIABLES	(1) BCG (% of one-year-old children)	(2) BCG (% of one-year-old children)	(3) BCG (% of one-year-old children)	(4) Polio (% of one-year-old children)	(5) Polio (% of one-year-old children)	(6) Polio (% of one-year-old children)	(7) DTP (% of children aged 12–23 months)	(8) DTP (% of children aged 12–23 months)	(9) DTP (% of children aged 12–23 months)	(10) Measles (% of children aged 12–23 months)	(11) Measles (% of children aged 12–23 months)	(12) Measles (% of children aged 12–23 months)
Log GDP per capita	7.515***			13.45***			15.94***			12.57***		
	(2.098)			(2.664)			(3.149)			(2.987)		
Log Government expenditure		5.545***			8.711***			10.83***			9.111***	
		(1.325)			(1.946)			(2.106)			(1.631)	
Log Household final consumption expenditure			7.423***			12.03***			14.65***			11.76***
			(1.562)			(2.068)			(2.166)			(1.737)
Constant	32.14**	-31.18	-82.92**	-21.10	-109.4**	-198.8***	-38.62*	-153.4***	-257.8***	-17.75	-120.0***	-195.3***
	(14.27)	(27.12)	(34.76)	(18.12)	(39.84)	(46.03)	(21.42)	(43.11)	(48.21)	(20.31)	(33.39)	(38.67)
Observations	455	418	418	455	418	418	455	418	418	455	418	418
R-squared	0.161	0.190	0.234	0.298	0.274	0.358	0.369	0.374	0.470	0.298	0.345	0.394
Number of countries	24	23	23	24	23	23	24	23	23	24	23	23
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4: Baseline relationship between economic conditions and prevention of stunting indicators

VARIABLES	(1) Vitamin A supplementation coverage rate (% of children aged 6–59 months)	(2) Vitamin A supplementation coverage rate (% of children aged 6–59 months)	(3) Vitamin A supplementation coverage rate (% of children aged 6–59 months)	(4) Average dietary energy supply adequacy (%)	(5) Average dietary energy supply adequacy (%)	(6) Average dietary energy supply adequacy (%)	(7) Average protein supply (g/cap/day) (three-year average)	(8) Average protein supply (g/cap/day)	(9) Average protein supply (g/cap/day)	(10) Prevalence of under-nourishment (%)	(11) Prevalence of under-nourishment (%)	(12) Prevalence of under-nourishment (%)
Log GDP per capita	23.63**			5.605***			5.358***			-3.536**		
	(11.02)			(1.646)			(0.970)			(1.502)		
Log Government expenditure		13.59***			3.709***			3.436***			-2.592**	
		(4.429)			(1.258)			(0.861)			(1.122)	
Log Household final consumption expenditure			18.78**			4.844***			4.431***			-3.344**
			(6.980)			(1.426)			(0.759)			(1.268)
Constant	-94.20	-215.8**	-357.1**	72.72***	34.93	3.093	24.71***	-9.073	-37.28**	43.20***	73.07***	94.47***
	(72.61)	(90.58)	(155.8)	(11.06)	(25.64)	(31.62)	(6.490)	(17.50)	(16.79)	(10.32)	(23.13)	(28.38)
Observations	350	332	332	395	364	364	351	322	322	323	292	292
R-squared	0.077	0.066	0.087	0.223	0.237	0.291	0.443	0.434	0.516	0.160	0.203	0.250
Number of countries	23	22	22	22	21	21	22	21	21	18	17	17
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 5: Baseline relationship between economic conditions and basic education attainment indicators

VARIABLES	(1) Education Index – UNDP	(2) Education Index – UNDP	(3) Education Index – UNDP	(4) Primary school completion rate (% of relevant age group)	(5) Primary school completion rate (% of relevant age group)	(6) Primary school completion rate (% of relevant age group)	(7) Lower secondary school completion rate (% of relevant age group)	(8) Lower secondary school completion rate (% of relevant age group)	(9) Lower secondary school completion rate (% of relevant age group)
Log GDP per capita	7.837***			14.49***			15.44***		
	(1.299)			(3.126)			(2.614)		
Log Government expenditure		5.609***			11.49***			9.821***	
		(0.912)			(2.187)			(1.240)	
Log Household final consumption expenditure			6.851***			13.72***			11.98***
			(0.909)			(2.257)			(1.405)
Constant	-15.72*	-77.74***	-115.4***	-37.21*	-177.0***	-246.9***	-68.95***	-167.4***	-232.4***
	(8.849)	(18.69)	(20.26)	(21.06)	(44.91)	(50.31)	(17.50)	(25.38)	(31.17)
Observations	447	410	410	298	269	269	253	230	230
R-squared	0.532	0.607	0.636	0.368	0.467	0.475	0.473	0.539	0.583
Number of countries	24	23	23	24	23	23	23	22	22
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 6: Baseline relationship between economic conditions and ending child marriage and open defecation indicators

VARIABLES	(1) Adolescent fertility rate (births per 1,000 women aged 15–19)	(2) Adolescent fertility rate (births per 1,000 women aged 15–19)	(3) Adolescent fertility rate (births per 1,000 women aged 15–19)	(4) People practising open defecation (% of population)	(5) People practising open defecation (% of population)	(6) People practising open defecation (% of population)
Log GDP per capita	-15.63***			-6.361***		
	(2.711)			(1.512)		
Log Government expenditure		-10.84***			-3.724***	
		(2.043)			(0.867)	
Log Household final consumption expenditure			-14.33***			-4.602***
			(2.402)			(1.042)
Constant	231.9***	349.1***	446.1***	73.88***	105.9***	132.1***
	(18.44)	(41.81)	(53.46)	(10.26)	(17.72)	(23.17)
Observations	455	418	418	430	394	394
R-squared	0.423	0.459	0.549	0.382	0.383	0.399
Number of countries	24	23	23	24	23	23
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 7: Estimates of the impact of the 2008 and 2014 crises on immunization coverage rates

VARIABLES	(1) BCG immunization	(2) BCG immunization	(3) DTP1 immunization	(4) DTP1 immunization	(5) DTP3 immunization	(6) DTP3 immunization	(7) HEPB3 immunization	(8) HEPB3 immunization	(9) MCV1 immunization	(10) MCV1 immunization	(11) POLIO immunization	(12) POLIO immunization
$Post_{2008}$	-1.347	-1.495	-0.801	-1.097	-2.947	-3.318*	-2.464	-2.915	-0.711	-1.007	-3.684*	-4.034**
	(1.535)	(1.467)	(1.515)	(1.520)	(1.943)	(1.932)	(3.385)	(3.688)	(1.834)	(1.861)	(1.841)	(1.777)
$Post_{2008}\ GDP_{2008}$	-0.000468***	-0.000323***	-0.000467**	-0.000391**	-0.000594	-0.000450	0.00105*	0.000975*	-0.000614***	-0.000585***	-0.000525	-0.000383
	(0.000110)	(0.000105)	(0.000192)	(0.000180)	(0.000365)	(0.000302)	(0.000538)	(0.000531)	(0.000169)	(0.000150)	(0.000382)	(0.000316)
$Post_{2014}$	-6.041*	-4.961*	-5.288*	-4.418	-10.72***	-9.556***	-9.153	-9.543*	-5.395*	-5.163*	-10.21***	-9.015***
	(2.979)	(2.821)	(2.867)	(2.709)	(3.425)	(3.344)	(5.501)	(5.562)	(2.822)	(2.965)	(3.261)	(3.128)
$Post_{2014}\ GDP_{2014}$	-0.000925***	-0.000692***	-0.00137***	-0.00128***	-0.00124**	-0.00102*	0.00118	0.00119*	-0.00162***	-0.00156***	-0.00149**	-0.00127*
	(0.000217)	(0.000231)	(0.000437)	(0.000456)	(0.000545)	(0.000527)	(0.000688)	(0.000678)	(0.000317)	(0.000316)	(0.000631)	(0.000629)
Current health expenditure (% of GDP)		0.0856		0.0526		0.854*		-0.736		0.279		0.764*
		(0.292)		(0.491)		(0.436)		(0.842)		(0.359)		(0.423)
Net official development assistance received per capita		2.490***		1.563**		2.567*		-1.056		0.550		2.611*
		(0.502)		(0.622)		(1.254)		(1.572)		(0.957)		(1.476)
Constant	76.74***	67.70***	72.12***	66.38***	55.36***	42.43***	57.73***	64.89***	56.47***	53.14***	58.12***	45.49***
	(1.490)	(3.064)	(1.784)	(3.656)	(2.140)	(4.727)	(3.811)	(9.031)	(1.785)	(4.109)	(2.091)	(5.315)
Observations	456	431	456	431	456	431	320	296	456	431	456	431
R-squared	0.170	0.199	0.310	0.324	0.429	0.457	0.229	0.240	0.415	0.412	0.351	0.381
Number of countries	24	24	24	24	24	24	24	24	24	24	24	24
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 8: Estimates of the impact of the 2008 and 2014 crises on nutrition indicators

VARIABLES	(1) Vitamin A supplementation coverage rate (% of children aged 6–59 months)	(2) Vitamin A supplementation coverage rate (% of children aged 6–59 months)	(3) Average dietary energy supply adequacy (%)	(4) Average dietary energy supply adequacy (%)	(5) Average protein supply (g/cap/day)	(6) Average protein supply (g/cap/day)	(7) Prevalence of undernourish-ment (%)	(8) Prevalence of undernourish-ment (%)
$Post_{2008}$	5.808	7.484	0.553	1.239	-0.679	0.138	-1.478**	-1.628**
	(6.688)	(7.356)	(0.727)	(0.752)	(0.442)	(0.475)	(0.617)	(0.662)
$Post_{2008}$ GDP_{2008}	-0.000542	-0.000897	-0.000842***	-0.000818***	0.000184**	0.000148	0.000858***	0.000813***
	(0.00114)	(0.00144)	(0.000153)	(0.000186)	(8.70e-05)	(0.000110)	(0.000144)	(0.000169)
$Post_{2014}$	-37.72***	-37.92***	-1.815	-0.293	-2.088**	-0.676	-0.465	0.150
	(11.09)	(12.53)	(1.453)	(1.625)	(1.017)	(1.095)	(1.124)	(1.302)
$Post_{2014}$ GDP_{2014}	0.00180	0.00176	-0.000883***	-0.000930***	-0.000117	-0.000149	0.00112***	0.00109***
	(0.00170)	(0.00192)	(0.000260)	(0.000262)	(0.000222)	(0.000251)	(0.000213)	(0.000224)
Age dependency ratio, young (% of working-age population)		-0.727		-0.0991		0.0195		0.0493
		(0.811)		(0.132)		(0.0863)		(0.104)
Net official development assistance received per capita		3.199		-1.293***		-0.218		0.941***
		(3.490)		(0.466)		(0.281)		(0.353)
Log Household final consumption expenditure		-5.036		3.430***		1.618**		0.0662
		(8.963)		(1.165)		(0.746)		(0.708)
Constant	39.29***	200.6	106.2***	45.53*	56.55***	21.24	22.10***	14.63
	(4.587)	(199.9)	(0.553)	(25.03)	(0.308)	(16.69)	(0.509)	(16.50)
Observations	373	353	396	363	352	321	342	308
R-squared	0.391	0.381	0.886	0.904	0.967	0.972	0.923	0.935
Number of countries	23	22	22	21	22	21	18	17
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 9: Estimates of the impact of the 2008 and 2014 crises on education indicators

VARIABLES	(1) Education Index – UNDP	(2) Education Index – UNDP	(3) Primary school completion rate (% of relevant age group)	(4) Primary school completion rate (% of relevant age group)	(5) Lower secondary school completion rate total (% of relevant age group)	(6) Lower secondary school completion rate total (% of relevant age group)
$Post_{2008}$	0.839**	0.642	2.148	4.347	0.476	-3.358*
	(0.303)	(0.410)	(2.003)	(3.448)	(1.592)	(1.629)
$Post_{2008}$ GDP_{2008}	-0.000257***	-0.000364***	-0.000750**	-0.00389**	0.000249	0.00361**
	(4.23e-05)	(9.09e-05)	(0.000310)	(0.00157)	(0.000352)	(0.00129)
$Post_{2014}$	0.877	0.356	0.738	7.241	1.167	-1.414
	(0.561)	(0.886)	(3.354)	(5.745)	(2.597)	(2.955)
$Post_{2014}$ GDP_{2014}	-0.000567***	-0.000511***	-0.00217*	-0.00866***	-0.000357	0.00171
	(9.00e-05)	(0.000140)	(0.00111)	(0.00238)	(0.000531)	(0.00185)
Log Personal remittances received		0.0855		1.776		1.604
		(0.228)		(1.135)		(1.787)
Net official development assistance received per capita		-0.000293		-0.00114		-0.00706
		(0.00209)		(0.0121)		(0.0138)
Constant	30.83***	29.67***	47.72***	18.89	21.89***	-4.365
	(0.460)	(3.856)	(2.188)	(19.19)	(1.286)	(31.06)
Observations	448	359	294	248	240	207
R-squared	0.871	0.887	0.544	0.598	0.653	0.688
Number of countries	24	21	22	19	19	17
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 10: Estimates of impact of the 2008 and 2014 crises on adolescent fertility rate and open defecation

VARIABLES	(1) Adolescent fertility rate (births per 1,000 women aged 15–19)	(2) Adolescent fertility rate (births per 1,000 women aged 15–19)	(3) People practising open defecation (% of population)	(4) People practising open defecation (% of population)
$Post_{2008}$	-0.501	-2.710*	-0.191	-1.562*
	(0.670)	(1.461)	(0.298)	(0.788)
$Post_{2008}$ GDP_{2008}	-2.49e-05	0.00239**	0.000103	0.00126***
	(0.000200)	(0.00115)	(0.000134)	(0.000306)
$Post_{2014}$	-1.810	-5.630**	-0.569	-2.337
	(1.258)	(2.505)	(0.604)	(1.501)
$Post_{2014}$ GDP_{2014}	-0.000105	0.00401**	0.000345	0.00208***
	(0.000374)	(0.00190)	(0.000278)	(0.000523)
Old-age dependency ratio (% of working-age population)		3.991*		
		(2.178)		
Population density		-0.0213		
		(0.107)		
Country Policy and Institutional Assessment (CPIA) gender equality rating (1=low to 6=high)		-2.655		
		(2.308)		
Log Personal remittances, received				0.853*
				(0.444)
Net official development assistance received per capita				-0.00610**
				(0.00215)
Log Rural population				19.19
				(13.25)
Log Urban population				-0.752
				(18.31)
Constant	139.6***	125.4***	36.28***	-253.6
	(1.538)	(11.27)	(0.947)	(346.4)
Observations	456	304	431	347
R-squared	0.791	0.832	0.599	0.717
Number of countries	24	22	24	21
Year fixed effects	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 11: Social protection policy responses to COVID-19 in the West and Central Africa Region

| Country | Social assistance | | | | | | | Social insurance | | | Labour market | | Total |
| | Cash-based transfer | | In-kind transfers | | Utility waivers and subsidies | | | | | | Wage subsidy | | |
	General cash transfer	Child grant and childcare support	Food, vouchers, etc.	Child nutrition/ school feeding	Mobile money user fees	Water and electricity subsidies	Housing subsidies and debt/ tax moratorium	Health insurance	Pensions	Social security contributions	Formal sector workers	Informal sector workers	
Benin	1				1								2
Burkina Faso	1		1		1	1							4
Cabo Verde	1		1	1			1			1	1	1	7
Cameroon	1				1				1	1			4
Central African Republic	1					1							2
Chad						1							1
Congo, Rep.	1		1										2
Côte d'Ivoire	1		1		1	1		1					5
Congo, Dem. Rep.	1					1							2
Equatorial Guinea			1										1
Gabon			1			1	1						3
Gambia	1	1	1	1									4
Ghana	1		1		1	1			1				5
Guinea	1		1			1							3
Guinea-Bissau			1		1								2
Liberia	1		1	1		1							4
Mali	1		1		1	1							4
Mauritania	1		1			1	1						4
Niger	1		1		1								3
Nigeria	1		1				1						3
Sao Tome and Principe	1												1
Senegal			1		1	1							3
Sierra Leone	1		1									1	3
Togo	1				1								2
	19	1	17	3	10	12	4	1	2	2	1	2	74

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