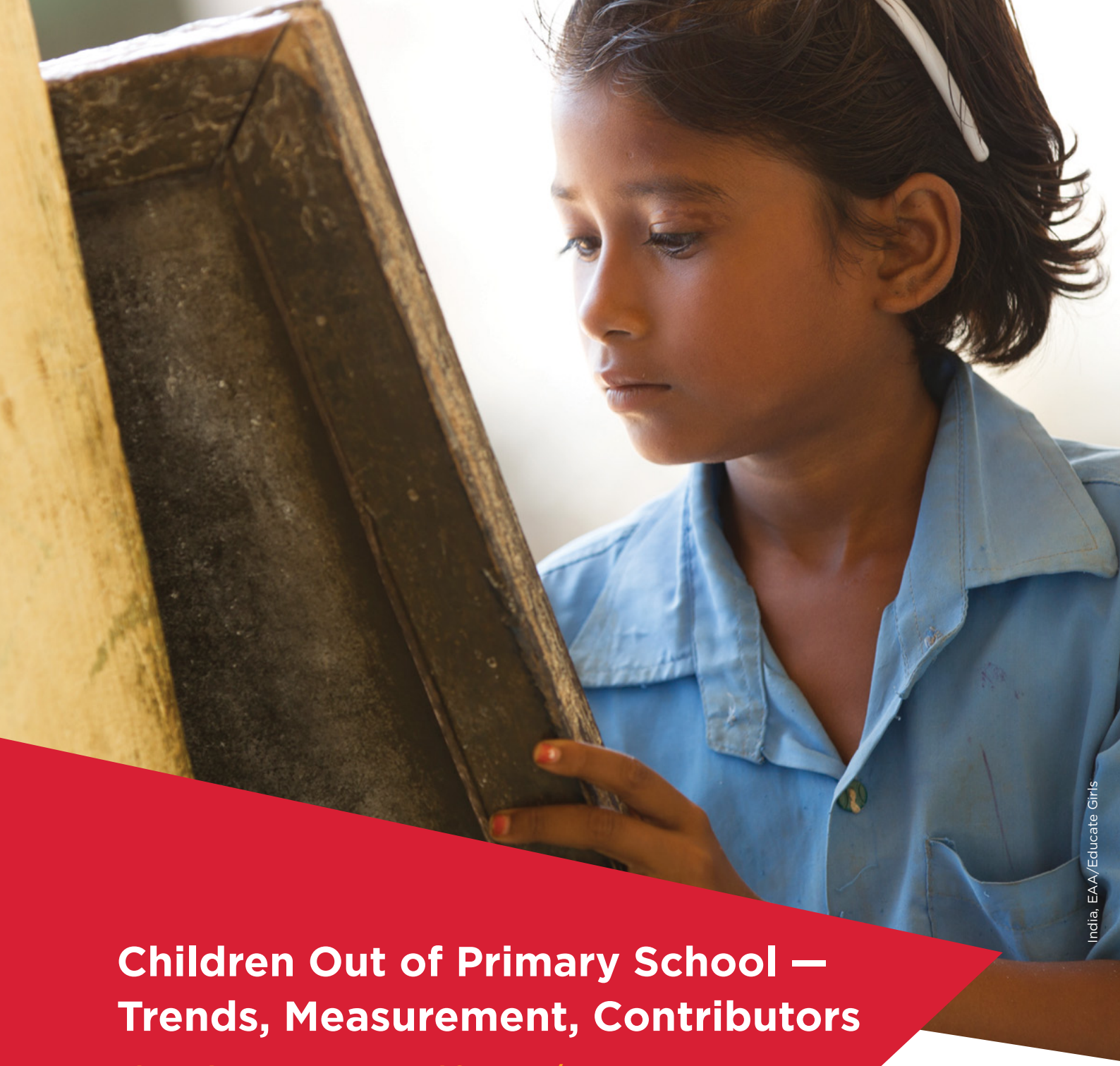

India, EAA/Educate Girls

Children Out of Primary School — Trends, Measurement, Contributors

Discussion paper prepared for EAA/EAC, August 2023

التعليم فوق الجميع | education above all

علّم طفلاً
EDUCATE A CHILD
A programme of education above all

ACKNOWLEDGEMENTS

Educate A Child (EAC) wishes to extend its sincere thanks to Mr Bilal Barakat for authoring this publication and to FHI 360 for their valuable contribution in fielding and managing this publication.

DISCLAIMER

FOREWARD

Education for all is a lofty goal and one that easily rolls off the tongues of educators and politicians alike. However, the realisation of this ambition is much more challenging. In his detailed and thoughtful paper, Mr. Bilal Barakat took on the challenge of addressing some of the reasons for this.

Bilal was asked to contribute to Education Above All Foundation's Educate A Child (EAC) programme initiative, to explain why, despite significant advocacy, effort and investment by EAA/EAC and others, the needle on the data on out of school children (OOSC) at the primary level has not moved in ways the world purported to wish over the last decade.

The data and analysis in this document point to some inconvenient truths and bitter pills to swallow. First, where there are OOSC, these are not only the hardest-to-reach children (a priority for EAC), but in countries where failures in the education system result in large numbers of children not being in school. And, second, a lack of funding is a crucial constraint to improving the education offered for all OOSC, marginalised or not, and this lack of priority is generally shared by governments, whether they are recipient nations or funding partners.

EAC and EAA have documented elsewhere that there has been positive change in relation to investments in, knowledge about, and progress towards enabling the right to a quality primary education for all children. This publication underscores the importance of understanding the range and diversity of barriers that result in OOSC, including all forms of discrimination, child labour, distance to school, lack of investment, poverty, and instability.

One of the key findings of this paper concerns data in relation to OOSC. Over the past decade, both technology and our understanding of data have evolved considerably. This has resulted in much more accurate counting of, or determining estimates for, OOSC, amongst the many improvements in data on education. As a result, a decade ago the announced number of OOSC at the global level was clearly a significant underestimate.

Yet there is no reason to be discouraged. EAC has always advocated that in order for it to count, each child needs to be counted - the global community is getting closer to making that possible. We are grateful for that. Nonetheless, there is still much work that needs to be done.

Mary Joy Pigozzi, PhD
Executive Director
Educate A Child

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Acronyms

DHS	Demographic and Health Survey
ECW	Education Cannot Wait
EFA	Education for All
EMIS	Education Management Information System
GCPEA	Global Coalition to Protect Education from Attack
GDP	Gross Domestic Product
GEM (GEMR)	Global Education Monitoring (Report)
IDP	Internally Displaced Person/People
ISCED	International Standard Classification of Education
LCU	Local Currency Unit
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
NER	Net Enrolment Rate
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OOS	Out of School
OOSC	Out of School Children
PPP	Purchasing Power Parity
SDG	Sustainable Development Goals
UIS	UNESCO Institute for Statistics
UNDESA	United Nations Department of Economic and Social Affairs
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
UPE	Universal Primary Enrolment
WPP	World Population Prospects
WIDE	World Inequality Database on Education: www.education-inequalities.org

1. Introduction

Access to school matters, especially to primary school, where the elementary skills for participation in society are on the curriculum. That merely being in school is far from being a sufficient condition for actually learning, or for experiencing equity or escaping marginalization makes it no less a necessary prerequisite.

The number and percentage of school-age children out of school (OOS) has long captured the imagination of the international education development community and a broader interested public beyond its limited recognition in official indicator frameworks. Its current definition is: *'The number of students of the official age for the given level of education enrolled in early childhood education, primary, secondary or higher levels of education is subtracted from the total population of the same age*'.

The lead indicator for education under the Millennium Development Goals (MDG) agenda up to 2015 was expressed in terms of the OOS rate's complement,[1] the Net Enrolment Ratio (NER), limited to the primary level. Under the monitoring framework for Sustainable Development Goal 4 on education (SDG 4), learning outcomes and school completion rates as 'global indicators' for SDG 4 have relegated the OOS rate (now for all levels of schooling) to the status of 'thematic indicator' adopted by the international education community, but not monitored by the official top-level monitoring of the SDGs across all goals.

At the level of discourse around SDG 4, recent years have been dominated by the recognition that enrolment is not enough and progress in our understanding of learning outcomes, their drivers, and their limitations. However, as it is becoming increasingly clear that even the more limited goal of universal primary and secondary school enrolment by 2030 is likely to be missed, interest is increasing again in understanding why too many education systems fail at the most basic, *sine qua non*, task of ensuring that all school-age children attend school.

The purpose of the present study is to review the contribution of various factors to global dynamics in the number and share of children out of primary school. This includes processes such as population change, statistical accounting effects, and the role played by selected disadvantaged groups. The aim here is not to review the causes and consequences of their educational disadvantage, but more narrowly to understand their numerical contribution to aggregate statistics.

[1] Note the caveat in Box 4, which also discusses how the current OOS definition mentioned above differs from that at the time.

Following this introduction, **Section 2** reviews trends and patterns in statistics on out of school numbers and rates based on the most recent estimates, published less than a year ago. As these represent a methodological innovation and demonstrate the limitations of previously used data they supersede, this makes comparisons with past OOS reports moot. Indeed, this section also includes discussions of methodological challenges and their implications and considers statistical distortions as a potential explanation for apparent trends in OOS figures. It also presents a typology of countries with distinct contributions to the global pattern. **Section 3** considers the implications of children being out of school for the level of schooling they ultimately attain. **Section 4** examines the direct and indirect effects of population growth as an explanation for why global progress in lowering OOS rates has stalled. **Section 5** presents a series of simple calculations to bound the contribution of various specific sources of disadvantages (gender, extreme poverty, disability, conflict and forced displacement) to stalled progress, concluding that global dynamics are not driven by any particular group. Accordingly, **Section 6** reviews prima facie evidence of elevated OOS rates as indicative of systems failure and a lack of prioritization, before the conclusion in **Section 7**, which summarizes the key points from the report before presenting a call for promising avenues for further research.

A note on terminology and conventions used

According to convention in the SDG 4 context, we speak of out of school children at the primary level, adolescents at the lower secondary level, and youth at the upper-secondary level, regardless of the specific age ranges and how these differ between countries. These levels are understood in terms of the International Standard Classification of Education (ISCED) and are preferred to national terms (such as 'elementary' or 'basic' level).

While the complementarity between enrolment and being out of school is not without subtlety, 'non-enrolment' is used as a synonym for 'being out of school' where the latter (never mind 'out-of-school-ness') would be grammatically awkward. Countries are grouped according to SDG world regions and/or World Bank income classification and referred to according to their preferred style as noted by the United Nations.

2. Trends and patterns in Out of School (OOS) statistics

2.1 Global overview

Throughout the first two decades of the 21st century and until a year ago, the best available evidence on global numbers and rates of children who are out of school was based on official enrolment and school-age population figures voluntarily reported by countries through the UNESCO Institute for Statistics (UIS) annual survey. This exercise was the only regular, systematic attempt at standardizing (e.g., with respect to the definition of different levels of schooling) and quality-controlling global out of school statistics. Even so, a lack of regular reporting (or indeed any reporting) by many countries, including countries with large OOS populations, meant that aggregate regional or global figures could not be calculated reliably.

Aggregating OOS statistics for a given year based on the national figures that happen to be available for that year would lead to large fluctuations simply because the country coverage would change (e.g., think of including India's OOS children in the tally one year but not the following year). Unavoidably, therefore, any estimate of trends in aggregate OOS numbers relied on imputation, typically by simply 'carrying forward' the latest available rate for each country — information ten years old in some cases or even older. For example, Angola, Kenya, and Nigeria last reported OOS figures to the UIS in 2011, 2012, and 2010 respectively.

Efforts at creating publishable aggregates through imputation and incorporation of alternative data for individual countries largely focused on estimating aggregate rates, an official SDG indicator and easier to normalize. Estimating trends in aggregate numbers by applying these rates to updated school-age population figures (where those were even available) meant an additional processing step that potentially introduced further error.

For lack of a better alternative, the picture emerging from this approach has shaped the narrative surrounding OOS trends: a rapid decline in the number of OOS children came to a sudden halt around 2008–2010 and has essentially stalled since **(Figure 1)**. This striking pattern has prompted an ongoing search for explanations and ways to restart further progress. Speculation included that the apparent stall might be a statistical artefact due to a lack of current data on some major countries, or related to the 2008 financial crisis, or that most of the gains had been concentrated in India, which put a ceiling on a continuation of that trend once the Indian education system reached diminishing returns.

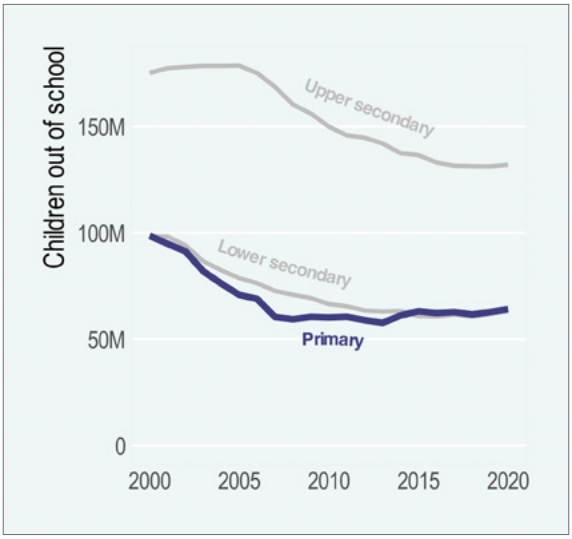

Figure 1: Outdated estimates of out of school children based on administrative data only

Household surveys such as the Demographic and Health Surveys (DHS) or UNICEF's Multiple Indicator Cluster Surveys (MICS) also capture information on the school-going status of children in the surveyed households.

This information often diverges markedly from the numbers derived from administrative information collected by ministries of education. While survey-based figures always served as an informal, if important, 'reality check' on official statistics, it remained unclear how to reconcile these two types of OOS data systematically. They suffer different types of errors, and in addition, there was a notion that administrative and survey data by construction collect conceptually distinct aspects of school participation (see Box 1) and are therefore inherently incommensurable. These concerns meant there was little motivation to attempt to overcome the practical difficulties of combining them. Moreover, estimates from different surveys disagree not only with administrative data but frequently with each other,[2] casting doubt on the benefit of including this information.

In the SDG era, however, household surveys have taken on an increasingly prominent role recognized in the official indicator framework. While administrative enrolment data can typically be disaggregated by gender and perhaps urban/rural location at best, education inequalities with respect to personal characteristics such as the socioeconomic status of the household or disability, critically rely on survey data. Moreover, information on learning outcomes required for monitoring SDG target 4.1.1 relies on survey-based large-scale learning assessments. The resulting situation of publishing overall national OOS rates based on administrative but disaggregations by wealth quintile, say, based on survey data became increasingly untenable. This amounted to publishing disaggregations (from one source) without any guarantee that they were compatible with the aggregate value (from another), which logically should be an average of the former.

Recently, administrative registers and household survey data have been combined in a statistically principled way through a joint effort by the UIS and the Global Education Monitoring (GEM) Report to produce a comprehensive and consistent set of estimates of OOS statistics.[3] This new approach also extracts more usable trend information and therefore allows for reasonable extrapolation instead of bridging data gaps by holding the latest available figure constant regardless of how dated it is.

[2] In India, estimates for the primary OOS rate differed between three major 2011–2014 data sources from 3% to 20% (UIS/UNICEF. 2016. Estimating the Number of Out of school Children. Methodological Problems and Alternative Approaches. India case study).

[3] UNESCO Global Education Monitoring Report. 2022. New estimation confirms out of school population is growing in sub-Saharan Africa. https://unesdoc.unesco.org/ark:/48223/pf0000382577

The novel estimates add important nuance to the established narrative **(Figure 2)**. They confirm that there was sustained progress during the early to mid-2000s, but the progress since has slowed down significantly. However, these data suggest the overall decline since the year 2000 has been steeper than previously thought and continued throughout the 2010s until very recently,[4] even if at a greatly reduced pace. These conclusions are not as optimistic as they sound, however, because they follow from the fact that historical primary OOS numbers appear to have been underestimated significantly — at times by 20 to 30 million children.

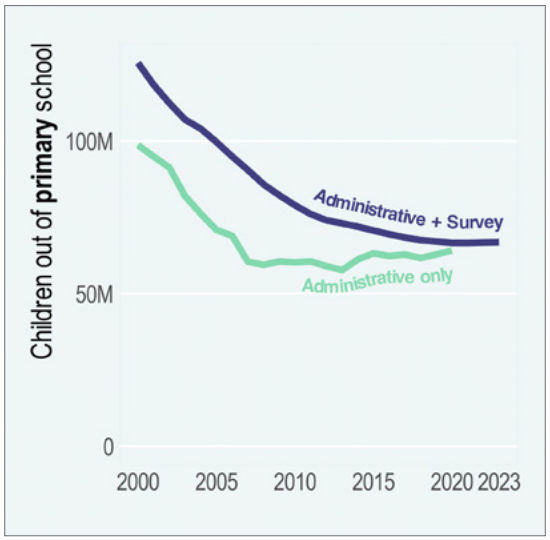

Figure 2: Children out of primary school estimated on all versus only administrative data.

Such a revision might appear large but is consistent with the amount of uncertainty involved (see also Box 2). One advantage of the new estimation method is that it produces prediction intervals to quantify the uncertainty arising from the variation in the underlying data sources for a given country.

[4] The model does not include an explicit trend break to account for the effects of COVID-19. Indeed, the latest raw data entering the estimation predates the pandemic for the vast majority of countries. Accordingly, estimates from 2020 to 2023 essentially represent pure extrapolation.

Box 1:

Enrolment vs Attendance

The data for estimating OOS rates come from administrative registers or household surveys. Strictly speaking, these may not capture the same measure of school participation. Administrative data based on school registers capture the number of students enrolled. They may or may not be in regular attendance. Household surveys may also query a child's school enrolment status, but more typically will ask about actual attendance. This creates a potential discrepancy between the two types of data sources even within the same country.

For a time, it was presumed that this discrepancy results in a consistent direction of bias. Children may be enrolled without actually attending, but there is little reason to expect a child to attend without being enrolled. Based on this reasoning, OOS rates derived from enrolment should consistently be lower than those based on attendance. Moreover, to the extent that school enrolment is misreported, there would typically be an incentive for school administrators to inflate enrolment, not to hide it if schools received some funding on a per-student basis. Again, this would imply the same direction of bias.

However, careful analysis of data from both types of sources showed that the direction of the discrepancy between enrolment and attendance figures is not consistent in practice.[5] The above arguments notwithstanding, survey-based estimates of actual school attendance can and do exceed school-based estimates of enrolment sometimes. This is explained partly by sampling variation, and partly by the failure of the above assumptions.

In particular, even if enrolment logically exceeds attendance at the same school, it may be that households report their children's attendance at certain types of schools that are not officially recognized and whose enrolments therefore are not counted in administrative statistics. A case in point is Koranic schools in many parts of the world, from West Africa to South-East Asia. Current guidance for OOS analyses highlights the importance of defining which types of non-formal or alternative education programmes should be considered for purposes of being 'in school',[6] but such guidance is aimed at analysts and may be less easy to communicate to survey respondents. In addition, household sampling frames may exclude certain sub-populations, such as nomads. If these groups have low school participation, survey-based figures that exclude them may overestimate average school attendance compared to administrative statistics that are more likely to include them in population-based estimates of the school-age population.[7]

Ultimately, the evidence suggests that rather than making administrative and survey-based estimates of OOS rates fundamentally incommensurable or creating a systematic bias, the difference between enrolment and attendance can be treated as merely one source of variation among many.

[5] UNESCO Institute for Statistics. 2017. Estimation of the numbers and rates of out of school children and adolescents using administrative and household survey data. Information Paper No. 35. http://uis.unesco.org/sites/default/files/documents/ip35-estimation-numbers-rates-out of school-children-adolescents-household-2017-en.pdf

[6] See Section 1.3.1 in UNICEF. 2023. Operational Manual: Global Out of school Initiative. UNICEF in partnership with UNESCO and ILO. https://www.allinschool.org/reports/operational-manual

[7] Roy Carr-Hill. 2012. Finding and then counting out of school children. Compare: A Journal of Comparative and International Education, 42:2, 187-212, DOI: 10.1080/03057925.2012.652806

For the current 2023 figure, the range for the number of OOS children, adolescents, and youth across all levels of schooling consistent with the data is 220 to 262 million. While this is certainly lower than the estimated range for the year 2000 of 380 to 429 million, it overlaps considerably with the range estimated for the year 2010 of 252 to 279 million. In other words, the conclusion that progress has stalled is not called into question by the uncertainty identified in the estimates.

While the new estimates show a continuing decline in the number of children out of primary school, this pace of improvement has slowed over time, even if it has done so more smoothly and without an abrupt halt.

A light-weight quantification of the extent to which the decline in the number of OOS children at the primary level has slowed is shown in **Figure 3**. Their global number dropped from around 125 million in 2000 to just over 85 million by 2008. If that decline had continued linearly, in other words, by the same number of children each year, only around 14 million children would be out of primary school today. In fact, the estimate for their current number is around 67 million. Assuming the rate of decline during 2000–2008 had continued so that their number had declined exponentially rather than linearly, there would be around 43 million children out of primary school today.

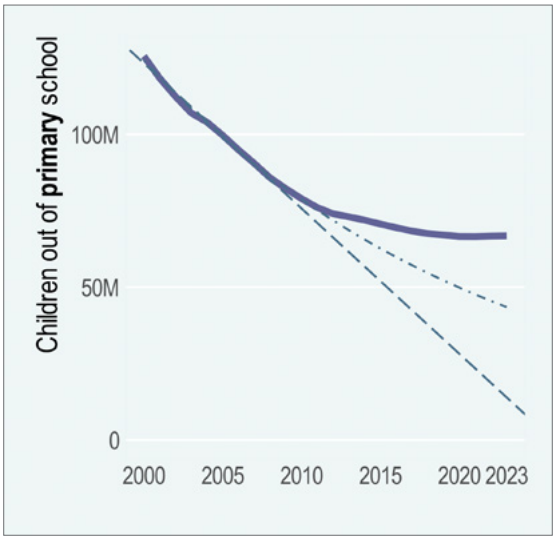

Figure 3: Children out of primary school globally, actual versus linear versus exponential decline

For OOS children across all levels of schooling, the conclusion is similar. Their global number had dropped from just over 400 million in 2000 to 300 million by 2008. If that decline had continued linearly, in other words, by the same number of children each year, fewer than 100 million children would be out of school today. In fact, the estimate for their current number is around 240 million. Assuming the rate of decline during 2000–2008 had continued instead, there would be around 164 million.

It had previously been speculated that perhaps the stalled decline was a statistical artefact resulting from a lack of recent data observations for a number of large countries. Because their 'latest available' OOS numbers would have been carried forward as imputed values, this would bias the global average towards remaining constant. However, this attempted explanation fails in light of the fact that the new estimates based on gapless time series for all countries continue to show a stalling decline in the number of children out of primary school.

Roy Carr-Hill. 2013. Missing Millions and Measuring Development Progress. World Development 46: pp. 30- 44, www.sciencedirect.com/science/article/abs/pii/S0305750X13000053

Box 2:

Uncertainty, ambiguity, and errors in OOS data

The variation between OOS statistics produced at different times, by different stakeholders, or based on different data sources should not come as a surprise, given the many sources of potential uncertainty, ambiguity, and errors.

Uncertainty in the strict sense is taken to mean statistical or stochastic uncertainty in the present manuscript, such as that arising from finite household survey samples, for instance, or population projections. By contrast, ambiguity refers to the fact that not all sources necessarily share identical conceptualizations, definitions, or operationalization of what it means to be 'out of school'. For instance, is a child who is enrolled, but has not attended school in a month 'in school'? What about three months? What if it attends an unrecognized non-government school? Finally, outright errors arise from the omission of certain subpopulations from the data collection (such as street children or nomads), misreporting of enrolments, age misreporting, as well as plain mistakes in data entry or processing.

From first-hand experience, the present author can report that comparisons between OOS estimates produced by UIS, the GEM Report, and UNICEF, based on the same data and ostensibly using the same definitions, frequently resulted in different numerical values, in some cases of several percentage points. Some of these discrepancies remained inexplicable even after careful joint review. Typical sources of disagreement were judgement calls on how to classify idiosyncratic, context-specific types of education, but also data processing choices such as how to treat missing data, or how to handle inconsistent observations such as responses indicating never having entered school but having completed a non-zero number of years of schooling.

Methodologies for OOS statistics not only change over time but may also, for good reason, differ between global data collection exercises and in-depth country studies. The OOS Children Initiative's recent new Operational Manual lists four major differences between the general methodology and that applied for estimates in the context of the Syria crisis, for instance. In general, national OOS studies may use definitions of the education system without international harmonization and harness alternative data sources.

Key messages:

- State-of-the-art OOS estimates combining administrative and survey data render past OOS statistics obsolete. The remainder of the present analysis and discussion refers to the new estimates unless noted otherwise.
- Trends or changes over time cannot be deduced from OOS statistics published at different times or by different organisations, only from time series published as such. Apart from changes to the OOS definitions, population data are typically revised retrospectively as new census information becomes available.
- Efforts at the exegesis of small or year-on-year changes in OOS figures are misplaced. Only large changes arising from consistent trends over time should be interpreted or explained in terms of education policy and development. Sudden large changes without a clear-cut explanation (fee abolition, Taliban school closure, etc.) should be assumed to reflect infidelities in the data until proven otherwise.
- The decline in children out of primary school has slowed down during the last decade, but
    - less suddenly than previously thought, and
    - because the past was even worse than previously thought, not because the present situation is better.

Andrew McConnell/EAA

2.2 Where are the OOSC?

To make progress in understanding the dynamics, we must understand where the OOS children are to be found. Cross-classifying countries by SDG region (Oceania omitted) and World Bank income classification **(Figure 4)** shows that the bulk of today's out of primary school children are located:

- in low and lower middle-income countries in Sub-Saharan Africa
- in lower middle-income countries in Central and Southern Asia
- in low-income countries in Western Asia and Northern Africa
- in upper middle-income countries in Eastern and South-eastern Asia as well as Latin America and the Caribbean

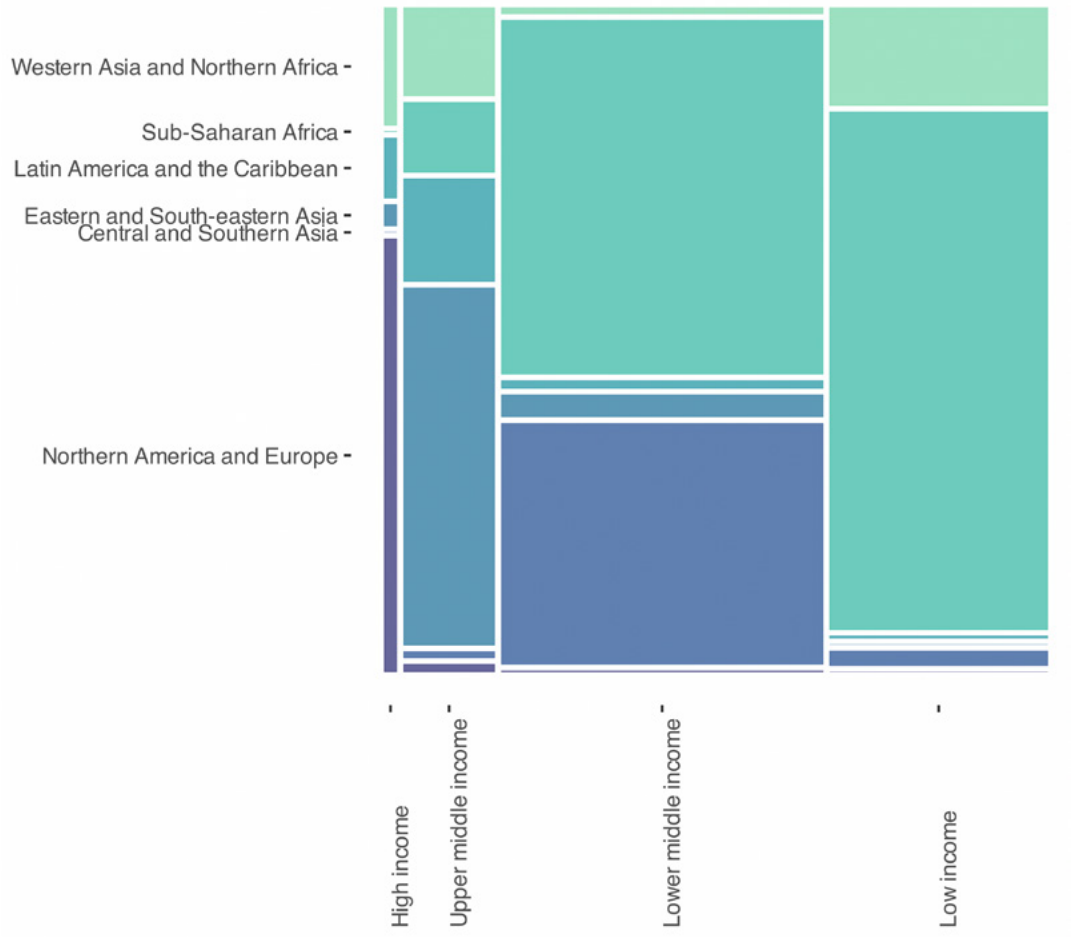

Figure 4: Children out of primary school 2023 by region and income

Note that even in high income countries (such as Romania, Panama, or the United Arab Emirates), not all primary-school-age children are in school. At higher, but still compulsory levels of schooling, this is even more common. At the upper-secondary level, Switzerland posts an OOS rate of 17% — but at least partly this may be explained by early graduates, as discussed further below.

Box 3:

Can you be 'out of school' at a level you have completed?

At the end of upper-secondary schooling, a slight infidelity in OOS statistics is caused by the fact that the definition of who is of upper-secondary school-age is based on the duration of the type of upper-secondary school that is most common in a given country. This leaves open the possibility that there are other types of schools that are also classified as conferring an upper-secondary qualification, but whose duration is shorter. The recent graduates of this latter type will still count as being of upper-secondary school age, but those among them who do not immediately enter post-secondary education will count as 'being out of secondary school' despite having already completed secondary school. The same is true when the upper-secondary level is not compulsory and a significant number of youth are encouraged to pursue work-based training.

This issue remains unresolved (beyond considering complementary statistics on so-called 'NEETS': youth 'not in education, employment, or training'), partly because it is relatively small in scale and perhaps partly because its effect is largely limited to creating a 'cosmetic' nuisance for some high-income countries. It is mentioned here for two reasons. First, it provides an inkling of the importance of the specific duration of different levels of schooling. Second, it highlights a conceptual point that, in principle, also applies at the primary level. It may seem obvious that a primary school-age child who already completed primary school (early entry being surprisingly common) but is not continuing with secondary school is, in fact, out of school. However, this means that if we are comparing countries specifically on their primary OOS rates, a country's result would nominally improve if that child instead started school a year later and then dropped out after failing the final grade.

This question demonstrates that OOS statistics across multiple levels of schooling do not cleanly 'disaggregate' conceptually: a classification rule that is meaningful for boundary cases at one level of schooling may be less meaningful at a different level, and the degree to which it is may depend on whether we examine that level in isolation or as part of the whole school life course.

It is clear that the categories of 'lower middle-income countries in Central and Southern Asia' and 'upper middle-income countries in Eastern and South-eastern Asia' are dominated by India and China respectively. China's impact on the change in the past two decades is moderated by the fact that its large steps towards near-universal primary enrolment took place well before, and its primary OOS rate was already down to 3% by the year 2000. By contrast, India in 2001 launched its flagship policy for universalizing primary education by 2010, Sarva Shiksha Abhiyan. Despite its well-documented limitations, such as the training and qualifications of community teachers, the policy achieved significant success, at least in terms of enrolment. As a result, more than half of the global net decline in the number of children out of primary school is accounted for by India **(Figure 5)**, dwarfing the impact of any other country.

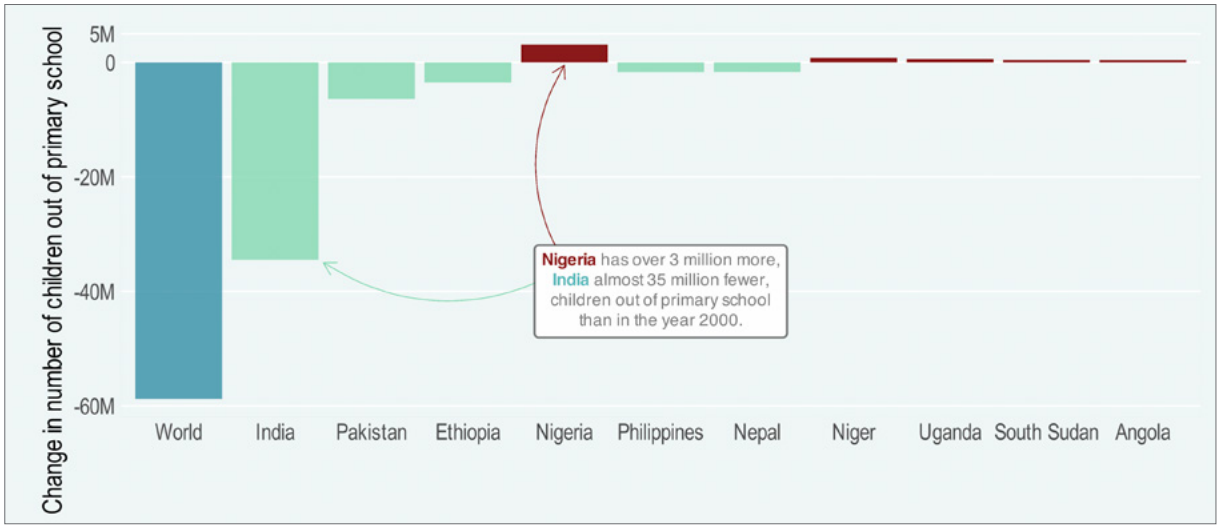

Figure 5: Contributions to net change 2000–2023 in children out of primary school. Countries with the five largest positive and five largest negative changes are shown.

Figure 6 shows that even disregarding the particular dynamics of India and China, most of the decline, but also a current plurality of, children out of primary school occurred in lower middle-income countries. By contrast, the number of OOS primary-age children in low-income countries has declined little in the past two decades and is showing clear signs of increasing again in recent years. It is also evident that the slow-down in improvement during the 2010s compared to the previous decade is not entirely due to India hitting a ceiling at that time. The role population growth plays here is investigated further below.

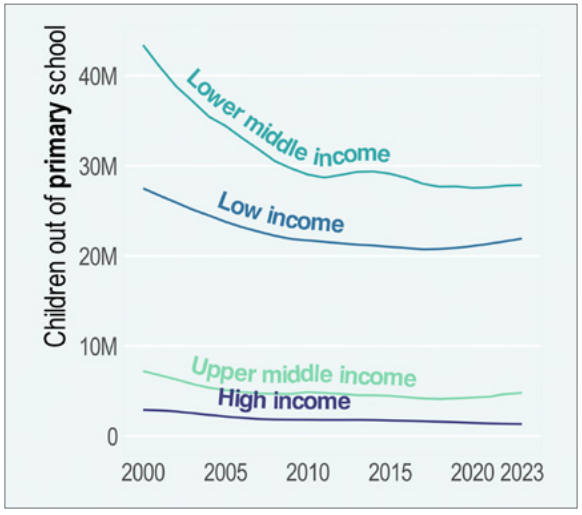

Figure 6: Children out of primary school globally, by income group, excluding China and India

That an understanding of OOS dynamics at the country level is critical is highlighted by the fact that around half of out of school children at the primary level are located in only six countries.

The countries home to one of the ten largest populations of children out of primary school in either 2000 or 2023 are shown in **Figure 7**. Indonesia and the Philippines dropped out of the top ten and were replaced by Angola and Niger, for a total of twelve countries that were in the top ten either at the start or at the end. The pattern of decelerating decline is almost universal. However, the fact that the inflection point varies tremendously, from the early to mid-2000s in Angola or Tanzania to around 2010 in Niger and even later in Ethiopia, suggests that there is no single global explanation, such as blaming the 2008 financial crisis. It is also clear that the inflection does not indicate diminishing returns in the sense that it would tend to occur at a similar level where only the 'hardest to reach' remain out of school, but that different countries have stalled at various levels while some experienced a slowdown without fully stalling.

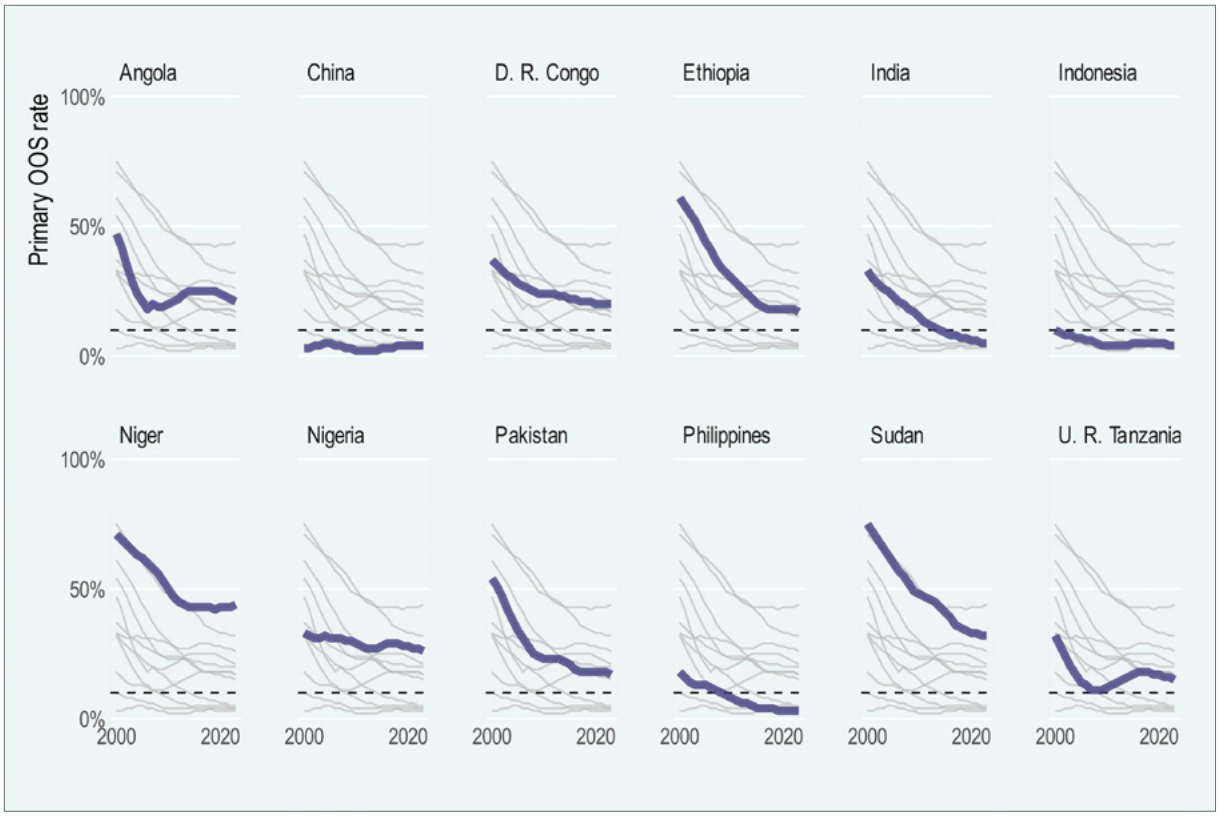

Figure 7: Decline in the primary out of school rate 2000–2020, selected countries with the largest numbers of children out of primary school.

The largest contributors to the global OOS population can be categorized not only in terms of world region or income, but perhaps more fruitfully, in terms of how their large OOS population arises from the combination of OOS rate and population size **(Figure 8)**.

Some countries, in the top-left quadrant, and notably including India and China, have relatively moderate OOS rates at primary level, but due to their extremely large (school-age) populations, even a small percentage translates into many millions of OOS children. Dropping that number will require getting very close to truly universal, 100% enrolment, by reaching what remains of the hardest to reach children not yet in school.

This contrasts with the situation of countries in the bottom-right quadrant. These are countries that are relatively small in terms of population, but feature such dismal enrolment rates that they are among those with the largest absolute number of OOS primary children regardless. The challenge here is that very large improvements will be required to achieve a decline in the absolute OOS numbers that is noticeable at the global level.

At once the most problematic and where the most gains are possible are countries in the top-right quadrant that are characterized by both high OOS rates and large populations. Nigeria stands out as the single most problematic location, but this group also includes Pakistan, the Democratic Rep. of Congo, Ethiopia, and to a lesser extent the United Rep. of Tanzania.

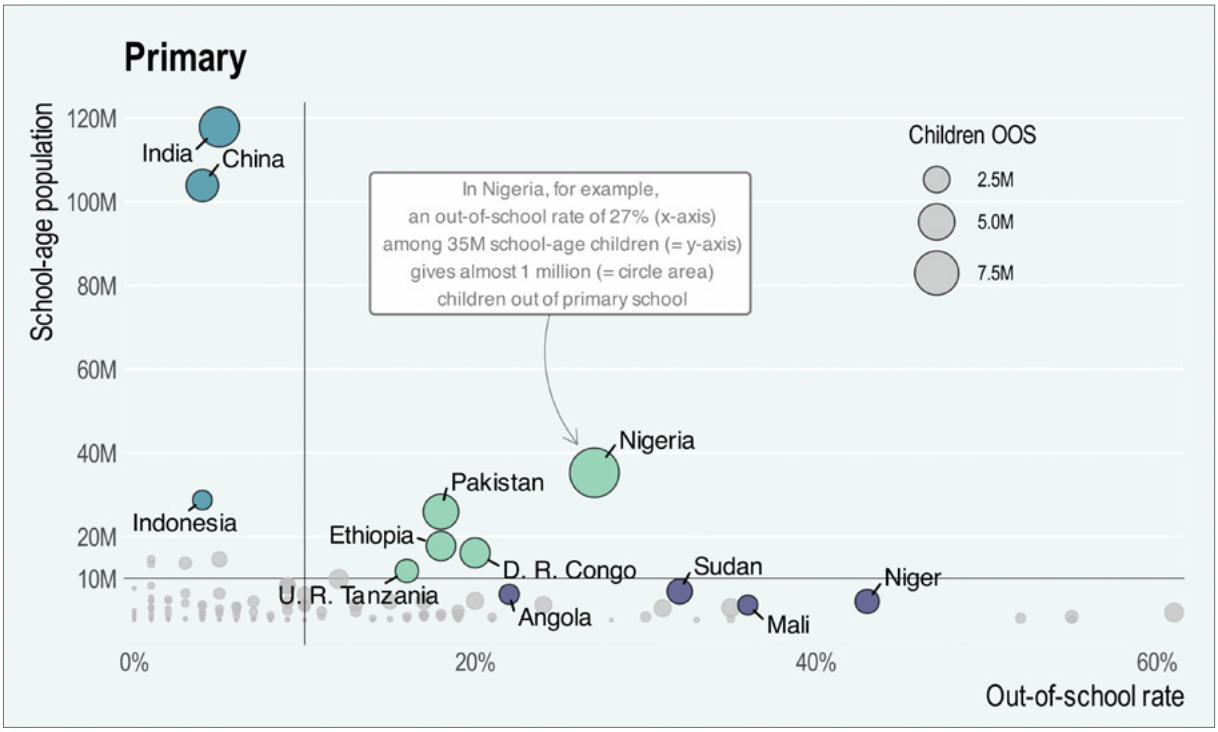

Figure 8: Countries by primary out of school rate, school-age population, and children out of school

Key messages:

- More than half of the global net decline since 2000 in the number of children out of primary school is accounted for by India, similar to the effect of China during previous decades.
- Even without India and China, more children out of primary school are in lower middle-income countries than in low-income countries, even after lower middle-income countries saw the largest decline.
- Eight of the countries with the ten largest populations of children out of primary school in 2000 were still in the top ten in 2020.
- Most of the countries with the largest populations of children out of primary school have experienced slowing progress, but with trend breaks at different times and ceilings at different levels. There is no archetypical trajectory.
- We can distinguish between the contribution of
    - countries with marginal OOS rates but huge populations,
    - moderately-sized countries with dismal OOS rates, and
    - countries that have both large populations and moderate to high OOS rates.

Senegal, EAA/buildOn

3. The cumulative impact of OOS experience

Out of school indicators are defined with respect to the corresponding school-age population. For individuals past the age of primary school attendance, the issue becomes their lack of primary school completion rather than their current non-attendance. The specific data sources and quality problems for completion rates differ from those of enrolment data (even if collected in the same survey). The implications are different, too, in that this no longer tells us about current education system performance, but performance in the past.

Pakistan, EAA/Alight

Box 4:

(When) is the OOS rate identical to 100% - Net Enrolment Rate (NER)?

Intuitively, being out of school is the opposite of being in school, and accordingly, the OOS rate may be thought to be the complement to 100% of the NER. That the interpretation is not as straightforward as it seems is illustrated by the fact that the NER has had to be revised from its strict definition (the number of school-age children at a given level of schooling enrolled at that level divided by the number of school-age children at that level) more than once, first to the 'adjusted NER' and later to the 'total NER', to align with our intuitions and intention.

Estimating the OOS rate as 100% - NER would incorrectly have treated primary-school-age children who are already enrolled in secondary school as being 'out of school'. The 'adjusted NER' accounted for this by including children of the appropriate age enrolled in the given level or higher in the numerator. Estimating the secondary OOS rate as **100**-adjNER$_{\mathbf{sec}}$ would continue to treat secondary school-age children who are still attending primary school as being 'out of school', conflating the distinct challenges of over-age enrolment and non-enrolment. The 'total NER' finally includes children of the appropriate age enrolled at any level of schooling in the numerator.

For a while, this created an inconsistency with respect to primary school-age children who are still enrolled in pre-primary education. While the total NER explicitly included them, their status for purposes of the primary OOS rate remained controversial. The indicator calculations methods have continued to evolve as part of the SDG 4 monitoring framework. When the OOS definition was explicitly changed in 2018 to considering them as being in school, the global primary OOS number was adjusted downwards by as much as 4 million purely due to the change in definition.[8]

[8] UNESCO. 2020. Global Education Monitoring Report 2020: All means all, p. 212.

Completion is of course related to 'survival' to the final grade. In theory, projections of the survival rate of new entrants could be calculated to give an estimated survival rate, using detailed data on grade and age-specific repetition, dropout, and promotion rates. In practice, this granular information is rarely available, certainly not at international level. Accordingly, to the extent that comparative estimates of survival rates are published, they are based on proxy measures derived from age-specific enrolment. In practice, therefore, they offer little advantage over OOS rates.

Unfortunately, it is not possible to straightforwardly answer the question of how much lower the number of primary non-completers would have been in a given scenario of OOS rates (such as continuation of the 2000–2010 trend throughout the 2010s), because the relationship between OOS rates and completion rates is non-linear and complex.

For one, students attending but failing the final grade will be non-completers but may not contribute at all to the OOS rate. Conversely, OOS rates may be high primarily because of late entry into the starting grade, in other words, because many children of the theoretical entry age are not yet enrolled. But once they do, there is no reason why they should not complete.[9] By contrast, the same OOS rate may be due to drop-out before the final grade, with a direct one-to-one increase in non-completion.

In principle, an attempt may be made to differentiate these patterns of non-enrolment. Indeed, in the past, the UIS published estimates for a typology of children who are OOS, distinguishing whether they: (i) will never enter school, (ii) have not entered yet, or (iii) have already dropped out. Because the critical distinction between (i) and (ii) cannot be observed directly, this requires strong assumptions and/or sophisticated statistical methodology, in addition to detailed data of OOS rates by single years of age. Unfortunately, the quality of available data critically undermines the robustness of the typology estimation, therefore these estimates have not been updated recently.

Arguably, the need has diminished since primary school-age children enrolled in pre-primary education are no longer considered to be OOS. This means that a major part of group (ii) counts as enrolled, potentially increasing the correspondence between the OOS rates thus defined and completion.

Still, empirically the correspondence remains quite weak and completion rates do not look anything like lagged enrolment rates in practice. Burundi provides a clear example of the phenomenon **(Figure 9)**. On the one hand, the primary completion rate increased much more slowly than enrolment. On the other, completion has continued increasing even a decade after enrolment stopped improving. Some lag is to be expected, of course, because a given individual's drop-out contributes to the OOS rate right away, but is registered as non-completion only once they reach an age three to five years above the theoretical graduation age. Still, with a primary cycle lasting six years, and part of the enrolment gain coming from reducing drop-out in the final grades, there is no sign yet of the completion rate plateauing. This is based on the latest raw data from the DHS 2016 survey, but true even in terms of the completion trend among those only three years above the graduation age, experiencing the least lag.

[9] While there is some evidence that being severely over-age for grade increases the risk of dropping out, this is less clear for those entering one or even two years late and in any case is a highly contingent effect.

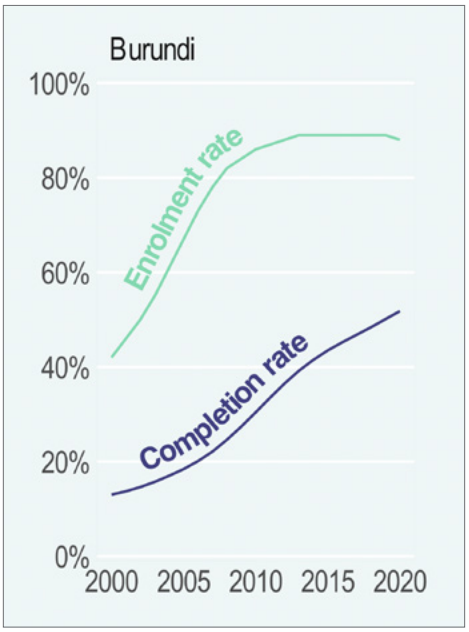

Figure 9: Primary school net enrolment rate and primary completion rate, Burundi.

While the pattern in Burundi is an archetype rather than representative, it does correspond to the trends — albeit less strong — observed among low-income countries and countries in Sub-Saharan Africa in the aggregate. For both groupings, completion remains lower than enrolment but has continued to improve without showing the same kind of slowing down as the latter.

Another angle concerns the number of people who did not complete primary school. While one of the official SDG indicators, namely number 4.4.3, is for educational attainment (i.e., school completion), it is for the open age group 25 or older. It can therefore not reasonably be juxtaposed with recent enrolment/OOS figures. A dataset of harmonized educational attainment data by five-year age groups has been produced by the Wittgenstein Centre for Demography and Global Human Capital in Vienna, Austria.[10] Of particular interest for present purposes is the distinction it encodes between individuals who have no schooling at all, those who have some, but incomplete, primary schooling, and those who completed primary (or higher) levels of schooling. **Figure 10** shows how the absolute number of 15 to 24-year-olds in each of these categories changed globally and in Africa[11] during the first and second decades since 2000.

The number of people aged 15 to 24 who never entered school at all declined everywhere during the 2000s, including in Africa. The number who had dropped out of primary school was still increasing, however. By the 2010s, this group was also shrinking, and all the growth in this age group occurred among those who had completed at least primary school.

[10] http://dataexplorer.wittgensteincentre.org/wcde-v2/

[11] The Wittgenstein Centre Human Capital Data are organised by continent, not SDG regions, so this really is Africa, not Sub-Saharan Africa.)

Figure 10: Change in the number of individuals aged 15–24 with a given level of primary school attainment.

In summary, trends in primary school completion and attainment paint a mixed picture. On the one hand, completion remains far lower even than lagged enrolment. Too many of the children who have been brought into school or kept in school longer do not complete regardless. On the other hand, completion has continued to improve even while enrolment increases have stalled. This may indicate a shift in the OOS population from children deprived of schooling altogether and/or drop-outs towards late entrants.

The equity implications of how OOS/enrolment rates translate into school completion are not clear-cut. In particular, maximizing completion at a given level of OOS rates may be regressive. For example, suppose a five-year primary cycle and an OOS rate of 20%. If the non-enrolment arises from drop-out, then if all children uniformly drop out after four years in perfect equality, completion is zero. Conversely, maximizing inequality so that 20% of children never enter school allows completion to reach 80%. However, if all children uniformly enter one year late but then stay in school without dropping out, both equality and completion are maximal at 100%.

This illustrates that as a matter of mathematical principle, there cannot even be an a priori rule of thumb concerning the equity dimension of a given combination of OOS and completion rates. There is no substitute for detailed empirical information, longitudinal, by single years of age, cross-classified by grade, extending beyond the school-age range for the level in question.

Still, there are consistency constraints even based on the available data that fall far short of this ideal. The UIS has commissioned the present author for a year-long exercise to combine the existing completion rates and OOS models in order to estimate them jointly. This joint model is expected to deliver results by 2024.

Key messages:

- A stalled decline in OOS rates does not rule out continued increases in completion rates.
- The inherent lag between enrolment and completion dynamics can no longer explain this divergence.
- This divergence may instead point to an increasing role of children being out of school due to late entry (which is compatible with eventual completion) rather than dropout.
- The absolute number of young adults who never entered school has been declining since 2000, including in Africa.
- The absolute number of young adults who have dropped out of primary school has been declining since 2000, including in Africa. All growth is occurring among those with at least primary education.


Magali Cazals/EAA

4. Effects of population data and dynamics

First, we must clarify what we mean by the effect of population data and population dynamics on OOS statistics. We can distinguish:

- Population data as a source of uncertainty, ambiguity, and error in its own right.
- The ability of education systems' performance and capacity to respond to population pressure.
- The well-understood accounting effects of shifting population weights on regional and global averages.
- Effects of shifting population weights that are so subtle or counter-intuitive that we may consider them as statistical artefacts.

Population data as a source of uncertainty, ambiguity, and error

While education planners tend to use population figures as point estimates, it is important to note that not only projections but also current population numbers for non-census years are actually model-based projections. These projections make assumptions about mortality, fertility, and migration that may be more accurate or less so. This induces a nontrivial amount of uncertainty into population numbers. A sense of this can be gleaned from later revisions to population figures for the same year. It may not be surprising that projections from one edition of the UN's World Population Prospects (WPP) may be significantly revised once compared to observed data in a subsequent edition. Indeed, such comparisons are performed and published routinely, showing for example, that estimates for mid-2019 populations in the WPP 2019 were revised up or down by as much as 20% in some countries in relative terms and by as much as 5 million in absolute terms in others, even excluding China and India.[12] However, revisions also affect years already in the past at both times of estimation. For instance, the number of 5 to 9-year-olds in Nigeria in 2015 was revised by over 2% or over 600,000 (27 million vs 26.4 million) between the WPP 2019 and WPP 2022.

Recall that administrative OOS numbers are calculated as a residual between enrolments and the assumed size of the school-age population. This means that the effect of population errors is leveraged: if 90,000 children are enrolled, and the estimate of the school-age population changes by 5,000 from 100,000 to 105,000, the OOS rate increases by 43% (!) from 10% to 14.3%.

The UN's Population Division that publishes the WPP figures does not take the figures reported by countries' national statistical offices at face value but applies additional harmonisation, consistency checks, and adjustments. The resulting figures may differ significantly from those used by countries themselves and in consequence, so may OOS figures based on them. The discrepancies are sufficiently large that some countries, notably Brazil, object to the use of WPP estimates for their country by international agencies, and to cause considerable tension between the UN, the Organisation for Economic Co-operation and Development (OECD) and its members, and Eurostat over which set of estimates should be preferred.

[12] UNDESA Population Division. 2022. Release note about major differences in total population estimates for mid-2021 between 2019 and 2022 revisions. https://population.un.org/wpp/Publications/Files/WPP2022_Release-Note-rev1.pdf

Additional error is introduced by the fact that population projections are often performed on five-year age groups that are then interpolated[13] to single years of age. Since many education indicators, including OOS statistics, rely on specific age cut-offs, they can be affected when the interpolation (which aims to minimise the average error) fits the true data poorly at boundary ages.

Age misreporting is an issue affecting all censuses (and therefore population estimates), household survey data, and enrolment registers. Many countries still lack any, or at least robust, civil registration systems and birth registration is so incomplete globally that it received its own SDG target (SDG 17 Target 19.2). Partly as a result of this and partly due to low numeracy, many children and adults do not know their exact age. This can show up in the data as a statistically implausible preponderance of individuals with stated ages that are multiples of five, for instance, or other numbers especially meaningful according to the local culture. Because OOS figures rely on identifying whether an individual is of school age given their age, they can be distorted by this incorrect age information.

A technical report for the UIS reviewed and quantified the magnitude of some of these effects in practice using the example of Brazil.[14]

Moreover, many sources of OOS data only record the 'age at last birthday' (in other words, age in whole years), even when the exact birth date is known. At the micro-level, the school entry age will often be defined with reference to a cut-off date other than the date of enrolment. For instance, entry may be expected of children aged 6 by 1. July, with school starting 1. September. This means that children celebrating their 6th birthday over the summer and whose age is only recorded in whole years will appear to be of school-age in data collected at the start of school, even though they are not. Accordingly, they may incorrectly be classified as being out of school. These shifts are exacerbated in surveys whose data collection occurred at some other point during the school year or even straddles more than one school year. The effect on OOS rates is potentially large enough to seriously distort trends over time based on surveys performed at different points in the academic cycle,[15] yet this distortion is still not recognized correctly even in current guidance on OOS statistics such as the new OOSCI Operational Manual, which continues to promote a demonstrably unsatisfactory method for 'correcting' for the age effect (p. 50).

Finally, the reference date for annual population figures may not align well with the academic calendar. If enrolments on 1. September are compared to the school-age population on 1. January, or enrolments on 1. March with population on 1. July, the two sources are out of sync, even if both were perfectly accurate in their own right. In a population with rapid cohort-on-cohort growth of 3%, say, a shift by half a year already creates a measurable impact.

This effect may be exacerbated by 'home-spun' OOS calculations that do not take into account that UIS reports education statistics such as enrolments with reference to the calendar year in which the academic year in question ends. In other words, if I take an enrolment figure nominally referring to 'the year 2010', the register count may have been conducted on 1. September 2009, and mistakenly compared to the school-age population of 1. July 2010, some 10 months later.

[13] Using a demographic technique called Sprague multipliers: see https://unesdoc.unesco.org/ark:/48223/pf0000379198

[14] UNESCO Institute for Statistics. 2017. The effect of varying population estimates on the calculation of enrolment rates and out of school rates. Information Paper No. 36. https://doi.org/10.15220/978-92-9189-208-2-en

[15] Barakat, B. 2016. 'Sorry I Forgot Your Birthday!': Adjusting Apparent School Participation for Survey Timing When Age Is Measured in Whole Years. International Journal of Educational Development 49: 300–313. doi:10.1016/j.ijedudev.2016.03.011.

Even if correctly aligned in theory, the fact that enrolment and population data come from different sources means there is room for mismatch. This may go unnoticed if the population figures used in the OOS calculation overestimate the true school-age population, in which case OOS numbers and rates are inflated. But it becomes impossible to ignore when the de facto school-age population present is underestimated in a setting with close to universal enrolment. It is very common for the enrolment (of children of the right age) to exceed the assumed school-age population, so that the number of OOS children, calculated as the residual, is nominally negative! This is already problematic in itself, but a bias is created when this problem is 'solved' by censoring these negative OOS numbers and rates at 0. We know that the true values are positive by definition, so replacing them with a zero entry creates a downward bias on average.

The 'causal' effect of population growth

The idea that rapid population growth presents a decisive challenge to achieving universal schooling and bringing down OOS numbers comes up regularly in international educational development discourse. However, the confidence with which this neo-Malthusian view is presented as self-evident far exceeds the scarcity of rigorous evidence that this is actually the case.

There is reason to be sceptical of this simplistic view of the effect of population growth on OOS counts and rates. For one, negative growth (i.e., shrinkage) in the size of successive age cohorts, has its own potentially negative effects on enrolment (cf. the research literature on school closures). Moreover, it is easy to exaggerate the scale of population growth relative to other policy variables. Even extremely rapid population growth is associated with at most 3% annual growth in the size of single-year age cohorts, such as the number of children reaching the official school-entry age. This implies a doubling time of around 23 years. In other words, for the pupil-teacher-ratio to increase from 40 to 80 because of population growth would take almost a quarter century even in the presence of unforgivable policy complacency of a zero increase in the number of teachers (and an analogous argument holds for class size and physical classrooms). In this sense, population growth may throw systemic failures in the education sector into stark relief rather than representing the underlying cause of dysfunction (similar to what has been argued with respect to urban development,[16] for instance).

Indeed, empirically the correlation between population growth and the OOS rate, while positive, is fairly weak **(Figure 11)**. Certainly, there are sufficient counterexamples that rapidly growing countries are not doomed to struggle to keep up with enrolling the growing number of children. Rwanda and Palestine, for instance, both have growth rates >2% per annum and OOS rates around 5%, lower than many countries with little to no population pressure. In any case, no estimate exists of a direct causal effect of population growth in a given country on OOS counts or rates that could easily be used to estimate its contribution to OOS trends over time.

[16] Boateng, F. G. 2021. A critique of overpopulation as a cause of pathologies in African cities: Evidence from building collapse in Ghana. World Development, 137:105161.

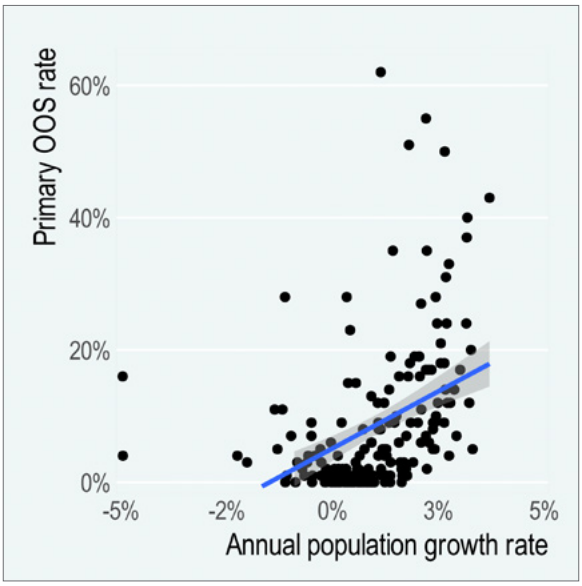

Figure 11: faster population growth is weakly associated with higher OOS rates

Effects of shifting population dynamics

Regardless of whether rapid population growth makes it more difficult to raise enrolment rates, population dynamics affect regional and global aggregate OOS counts and average rates purely in accounting terms.

First, when the number of children grows, then all else being equal, the number of children out of school grows also. Given changes both in school-age populations and OOS rates, the question becomes how to disentangle — or in technical terms, decompose — the impact of those two kinds of changes. The literature also tells us that such a decomposition is not mathematically unique, and different reasonable approaches may yield different results.[17]

If we adopt the perspective that the contribution of population growth is captured by holding the 2000 OOS rates constant, then we conclude that population growth raised the number of number of children out of primary school by almost 39 million.

If instead we compare the current number of primary OOS children to what it would have been if the population had stayed constant, we conclude that the fact it did not stay constant added 17 million children out of primary school.

In technical terms, these two figures correspond to attributing none or all of the interaction component between population and rates to what we consider to be the population effect.

Either way, the mechanical contribution of population growth to OOS numbers has been substantial.

[17] The standard approach in econometrics is to perform what is called a Oaxaca-Blinder decomposition. For a visual and not too technical explanation, see https://www.worldbank.org/content/dam/Worldbank/document/HDN/Health/HealthEquityCh12.pdf

What is also clear is that for a given country, even if the OOS rate declines, the OOS count may continue to increase — specifically if the OOS rate declines more slowly than the school-age population is growing. For example, if in the year 2010, 50% out of 1 million school-age children were OOS, and this rate improved to 40% by 2020 but the school-age population grew to 1.5 million, the OOS count will have increased from 500,000 in 2010 to 600,000 in 2020.

Such considerations may lead to the notion that focusing on OOS rates successfully abstracts away from absolute population numbers. However, this is a fallacy, because OOS rates do not remain immune from population dynamics, for both straightforward and more subtle or even counter-intuitive reasons.

The population effects mentioned so far cannot be considered to be 'distortions' in any sense, but simply reflect the nature of counts and rates, and should form a natural part of our understanding of how OOS numbers and rates relate to each other. However, there are a number of additional subtleties that for practical purposes we might want to treat as unwanted statistical artefacts. This distinction is somewhat artificial, as their mathematical structure is essentially identical to that of the well-established effects just discussed.

To begin with, what is straightforward enough is that when countries grow at different speeds, the weight of the faster-growing ones increases in the calculation of regional or global averages. While the relationship between population growth and OOS rate is not so clear cut as to serve as a policy excuse for fast-growing countries, it is indeed strong enough for the shifting population weights to exert upward pressure on average OOS rates. The key observation is that there is an upward bias in the trend of aggregated OOS rates, which will underestimate how rapidly OOS rates are improving at the country level.

As a matter of fact, in principle, this bias can reverse the direction of our conclusions, in the sense that both the aggregate OOS count and the average OOS rate may continue increasing even if all country-level OOS rates are in fact improving. If this seems counter-intuitive, consider the straightforward equivalent fact that even if grocery stores and restaurants both raise their prices, we can reduce our spending on food by eating out less.

What is perhaps even less appreciated is that, in principle, the average OOS rate may increase even if, in every country, improvements in enrolment rates outpace population growth, and absolute OOS counts are declining.

Consider the following simple example. Country A has a school-age population of 10 million in 2000 and 4 million in 2020, and an OOS rate that improves from 2% to 1% during this time. Since population growth is negative, the OOS rate improvement by definition outpaces population growth, and the OOS count fell. Country B has a school-age population of 5 million in 2000 and 8 million in 2020. Its OOS rate improves from 50% to 30%. Once again, the OOS rate improvement outpaced population growth and the OOS count fell.

On average, however, we get:

- In 2010, an OOS count of **2.7M(=0.2+2.5)** for an OOS rate of **18%(=2.7/15)**.
- In 2020, an OOS count of **2.44M(=0.04+2.4)** for an OOS rate of **20%(=2.44/12)**.

This is an extreme example that merely serves to demonstrate the existence of this mathematical effect. In realistic scenarios, including actual real-world dynamics, this may not result in an average OOS rate that actually moves in the opposite direction, but is merely declining more slowly than if all countries had equal population growth.

Either way, the key observation is that as long as countries with high OOS rates are also countries with relatively high population growth, trends in the average OOS rate suffer an inherent pessimistic bias. This means that stalled declines in global or regional OOS rates do not necessarily mean that insufficient progress is being made at the country level.

While these might currently be artificial scenarios at the global level, note that the same principle applies at the subnational level. This is clearly relevant when assessing large federal states such as Brazil, India, or Nigeria: in theory, the average national OOS rate can increase even if enrolment gains outpace population growth, and absolute OOS counts are declining, in each state or province.

Within a given country, a similar shift operates across age groups. Note that in a growing population, there are more younger children, than older. This means that in terms of the overall OOS rate, primary grades weigh more heavily in calculating the average. Since OOS rates are typically lower at the primary than at the secondary level, this pulls down the overall OOS rate.

When growth slows down, the age profile becomes flatter, the relative weight of primary school-age children decreases and the weight of secondary school-age children with their higher rates of non-enrolment increases. As a result, even if the OOS rates at each level remain constant, decreasing population growth exerts a mechanical upward pressure on the overall OOS rate.

However, reality is even more complicated, because there is a cohort size gradient even within school levels. In a growing population, at any given level, there will be more children of the statutory age for the early grades than for the higher grades. At the secondary level, the argument already mentioned can be expected to apply: higher grades have higher OOS rates, and slowing population growth mechanically pushes the average OOS rate up.

But at the primary level this may not be true. Late entry means that the age-specific OOS rate at the entry age may well be higher than the OOS rate for the age group matching grade 2 or 3. Generally speaking, the age profile of OOS rates can be non-linear. In this case, the effect of slowing population growth, or even a switch from a pattern of growth to one of shrinking cohorts, can bias OOS rates in either direction. It is perfectly possible for the primary OOS rate to be mechanically depressed by slowing population growth, while the secondary and overall OOS rates are instead pushed up. The devil is in the details.

Level durations

All of this is further complicated by the question of how age groups map to education levels. While the ISCED mapping goes some way towards ensuring that 12 to 14-year-olds will typically be counted as being of 'lower secondary school-age' even if in national terms they are attending the upper grades of an 8-year 'basic education' programme, there remains enough variation in the duration of different levels even according to ISCED to create statistical artefacts. Indeed, it is possible to create an example of two hypothetical populations that have identical age-specific OOS rates, and these OOS rates remain constant over time, as does their education structure, and yet their pooled overall OOS rate increases while the primary, lower, and upper-secondary OOS rates all decrease.

Key messages:

- Uncertainty in population estimates and individual age data and mismatch between data sources for population and enrolments create considerable potential for error, illustrated by prima facie negative OOS rates.
- There is little evidence that high population growth per se undermines progress towards universal primary enrolment. Even rapid population growth is an order of magnitude smaller than many policy levers.
- Population growth has added between 17 and 39 million children out of primary school to the global number.
- There is an inherent upward bias in the trend of aggregated OOS rates, which underestimates how rapidly OOS rates are improving at the country level.
- Accordingly, stalled declines in global or regional OOS rates do not necessarily mean that insufficient progress is being made at the country level. Similarly, stalled decline in national OOS rates does not rule out good progress being made in every province.
- At the country level, statistical effects of population growth can non-linearly either increase or decrease the overall OOS rate even when age-specific OOS rates remain constant.

Bangladesh, EAA/Dhaka Ahsania Mission

5. Who is OOS and why? Pockets of high OOS rates related to specific circumstances

We know that various groups of children face educational inequalities and are more likely to be out of primary school. It is easy to focus attention on these inequalities in light of a consensus that these gaps should be closed as a matter of equity. This moral imperative should not, however, be conflated with an expectation that closing these gaps will have a large impact on the overall number of OOS children. Whether most street children, say, are out of school or whether most out of school children (OOSC) are in the street are very different questions.

Here, we illustrate the potential of simple calculations to put bounds on the potential contribution of reducing specific group inequalities to stagnant global OOS rates using the example of three groups in greater detail: the economically disadvantaged, children with disabilities, and children experiencing conflict and/or forcible displacement. Various other groups could be considered (although some, such as child labourers and early marriage and pregnancy are less salient at the primary school level).

5.1 Gender gaps in enrolment

Historically, girls have been considered a marginalized group in terms of access to education, and for good reason. As the recent example of the second Taliban regime in Afghanistan reminds us, educational exclusion as a matter of deliberate policy almost exclusively targets girls rather than boys, for instance.[18] Similarly for policies excluding girls who become pregnant or teenage mothers. Moreover, it bears continuing emphasis that even parity in plain numeric access to schooling does not mean that there is no gender discrimination in terms of classroom experiences, curriculum, or any other number of aspects of education. In turn, this does not mean that boys do not also suffer under the demands of socially proscribed or even institutionalized gender roles.

Indeed, it has been noted that there are now more boys out of school than girls, and have been for some time. This is true at all levels of schooling, and the gap increases throughout schooling **(Figure 12)**, for a variety of reasons.[19]

Colombia, EAA/Fundación Pies Descalzos

[18] Indeed, note that the statistics used for this study do not yet reflect the increase in the number of OOS girls known to have taken place in Afghanistan.

[19] UNESCO. 2022. Leave no child behind: Global report on boys' disengagement from education.

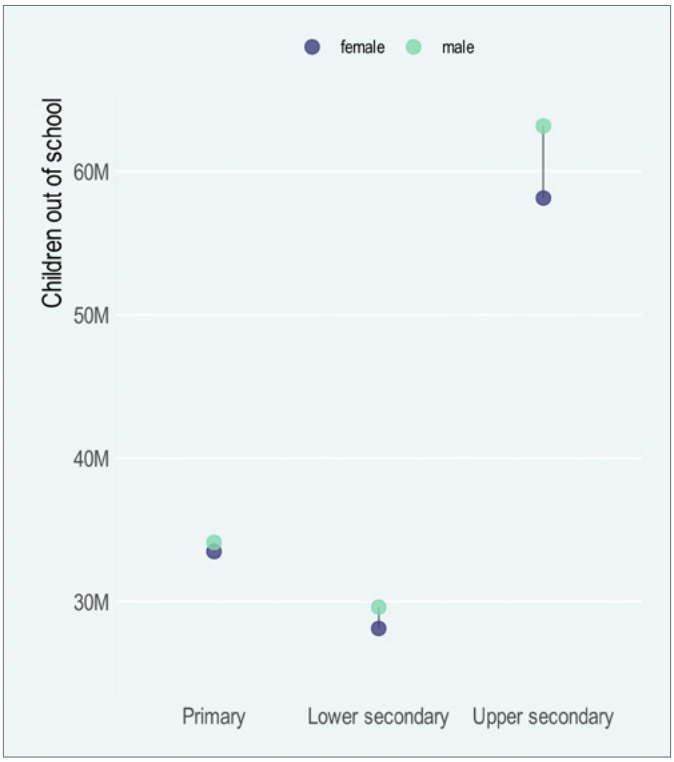

Figure 12: Gender gap in global OOS numbers by level (N.B. y-axis does not start at zero)

However, this observation only tells half the story. At the global level, rates of non-enrolment have converged over the past two decades to now being essentially equal for girls and boys **(Figure 13)**. These are population-weighted averages and apply to the global male and female populations of school age. While the closing of the gender gap in OOS rates is a welcome development, it is important to note that there has not been an 'overshoot' where boys are now more disadvantaged.

This closing of the gender gap may partly explain the slowing down of further progress in lowering OOS numbers and rates, however. Without minimizing the social and cultural challenges, and the fact that even identical physical circumstances, such as distance to school, can have a gendered impact, it is still the case that gender bias in OOS rates represented enrolment gains that are demonstrably feasible to achieve. If the boys were going to school, this proves that at least there must have been a school to go to, and there is no physical constraint on letting girls go to school on the same terms as boys. In some sense, the enrolment disadvantage of girls therefore represented slack in the system that has now largely been taken up.

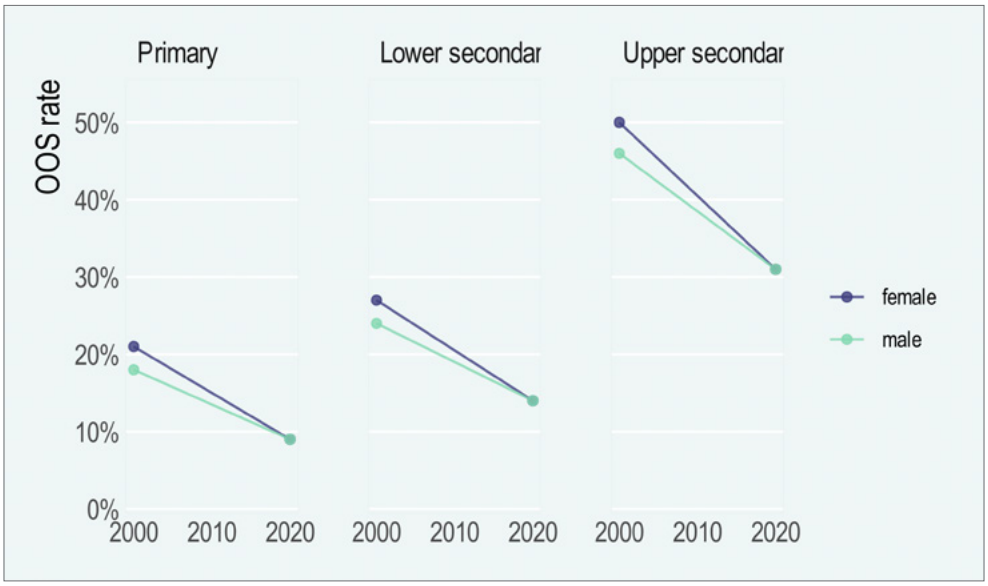

Figure 13: Convergence in global OOS rates by gender

Equal OOS rates on average of course hide variation between countries. This variation leaves opportunities for further enrolment gains from closing gender gaps. If in each country and at each level, boys and girls both were enrolled at the same rate as the higher of the two, the global number of children out of primary school would fall by 5.0 million, or by 19.6 million across all levels.

Girls did at most levels overtake boys in terms of enrolment rates in China and India **(Figure 14)**. This by itself does not explain the apparent contradiction that global OOS rates no longer show a gender gap, but boys outnumber girls in terms of OOS numbers, given that those are population-weighted averages. However, it does show that the greater number of OOS boys may, in fact, partly be due to bias against girls. Both China and India are well-known for having had strongly skewed sex ratios for decades, due to sex-selective abortion and infanticide. There are 5.5 million fewer upper-secondary school-age girls than boys in India and 3.5 million in China. At an upper-secondary school OOS rate among Indian boys of 41%, that results in 2.2 million additional boys out of upper-secondary school compared to girls, almost half of the global gap in absolute OOS numbers at that level, and India is far from alone in its degree of son preference. However, far from representing a decline in gender bias against girls, the OOS boys exceed the number of their female peers not because the 'matching' girls are in school, but because they are not even alive.

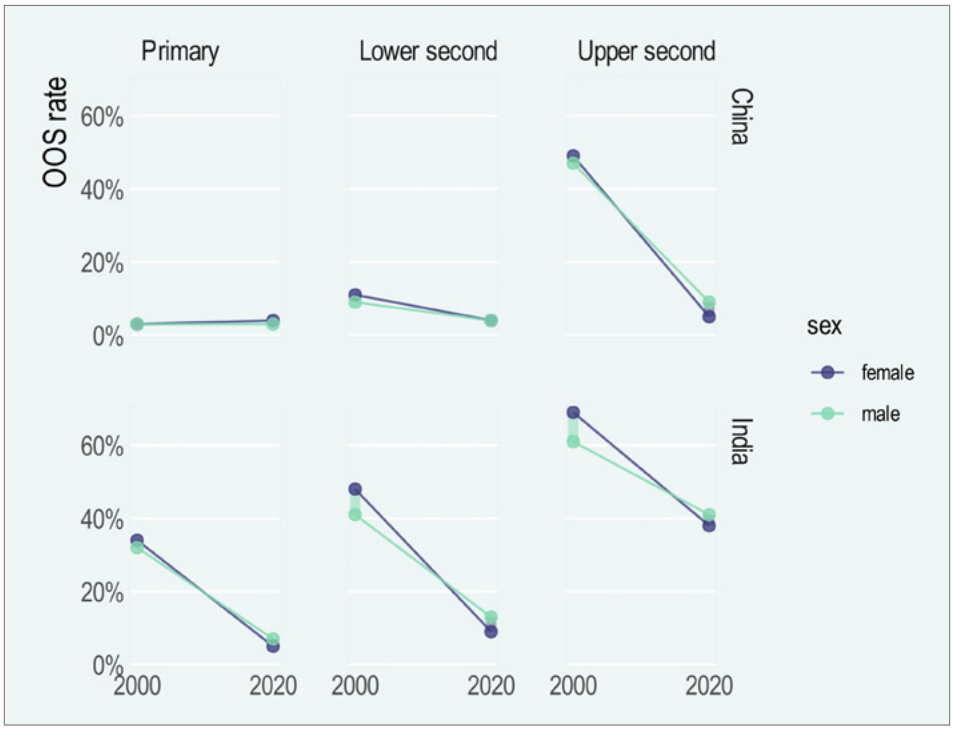

Figure 14: Gender gap reversal in China and India

5.2 Children living in extreme poverty

Most children out of primary school are among the poorest by global standards, and many live in extreme absolute poverty according to international benchmarks. However, it is decidedly not the case that at the level of individual countries, being OOS is limited to those in relative poverty, even applying a broad definition.

The following uses information from the World Inequality Database on Education (WIDE) on OOS rates by wealth quintiles for 45 countries with surveys since 2010, representing some 29 million, or about half, of all children out of primary school. We can estimate the potential gain if the children in the bottom 20% of households had the same primary school attendance as their peers from the next quintile. This is not entirely straightforward because their share among all children typically differs from 20%, with poorer households in low and lower middle-income countries generally housing a disproportionately larger number of children.[20] However, using the empirical shares observed in the survey sample in a given country may suffer a fair amount of noise, and moreover, interacts with the stratified survey design, so that the correct application of weights for estimating these shares of children is non-trivial.

Accordingly, the following estimates apply two different simple assumed patterns to all countries.

The first estimate ignores the deviation and calculates the overall average as if each quintile of households is home to 20% of primary school-age children. This is likely to underestimate the effect of raising the attendance among the bottom 20% of households, as in reality, this would affect a larger share of children than the 20% assumed here.

[20] see the 2020 Global Education Monitoring Report, Figure 14.3.

To complement the lower bound provided by the first estimate, the second assumes that the poorest quintile of households contains 30% of children, then the second-poorest 25%, the middle quintile 20%, the second-richest 15%, and the richest quintile 10%. While the countries with the strongest concentration of children in poor households exceed even this gradient, it is more skewed than the vast majority of countries. For reference, in India the poorest 20% of households are home to 25% of all children, the richest 20% of households to 15% of all children. Accordingly, this second scenario is expected to overestimate the effect of raising the attendance of children in the poorest household quintile on the overall OOS rate.

With these assumptions, lowering the primary OOS rate among the poorest 20% of households to that of the next quintile would reduce the 29 million OOS primary children in the countries in the analysis by between 4.1 and 5 million. If this seems like a surprisingly small gain, note that this estimate gives the benefit of the doubt and, given the OOS rate of the bottom quintile and second-to-bottom quintile, applies the lower of the two to the bottom. Strictly applying the OOS rate of the second quintile to both leads to an even smaller improvement, because in some countries, school attendance in the second wealth quintile is worse than in the first (i.e., poorest) quintile. While investigating the source of this pattern is beyond the scope of the current exercise, it coheres with research showing that in some settings, poor urban slum dwellers may have worse education participation than the rural population.[21] It would not be surprising if the former were, nevertheless, technically 'less poor' in terms of the assets included in the construction of the wealth index than the latter.

The extent to which OOS children are in countries where large swaths of the population are poor — rather than concentrated among the poorest strata within countries — is highlighted further if we cast an even wider net and include the economic bottom 40% of households. Raising their primary school attendance to that of the middle quintile would still only achieve a reduction of between 7.8 and 9.2 million. This is still a reduction of less than a third among the 29 million primary OOS children in the analysis.

5.3 Children with disabilities

The education sector has made progress over the last two decades adopting the social model of disability. In contrast to the previously common medical model, where disability is treated as an essentially permanent condition of the individual, in the social model, individuals experience a disability in a given environment that is not well-adapted to their needs. At the same time, the very notion of a disability is replaced by that of functional difficulties, and the range of relevant functionings is broad and includes social functionings. Accordingly, the most current instruments for identifying children with functional difficulties in the questionnaires for UNICEF's MICS surveys[22] include items on anxiety, for instance, which can represent a functional difficulty when severe and persistent and interfering with their lives.

This paradigm shift has implications for OOS statistics. Older, often-quoted statistics on high OOS rates among children with disabilities[23] must be revised because both the situation and the understanding of disability has changed compared to the data available at the time. In particular, such estimates only referred to the subset of low-prevalence physical, sensory, and intellectual disabilities. By comparison, the difficulties experienced by children with high-prevalence conditions such as anxiety are much less likely to result in an outright lack of school attendance.

[21] UNICEF Bangladesh. 2010. Understanding Urban Inequalities in Bangladesh: a Prerequisite for Achieving Vision 2021 – A Study Based on the Results of the 2009 Multiple Indicator Cluster Survey. Dhaka, UNICEF Bangladesh.

[22] Cappa, C., Mont, D., Loeb, M., Misunas, C., Madans, J., Comic, T., & de Castro, F. (2018). The development and testing of a module on child functioning for identifying children with disabilities on surveys. III: Field testing. Disability and Health Journal, 11(4), 510-518. doi:https://doi.org/10.1016/j.dhjo.2018.06.004

[23] e.g., WHO & World Bank. (2011). World Report on Disability, or dated estimates by the 2006 GEM Report that a third of all out of school children have disabilities or that 90% of children with disabilities in sub-Saharan Africa never went to school.

The Global Education Monitoring Report devoted its 2020 volume to the theme of inclusion and performed analyses of the, then, first batch of 14 countries with MICS data based on the Module on Child Functioning.

These data showed that, overall, around 12% of 5 to 17-year-olds had difficulty in at least one domain. However, this is largely driven by difficulties associated with a broad definition of disability. Difficulties with seeing, hearing, communicating, or with self-care all had a median prevalence of less than 1%, and walking of 1.3%. By contrast, difficulties 'accepting change' and depression both had a median prevalence above 2% and anxiety of 4.4%.

As a result, the over-representation of children, adolescents and youth with disabilities in the OOS population is modest, accounting for 12% of those in school and 15% of those OOS. Indeed, those with any disability only had a 1 percentage point higher primary OOS rate, rising to a 4-point gap for those specifically with a low-prevalence sensory, physical or intellectual disability.

The latest data from UNICEF across 44 countries confirm this general picture. The median gap in primary OOS rates between children with and without a disability is 2.5 percentage points. Only in one country in five does the gap exceed 5 points, and it exceeds 10 points only in two countries.[24]

If these gaps seem low, note that it is not uncommon for schooling rates to be higher among those with any functional difficulty. While this might seem counterintuitive, it becomes less surprising if we remind ourselves how commonly learners experience excessive academic pressure, bullying and physical and sexual violence in schools around the world and that attending school may very plausibly induce anxiety and depression in some children.[25]

In some countries, the educational disability disadvantage is larger than average, however. This is true both in the data on which the above averages are based, and they may also be larger in some countries with large OOS populations.

[24] https://data.unicef.org/topic/child-disability/overview/

[25] Indeed, the latest evidence suggests that, among high school students in the United States, teen suicides 'plummeted' during pandemic school closures, see Hansen, B., Sabia, J.J., & Schaller, J. (2022). In-Person Schooling and Youth Suicide: Evidence from School Calendars and Pandemic School Closures.

Still, even much larger gaps in OOS rates between children with and without disabilities have only a very limited effect on the overall figure. To give a sense of the order of magnitude of the effect, consider a simple artificial example. Suppose a baseline primary OOS rate of 20% among children without a disability. If 15% of children have any disability and an OOS rate that is elevated 5 percentage points, to 25%, that would give an overall average OOS rate of 21% (rounding up), or an increase of 1 point over the baseline. We get the same result for 3% of children having a low-prevalence sensory, physical, or intellectual disability and an OOS rate that is elevated by 25 points.

Again, this observation does not in any way diminish the ethical imperative to close this gap. It does mean, however, that while estimates of the percentage of children with disabilities have increased dramatically as the definition has been broadened to recognize more kinds of functional difficulties, this increase cannot explain the stagnation in overall OOS rates.

5.4 Children experiencing conflict and/or forcible displacement

As is well-documented, education suffers in crises, both because state capacity may be diminished, diluted, or distracted, because populations are displaced away from their schools, or even because schools are deliberately targeted and attacked.[26]

Estimating the number of children OOS due to crises is not straightforward, however. Countries may fail to establish functioning education systems for the same reasons, rather than because, they descend into crisis in response to natural disasters or political violence. Indeed, before even reaching questions of causality, it is challenging to establish the number of children OOS exposed to crisis.

The limitations of the crude approach to classifying entire countries as crisis and/or conflict-affected together with all children inside are easy to see. Some crises or disasters are limited in their geographical scope, and there is little reason to attribute the non-attendance of a child in Chennai to flooding in Punjab 2,000 km away, say.

This motivates a spatially more granular perspective. While crisis events are often geo-coded to specific locations, original data on school-age and OOS populations are often not widely available and their spatial distribution must be imputed using techniques of so-called small area estimation, even as sample cluster locations for household surveys such as DHS or MICS are relatively sparse.[27] One widely used project performing such spatial estimation is WorldPop (www.worldpop.org). Even then, however, it remains unclear how spatial relationships translate into 'affectedness'. For instance, up to what distance may an attack on a school have an impact? Assigning a fixed radius to such effects can only be arbitrary.[28]

[26] Global Coalition to Protect Education from Attack (GCPEA). 2022. Education under Attack 2022.

[27] Incidentally, exercises such as by Graetz et al. (2020) may make the causal question even harder to answer. Specifically, when imputations of granular OOS rates are actually the predicted values from regression models using estimates from remote sensing data on nighttime illumination, say, as a proxy for poverty, and other correlates of education outcomes, then by construction these estimated OOS rates can no longer be used to understand the spatial impact of crises, because such impacts would be reflected specifically in the residual deviation from the predicted baseline OOS rate, but this residual has specifically been dropped. (Graetz, N., Woyczynski, L., & Local Burden of Disease Educational Attainment Collaborators. 2020. Mapping disparities in education across low- and middle-income countries. Nature 577, 235–238. https://doi.org/10.1038/s41586-019-1872-1)

[28] See, for example, an article from the Conversation in February 2023, which presents key findings from a recent study on the spatial impact of conflict in Somalia, including that conflict can affect the food security, health, and education outcomes of families hundreds of kilometres away from a conflict's epicentre. https://theconversation.com/al-shabaab-attacks-in-somalia-affect-communities-as-far-as-900km-away-aid-agencies-need-to-take-note-197933

The INFORM Index for crisis severity[29] incorporates an estimate of the affected population using case-specific considerations. Based on these estimates, Education Cannot Wait (ECW) released a new set of global estimates on June 7 of this year for the number of Crisis-Affected Children and Adolescents in Need of Education Support.[30] On the OOS side, they use the same set of new UIS/GEMR estimates analysed in the present report. Reflecting the sub-national perspective, fewer than 2% of school-age children are considered to be crisis-affected in India and around 10% in Nigeria, but 69% in Ethiopia, and 94% in Ukraine.

One thing these estimates show is that only a fraction of crisis-affected OOS children are forcibly displaced, the group for which the link between crisis exposure and non-attendance is perhaps easiest to argue and whose OOS rates are most clearly elevated relative to the general population. Across all levels of schooling, ECW estimates 72 million crisis-affected children to be OOS, but only 1-in-5 of these are forcibly displaced. At the primary level specifically, the estimates are 17.7 million non-forcibly displaced OOS children and 4.3 million OOS refugees, Internally Displaced Persons (IDPs), and asylum seekers or others in need of international protection. This latter group therefore accounts for some 6.5% of all primary OOS children globally.

Moreover, to understand the potential contribution of ameliorating crisis effects on education, the OOS rates among crisis-affected children must be interpreted in relation to high baseline OOS rates. For instance, while the primary OOS rate among the crisis-affected populations in Sub-Saharan Africa (which accounts for 111 million out of the 206 million crisis-affected children of primary and secondary school age) is estimated at 26%, this compares to a general average that is already as high as 20%. Overall, 22 million out of 104 million crisis-affected primary school-age children are OOS.

Because these estimates use a new methodology, longer-term trends are not available to assess the contribution of crises and forcible displacement to the slow-down in the progress of reducing global primary OOS rates. Even for the quoted changes since last year, such as the increase in the number of OOS children in emergencies by 1.45 million, it remains unclear to what extent existing OOS children have newly entered this category because they became crisis-affected in the meantime or because they became OOS.

However, even if the global number of forcibly displaced doubled during the 2010s, this increase would account for only around 3–4% of today's out of primary school children.

While forcibly displaced children certainly do urgently require the attention and support of the international education community on their own terms for reasons of equity and humanitarianism, they do not explain the stagnant progress during the past decade. Noting that the SDG 4 goal of reducing the number of primary OOS children to zero over 15 years implied an annual reduction of 6 to 7 percentage points, the growth in forcible displacement would have been equivalent to a delay of merely half a year in reaching the goal — if the trajectory had otherwise been on track.

OOS children in emergencies are highly concentrated geographically, with half being found in Ethiopia, Pakistan, Afghanistan, Sudan, D. R. Congo, Myanmar, Mali, and Nigeria. Notably, these are many of the same countries as those with the largest general OOS populations, highlighting that the challenge is largely one of countries, rather than individuals, being in crisis.

[29] Poljansek, K., Disperati, P., Vernaccini, L., Nika, A., Marzi, S. and Essenfelder, A.H. 2020. INFORM Severity Index, EUR 30400 EN, Publications Office of the European Union.

[30] Valenza, M. & Stoff, C. 2023. Crisis-Affected Children and Adolescents in Need of Education Support: New Global Estimates and Thematic Deep Dives. Education Cannot Wait (ECW).

Key messages:

- Enrolment rates have converged on average between boys and girls.
- Equalizing primary OOS rates between boys and girls in all countries would reduce the global number of children out of primary school by around 5 million, or less than 10%.
- In absolute numbers, more boys than girls are now out of school, especially at higher levels of schooling.
- Ironically, this partly reflects misogynistic attitudes manifesting in skewed sex ratios. In some key countries, there are significantly more school-age boys than girls who could be out of school.
- Improving OOS rates of the poorest quintile in each country to the second poorest would reduce the number of children out of primary school by around 15%. Even raising enrolment among the bottom two quintiles (= the poorest 40%) to the level of average households would reduce the number of children out of primary school by less than a third.
- Children with low-prevalence disabilities suffer significant educational disadvantages, but there are too few of them to drive global trends.
- High-prevalence disabilities affect a significant number of children, but fortunately their disadvantage in school enrolment is often modest. Using up-to-date definitions of disability and the latest survey instruments, the median gap in primary OOS rates between children with any disability and those with none is 2.5 percentage points.
- Using sub-national data, forcibly displaced children affected by crisis account for only 6.5% of all children out of primary school.
- Non-forcibly displaced children affected by crisis are often in countries with low baseline enrolment even among children not directly affected by crisis.

Andrew McConnell/EAA

6. OOS as systems-level failure/dysfunction

The specific groups or sub-populations of children mentioned above experience a greater than average risk of being OOS. No one group or characteristic accounts for the lion's share of OOS children or provides a convincing explanation for the slow-down in global progress towards reducing OOS numbers. Still, the contributions of these and other specific factors do add up, suggesting that meaningful progress could be achieved by reducing their disadvantage.

However, the disadvantage of a given group (such as children with disabilities, or the forcibly displaced) in terms of their likelihood of being OOS must be distinguished from the share of OOS children belonging to said group. The above analyses have shown that even several of the most disadvantaged groups do not account for a decisive share of the total global number of OOS children. This motivates a change of perspective, from a deficit framing of specific groups of children to failures of supply, whether an absence of (accessible) primary schools, or limited opportunities to safe, attractive, and worthwhile education participation. Indeed, it is easy to overstate the extent to which the supply bottleneck of primary school provision has been solved. Supply-side failures are sometimes hidden by crude data. For example, in Niger, even where a primary school exists, it may be incomplete, with only 60 per cent of primary schools offering all six grades the cycle comprises.[31] In its review of 19 OOS studies, the OOS Children Initiatives notes that the three most common barriers mentioned are 'cost and financing', 'absence of tailored services', and 'access'.

6.1 Most OOSC are in countries where many children are OOS

The logic behind identifying specific sub-groups who disproportionately make up the OOS population is that the reasons for their non-attendance lie in their individual characteristics, or perhaps in their interaction with the schooling environment. The implicit assumption is that what education systems with high levels of non-attendance are failing at is meeting the specific needs of specific groups. However, as the inclusion-themed 2020 Global Education Monitoring Report noted, it is not possible to achieve inclusion one group at a time. To begin with, 'not all children facing inclusion barriers belong to an identifiable or recognized group, while others belong to several'. Inclusive education systems need to be inherently inclusive and set up to meet the needs of any learner, thereby benefitting all learners. The group-based perspective distracts from the possibility that education systems may be dysfunctional or failing in general. One indication of such generalized failure is if being out of school is not limited to a small minority, the proverbial 'furthest behind', but is a common experience.

Figure 15 shows how the share of primary OOS children living in countries with a primary OOS rate of a given value or more. Naturally, at the top left, all OOS children are in countries where the primary OOS rate is at least 0%. No country has a primary OOS rate exceeding 60%, so by that threshold value, 0% of all primary OOS children are included (bottom right).

[31] UNESCO IIEP Dakar. 2020. Analyse du secteur de l'éducation du Niger: éléments pour de nouvelles orientations dans le cadre de la 2e phase du PSEF. UNESCO. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000373174

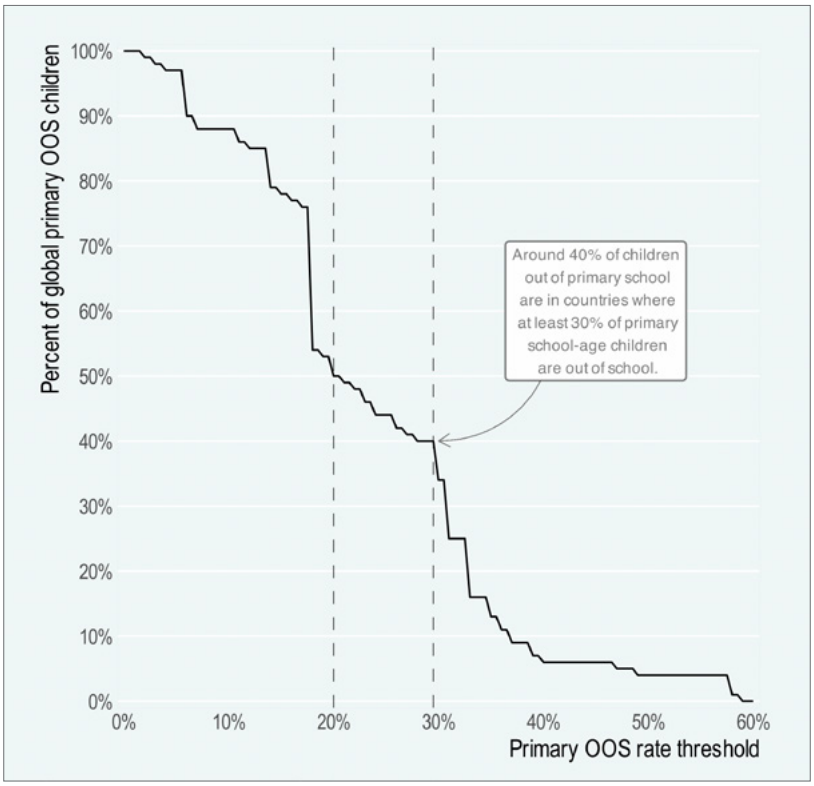

Figure 15: Percentage of global primary OOS children located in countries where the primary OOS rate meets or exceeds a given threshold.

In between, we see that fully half of all children out of primary school are in countries where they make up at least 20% of the school-age population. At the primary level, where universal attendance was supposed to have been achieved by 2015, this is not a small minority. Two-fifths of all children out of primary school are in countries with a primary OOS rate of at least 30%, even.

In such systems where a quarter or even a third of all school-age children do not attend primary school, asking why those specific children do not attend may be the wrong question. In terms of providing close to universal access to basic education, there are successful examples (even if there remain quality or equity challenges) at every level of national income, from all geographic and cultural regions, with all kinds of economies, topographies, and histories of conflict. In a country where such a large proportion of children remain out of primary school, the question for research is not 'what works' in terms of interventions to improve access for specific groups, but what has worked in terms of integrating insights into access barriers into systems-level and policy reform. Case studies of countries that successfully made large strides towards universal primary enrolment[32] demonstrate the importance of solutions for the most marginalized being implemented in a context of, inter alia, strong institutional mandates, long-term strategic planning, and sufficient commitment to invest.

Indeed, global primary OOS numbers are driven by countries with high overall OOS rates failing to meet fundamental education policy benchmarks in terms of resource commitments and education quality. International aid for education is woefully inadequate in any case, but even though it does play a significant role in some countries, it is poorly targeted in proportion to OOS child populations as those most in need of support.

[32] Education Above All. 2014. Four countries that achieved UPE: How did they do it?

6.2 Many systems with high OOS rates are chronically underfunded

Quality schooling requires adequate resources. Chronically underfunded school systems suffer at every level. Schools lack appropriate infrastructure and fall into disrepair, low salaries fail to attract the most qualified graduates into the teaching profession and teachers may be forced to moonlight to make ends meet, teaching materials are lacking. While ample evidence exists that simply increasing spending in dysfunctional systems often fails to improve education outcomes, schools starved of funding stand no chance of succeeding.

The Education 2030 Framework for Action specifies benchmarks for government expenditure on education of at least (!) 4–6% as a percentage of Gross Domestic Product (GDP) (as well as 15% to 20% of total public spending).[33] **Figure 16** shows all countries with at least 1 million children out of primary school that have shared data on education expenditure with UIS as part of their SDG 4 reporting.

Given that all of these countries face particularly stark challenges in enrolling all children — challenges that require an above-average investment into improving their systems — it seems clear that the upper rather than the lower end of that range is the relevant benchmark. Even the median lower middle-income countries reached 4.15%. However, most of these countries with large OOS populations consistently fall far short and their education systems are chronically deprived of resources. Overall, almost half of all children out of primary school outside of China or India are in countries spending at most 3% of GDP on education, and a quarter in countries spending less than 2.5%.

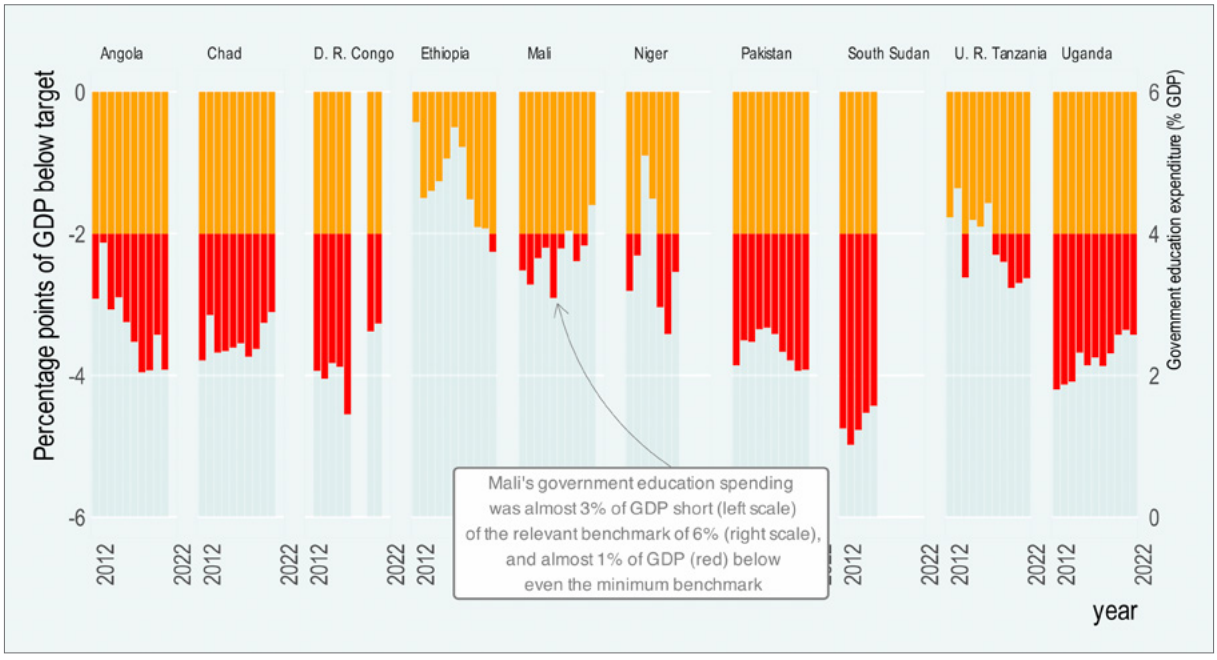

Figure 16: Government education expenditure shortfall relative to benchmark range of 4%–6% of GDP, countries with primary out of school rates above 10% and more than 1 million children out of primary school and available expenditure data.

[33] https://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf

Notably absent from the figure is Nigeria, notoriously deficient in reporting education expenditure through international channels, with no entries at all in international databases between 1976 and 2009. However, local media reporting gives some information. The proposed federal budget presented in 2021 included 1.29 trillion LCU (local currency units) allocated for education.[34] Extracting state-level education spending from the State of States report adds another 0.87 trillion LCU. Relative to a 2021 GDP of 176.1 trillion LCU according to the World Bank, both amounts together represent a paltry 1.2% of GDP. This is an outrageously low figure by any standard, but consistent with the 0.5-0.6% of GDP reported by the World Bank for 2010-2013 (which may only include federal spending).

The point is not that spending more money on education in these systems will automatically lead to lower OOS rates in the absence of system reform and smart policies. Reviewing the large literature on the effects of education spending on performance at the level of individual schools, jurisdictions, or nationally is beyond the scope of the present analysis. The point is that in a system that has been completely starved of funds, where investments in education have consistently been only half or even a third of what is generally considered appropriate (never mind relative to actual need), under-performance is not a mystery that needs solving. As they say: money is not everything, but without money, everything is nothing.

This becomes even clearer from a perspective of cumulative deficit. A shortfall of 2 percentage points of GDP of education expenditure each year over 25 years implies 50% of GDP of missing investment into the education system — even in nominal terms, without applying a discount rate. For Nigeria, the corresponding cumulative shortfall over a single generation is a staggering 100% of GDP.

Mozambique provides an instructive example in the other direction. Despite having a GDP per capita (adjusted for Purchasing Power Parity (PPP)) of around one quarter of either Nigeria or Pakistan, it managed to reduce its primary OOS rate dramatically during the 2000s and 2010s, from 42% in 2000 to only 5%,[35] a figure far superior to that of the former two (even if the most recent escalation of violent conflict in the province Cabo Delgado[36] is likely to have challenged this progress; Data collection for the 2002–23 DHS survey is currently ongoing and will provide much-needed clarity).

6.3 OOS is de facto not a priority in aid targeting

It is not the case that this shortfall in government education expenditure is offset by aid, or that the most aid is available where the OOS challenge is greatest.

Aid to basic education (in constant USD) was essentially unchanged in 2019 at 6 billion compared to 5.9 billion in 2010, although it reached USD 6.5 billion in 2021. In any case, absolute levels of aid to basic education remain too low overall to expect much of an impact on OOS numbers. Per school-age child in recipient countries, it amounted to only USD 9 and USD 11 on average in Central and Southern Asia and Sub-Saharan Africa per year, and USD 19 in Northern Africa and Western Asia respectively (excluding the sui generis case of Palestine, with its complete reliance on education aid via the dedicated UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA)).

These averages do not hide highly targeted support either. Only around 20% of total education aid by official donors goes to low-income countries.

[43] https://www.premiumtimesng.com/news/headlines/491888-2022-budget-though-far-from-unesco-benchmark-buhari-inches-towards-fulfilling-education-funding-pledge.html?tztc=1

[35] This is based on the consolidated estimate that already includes an empirical reality check on the official administrative figure of 0.82% for 2020, based on the observation that past administrative estimates underestimated the OOS rate compared to the 2008 MICS and 2011 DHS surveys.

[36] https://www.hrw.org/world-report/2022/country-chapters/mozambique

The notional average amount of Official Development Assistance (ODA) (as reported by the OECD DAC database) for basic education per primary school-age child is shown in **Figure 17**. With the exception of Djibouti, all countries receiving more than USD 100 in basic education aid per primary school-age child have primary OOS rates below 20%. Conversely, again with the exception of Djibouti, all countries with primary OOS rates above 20% receive at most USD 40, and in many cases far less. Indeed, all the countries with large absolute primary OOS counts receive only marginal amounts of basic education aid in relation to the target population.

As a result, the hypothetical amount of basic education aid per primary OOS child varies by several orders of magnitude. It is only around USD 20 for Sudan or the D. R. Congo, and just over half of that amount for Nigeria, but USD 90 for Thailand, USD 300 for Peru, USD 400 for Nepal, over USD 1,500 for Turkey, over USD 3,000 for Viet Nam, and over USD 7,000 for Tunisia, and USD 32,500 for Georgia, even leaving aside small island states.

This notional comparison does not imply a claim that an idealized targeting of aid would mean a perfect correlation between the number of OOS children and the amount of basic education aid or, equivalently, a uniform amount of basic education aid per OOS child across countries. Basic education aid need not necessarily be intended to support initiatives at increasing access directly but could target quality measures at that level, for instance. Even access-oriented support may serve to maintain access rather than reach children currently not attending. From this perspective, it makes sense that two countries with one million OOS children each might receive a very different amount of basic education aid if, say, one otherwise has an enrolment of two million and the other of eight million needing support in school. Moreover, some forms of multilateral support especially, such as the erstwhile EFA Fast Track Initiative, can only be accessed conditional on a demonstrated capacity to produce a credible strategy for universalizing at least primary schooling and implementing the plan provided it is funded. In other words, the most dysfunctional education systems, with perhaps the highest OOS rates, would specifically not qualify for such aid programmes.

Senegal, EAA/buildOn

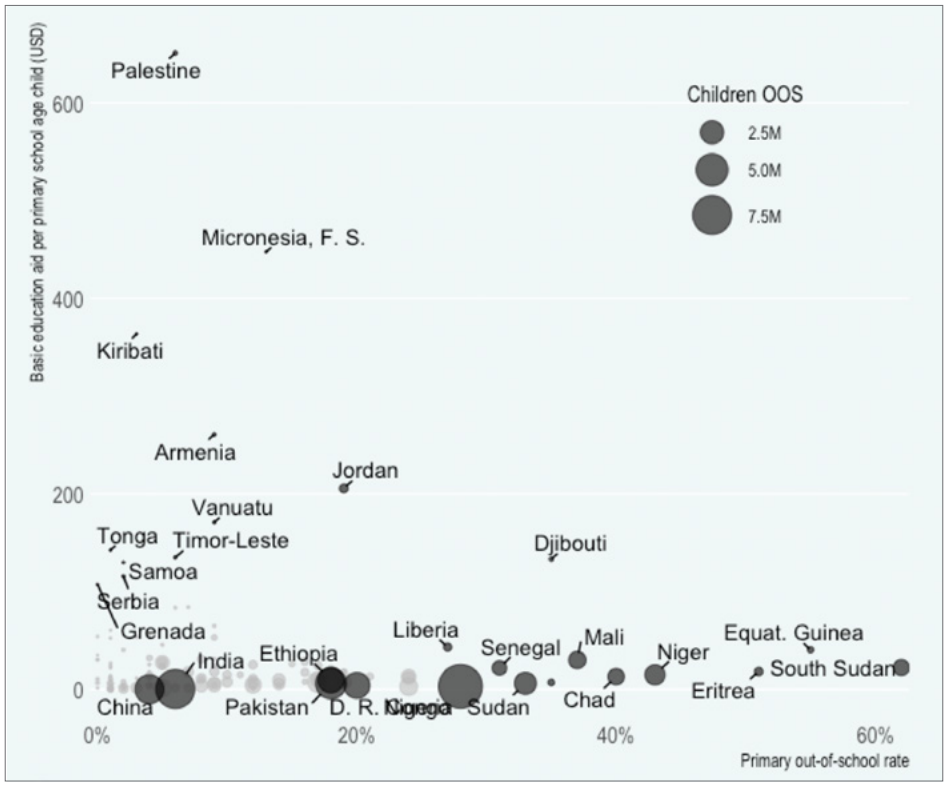

Figure 17: Basic education aid (USD) per primary school-age child by primary out of school rate. The dot size represents the absolute number of primary OOS children.

Nevertheless, these hypothetical averages do serve to moderate our expectations for how current patterns of ODA do or do not facilitate a substantial reduction in OOS numbers. Whatever valid reasons there may be for this, and whatever caveats there might be for what could or could not be achieved even if things were different, the fact remains that the donor community as a whole is not currently directing its support specifically at the countries with the largest OOS challenge.

Key messages:

- Most OOS children are in countries where being OOS is common, rather than limited to the most marginalized.
- In countries failing to provide large shares of the population with access to primary education, not just 'hard to reach' groups, failure is likely to be systemic.
- Almost half of all children out of primary school outside of China or India are in countries spending at most half the international benchmark (which is realistic and met by many of their peers). Some countries with large OOS populations have run up staggering amounts of cumulative investment shortfalls.
- Children out of primary school are de facto not a priority for international aid.

Ethiopia, EAA/imagine1day

7. Conclusions and recommendations for further research

As noted in the new OOSCI Operational Manual: 'As the most vulnerable face multiple, compounding barriers to education, the reasons for being out of school are often complex'. No attempt was made here to examine these reasons that keep individual children out of primary school, nor the consequences of their non-attendance. The less ambitious aim of the present report has been to review the contribution of various factors to aggregate numbers and shares of children out of school. In other words, not to answer 'What is causing the gender gap in enrolment?' but 'How many of the OOS children does the gender gap account for?' If a specific marginalized group had been identified as the key to stagnant global progress in reducing OOS numbers, understanding what in turn drives their non-attendance and how to overcome those barriers would be the next stage.

As it were, the present analysis does not point to any one marginalized group as the main driver of overall OOS figures. On the contrary, at the global scale, OOS children are not, on the whole, found in countries with close to universal enrolment in the gap between 'close to universal' and 'truly universal'. Instead, most OOS children are in countries where being out of school is widespread and not limited to the most marginalized. Many OOS children are fairly typical for their society, it is their whole society that is marginalized at the global level.

In terms of numbers, only China and India, and to a lesser extent Indonesia, account for a large number of OOS children in a system that has solved the basic access constraint for the most part and where in-depth research and targeted interventions are required to reach the various groups representing the 'furthest behind'. These are also countries with significant domestic capacity. By contrast, a much larger share of children out of primary school is located in countries where we have to ask ourselves why we would even expect them to be in school, given the little attention and hopelessly inadequate resources invested in the education system. Some of these countries suffer structural marginalization in the global system such that the poor capacity of their education system is unsurprising, and at the same time creates significant challenges for effective external support.

But others, including some of the largest, such as Nigeria and Pakistan, ought to be able to do far better than they do with respect to the basics of ensuring access to primary schooling for all. Arguably, framing the challenge there in terms of specific marginalized groups risks failing to see the forest for the trees. As long as there is insufficient recognition of the systemic, structural problems and a lack of political will beyond lip service to working towards a coherent effort at universal enrolment, reaching the Sustainable Development target of universal schooling will remain out of reach.

What is required are in-depth, country-specific OOS studies, following the latest guidance on distinguishing children who never entered primary school from drop-outs,[37] the distinct challenges of reintegrating drop-outs and of identifying 'at-risk' learners to reduce drop-outs in the first place, and so on. These should include qualitative components to understand the complex decision-making with respect to school enrolment beyond simply 'demand and supply' factors. With respect to this gap, research specific to given subgroups may indeed be called for. For instance, there is a well-known lack of understanding of the education behaviour of IDPs in many settings. There is also a dearth of surveys capturing longitudinal data. A notable exception is the YoungLives project, which is relatively small in scale, however, and not nationally comprehensive even in the handful of countries it covers. Another exemplary case is the Indonesia Family Life Survey, with its highly detailed individual education histories. Too few such data sources exist that, unlike general-purpose household surveys such as the DHS, allow for crucial analyses of the timing of temporary absences and drop-outs.

[37] As noted in the 2020 Global Education Monitoring Report, a large share of OOS children are recent dropouts (Figure 10.4). In Nigeria, for instance, 77% of OOS children (all levels) could (re)enter school and still be at most two years over-age.

One is the question of when exactly drop-out occurs during the school year. Is it the case that most dropouts finish the previous school year but then do not begin the following, or do they begin but then quickly decide not to continue early in the school year? Or do they hang in there and only drop out later in the school year as experiences of failure accumulate? Or is the timing of drop-out not linked to the academic calendar but triggered by external factors, such as reaching a particular age? For one, this matters because it makes a substantive difference whether dropouts-in-grade-x accumulated x years of schooling by the time they drop out (at the end of the year) or only x-1 (if they drop-out at the beginning). In addition, the same measurement issue arises as with age: surveys conducted at different stages of the school year will pick up different amounts of cumulative drop-out, making them less comparable and limiting our ability to infer the true trend over time if these surveys are for the same country in different years. Trying to understand the timing of drop-out with greater granularity would be a natural extension to the 'zones of exclusion' work that tries to identify patterns of drop-out over children's school life at the level of grades.[38] Unfortunately, there is next to no systematic information available on this question. In the absence of a digital real-time Education Management Information System (EMIS), administrative enrolment registers are typically only updated (or at least reported up) at the beginning of the school year. Surveys might ask about attendance 'at any time' during the reference school year.

Another issue concerns temporary absences. Some children are not in attendance for a temporary period (related to the harvest season, for example) but return to school. Recall that many surveys do not ask whether a school-age child has definitively dropped out, but whether it attended at any time during the school year, or is 'currently' attending, or ideally both. The former question effectively ignores temporary absences, while the latter misses an eventual return. Strictly speaking, the conventional cross-sectional OOS data collection and questionnaire flow therefore conflates headcount information (how many school-age children have never entered school?) with the average amount of school being missed among the group that has. For illustration, consider a scenario where one-tenth of the student population misses a different month of the 10-month academic year. At any given time, the 'current attendance' question would yield an OOS rate of 10%. And while this would be accurate in the sense that at any given time, 10% of children are not in school, they would be different children at different times. In other words, it would in reality be a measure of the average amount of schooling being missed, not a headcount identifying a particular subset of children who 'are' OOS children in distinction to their peers.

Both of these issues — the timing of drop-out and temporary absences — would require either true longitudinal data or at least detailed retrospective 'schooling history' questionnaires to disentangle.

While such matters may seem technical and potentially of relatively little impact on overall OOS estimates, the lack of commitment in many countries may partly be due to uncertainty or poor quality data providing cover for some political actors to deny the scale of the OOS problem.[39] As we have seen, methodological challenges, statistical artefacts and accounting effects, in some cases counterintuitive, prevent globally harmonized aggregate statistics from giving clear-cut guidance at the country level.

[38] Lewin, K.M., 2009. Access to Education in Sub-Saharan Africa: patterns, problems and possibilities. Comparative Education 45 (2), 151–174.

[39] As happens in Nigeria, for instance, where the federal government disputes international OOS estimates for the country: https://guardian.ng/news/fg-faults-unescos-report-says-only-2-8m-out of school/

Major data gaps exist when it comes to OOS figures at subnational or even fully geo-coded levels of granularity, and also including invisible and semi-invisible OOS children (whose data exist somewhere, but not in the database on which the Ministry of Education's OOS calculation is ultimately based). Research is required on overcoming the eight barriers identified by the OOS Children Initiative, such as OOS data being incomplete, inaccurate, not incorporated into EMIS, not passed along, or not reported and analysed. In addition, we require a better understanding of how to promote and facilitate the establishment and institutionalization of the collection of such data and their use to prompt global, national, and local political action in high-OOS settings, in combination with highly contextual, qualitative research on combinations of individually experienced factors that result in non-attendance at primary school and of what happens inside schools and classrooms. Gaining such understanding may offer greater leverage than a research agenda of cross-country statistical estimates of the coefficients of crude covariates of (non-)enrolment, an agenda that is hitting rapidly diminishing returns and may have run its course.

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