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St Andrews

Lost government revenues due to tax abuse – the impact on the determinants of health and mortality rates

GRADE



Government Revenue and
Development Estimation



UNIVERSITY OF
LEICESTER

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Background

Governments generally provide the critical determinants of health (or Sustainable Development Goals 3,4,5 and 6) which are also fundamental economic and social human rights. Studies show that when governments have more revenue, they spend more on public services and health determinants. Governments in low and lower-middle-income countries have little government revenue, and one of the leaks includes tax avoidance and evasion (abuses). It has been estimated that four countries enable more than half of global tax abuse.

Methods

In 2020, for the first time, estimates on tax abuse by country were publicly available. These estimates were used with models of the relationship between government revenue, health determinants, child mortality and maternal mortality to determine the increased coverage in health determinants and deaths averted if there was an increase in revenue equivalent to that lost due to tax abuse over ten years.

Findings

If tax abuse were curtailed, the equivalent increase in government revenue would result in more than 34 million people having access to basic sanitation, 17 million accessing basic drinking water services and almost 3.3 million children would have been at school for an extra year. Additionally, more than half a million child deaths and more than 72,000 maternal deaths could be averted.

Interpretation

To reach the Sustainable Development Goals, and ensure all have access to their fundamental rights, tax abuses will need to be curtailed. For this to happen, those countries believed to facilitate most abuses will need to review their policies and practices.

Introduction and rationale

The Social determinants of health and child survival

Health is the result of social and economic factors and is determined both within and outside health facilities. Water, sanitation, education, and healthcare are critical for child health and survival. Half of the reduction in mortality between 1990-2015 resulted from increased health determinants coverage, provided outside the health sector ¹. These health determinants are Sustainable Development Goals (SDGs) 3,4,5, and 6, and fundamental economic and social human rights ².

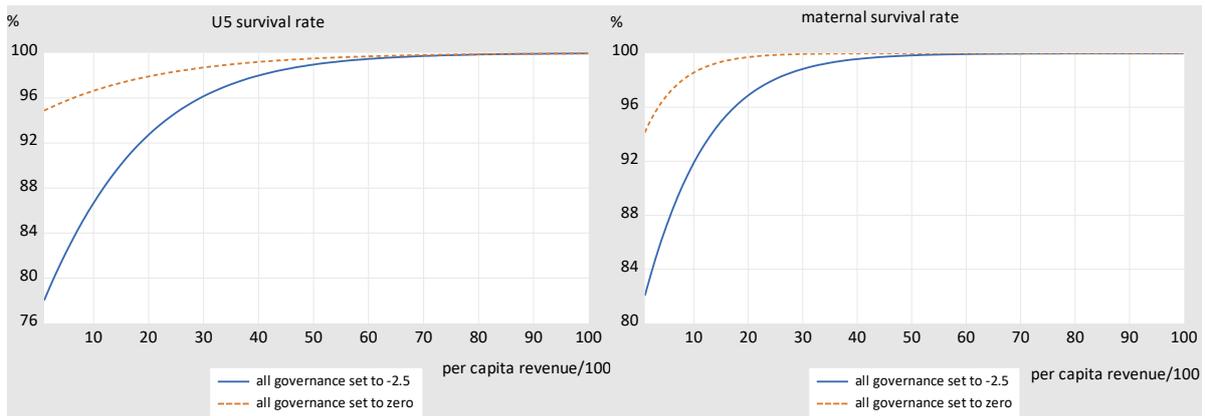
The social determinants of health and government revenue per capita and governance

The determinants of health are often provided as public services by governments, which allocate resources to multiple sectors, including education, social welfare, health, and infrastructure. When government revenue increases, governments have increased spending capacity, and citizens have improved public services and health determinants ³. For example, Reeves et al. showed that an increase in tax revenue of \$100 is associated with a \$10 increase in government health spending, and Tamarappoo et al. showed that a 10% increase in tax revenue led to a 17% increase in health expenditure ^{3,4}. Increased spending results in improved outcomes and economic growth within a relatively short timeframe. Baldacci et al. empirically showed that an increase in government spending by 1% of Gross Domestic Product (GDP) on education is associated with three more years of schooling and a rise of 1.5% growth in per capita GDP. Increasing health spending by 1% increases child survival by 0.5% and per capita GDP by 0.5%. Health spending benefits are realised immediately, and most of the benefits of spending on education within five years ⁵.

A model of the relationship between government revenue per capita and child mortality showed the relationship to be highly non-linear. An increase in revenue is much more significant when the government revenue per capita is small. Government revenue per capita was used, as opposed to health spending, because multinational corporations and banks' practices impact government revenue in other countries but are unlikely to influence government spending. This model allows an estimation of their effect, both positive and negative. Government revenue also reflects the spending capacity on all sectors, which indirectly affects health, including education and infrastructure ⁶.

However, as well as revenue, governments need to efficiently allocate and implement programmes ⁷. Researchers have confirmed the critical influence of quality of governance acting via increased social spending effectiveness^{8,9}. Figure 1 shows government revenue per capita for 217 countries plotted against child and maternal survival¹⁰. The effect of increased government revenue, shown as a move to the right along the X-axis, demonstrates the association with improved survival, shown as a percentage on the Y-axis. The blue and red lines show how the relationship changes as the quality of governance changes. For the red line, six dimensions of governance from the World Governance Indicators are set to -2.5, which is the worst possible, on a scale of -2.5 to +2.5. The blue line shows the effect of an improvement in the quality of governance set to zero ¹¹. This figure demonstrates that improved governance amplifies the positive outcomes of an increase in government revenue and survival shifts vertically up the Y-axis, especially important at very low government revenue per capita levels.

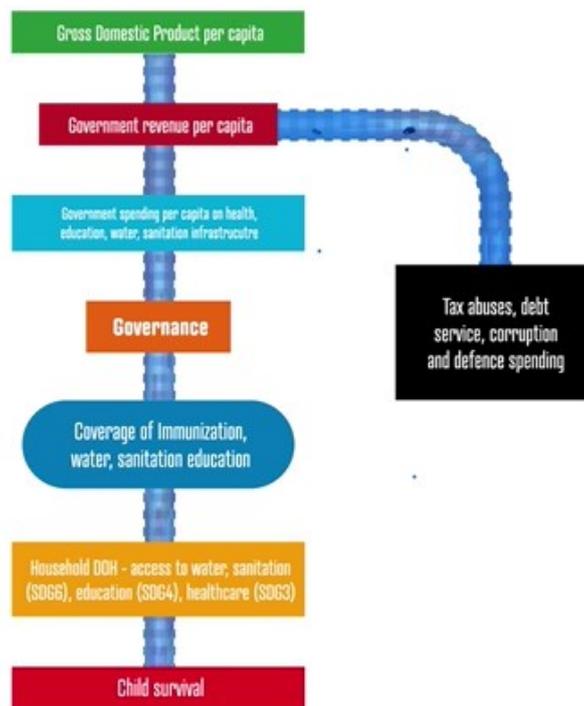
Figure 1: The effect of governance and per capita revenue on the survival indicators



A study of 31 African countries showed that a 1% increase in tax to GDP ratio reduces corruption by 0.08 points, measured on a scale of 0-6¹², so not only does an increase in government revenue improve survival, it also acts to strengthen governance which further amplifies this effect.

For countries to improve child survival, it is crucial to raise government revenue, which leads us to consider possible leaks from government revenue envelopes. Leaks include tax abuses (see box 1), military expenditure, theft from the public purse, and repayment of debts considered odious, see figure 2¹³. This analysis focuses on tax abuses because estimates are available, broken down by country are available for the first time. We use these to estimate the impact on access to health determinants¹⁴.

Figure 2: A conceptual framework for losses from government revenue and the impact on child health and survival



Tax abuse and the impact on government revenue and governance

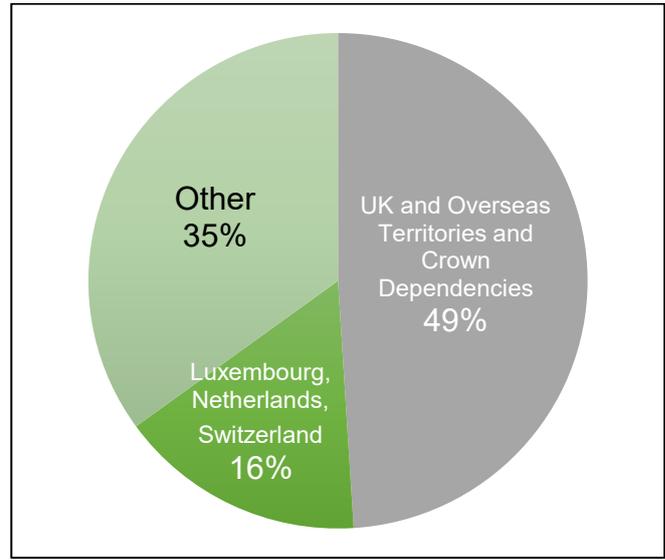
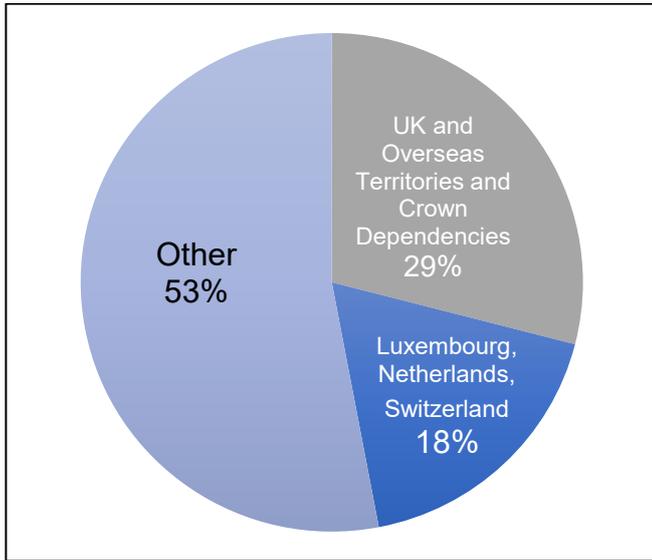
The purposes of taxes include revenue generation, which allows governments to spend on public goods, redistribution of wealth in society, and reduce behaviours known to damage health, such as smoking, eating highly processed food, and drinking alcohol ¹⁵. Ideally, governments design their tax regimes to provide a net benefit for the public purse and public welfare. Governments also shape their policies to attract investment as the private sector is the main employment and capital provider. Countries sometimes compete to attract foreign investment and offer tax incentives, which further reduces tax revenue.

The international tax framework is a mesh of the world's countries domestic tax codes, bilateral and multilateral tax treaties, resulting in a very complex environment for corporations operating in multiple jurisdictions ¹⁶. However, sometimes multinational corporations use artificial tax-avoiding arrangements to move profits from a high to a low tax jurisdiction and minimise their tax ¹⁷. Tax avoidance is often described as legal, while tax evasion is illegal (see box 1). However, as both impact government revenues, we call both 'tax abuses'. After assessing rules and regulations, countries have been ranked by how much they contribute to helping the world's multinational corporations to abuse tax and thus undermine other countries' revenue. Upper-middle-income countries and high-income countries enable 98% of global tax abuses. The UK and her Overseas Territories and Crown Dependencies, Luxembourg, the Netherlands and Switzerland enable more than half of global tax abuse (figure 3) ¹⁴.

Figure 3: The four countries which enable more than half of global tax abuses

Corporate Tax Abuse (\$245billion total)

Offshore Tax Evasion (\$182billion total)



Countries responsible	Corporate tax avoidance \$245 billion	Tax evasion \$182 billion	Tax abuses combined \$427 billion
UK and Overseas Territories and Crown Dependencies	29%	49%	37.4%
Luxembourg, Netherlands, Switzerland	18%	16%	17.6%
The UK, Overseas Territories and Crown Dependencies, Luxembourg, Netherlands, Switzerland	47%	65%	55%

Box 1: Definitions

Tax abuse: here it includes both tax avoidance and tax evasion.

Tax Avoidance: Legally reducing a tax bill using an unintended interpretation of tax codes by taking advantages of loopholes. Tax avoiders seek to comply with the letter of the law, but to subvert its purpose.

Tax Evasion: illegal activity and includes the deliberate avoiding of tax.

Tax Haven or Low Tax Jurisdiction: A country with low tax rates, either corporate or personal. Such places attract people to live or register companies to avoid paying a higher tax rate in their own country. Tax havens allow corporations and individuals to be less transparent by manipulating tax rules and often specialise in either corporate tax avoidance or evasion although they are often involved in both. Corporate tax abuse is facilitated by tax havens because they allow multinational corporations to shift profit into their jurisdiction to artificially drive down the amount of profit they declare elsewhere and artificially decrease the amount of profit they declare.

To facilitate tax evasion, tax havens pass laws to ensure secrecy and lack of transparency, and this is why they are sometimes called secrecy jurisdictions.

Gross National income (GNI): the amount that a nations people and businesses earn. Our definitions are based country income levels from the World Banks Atlas method, most recently updated in 2019.

Low-income countries (LICs) have a GNI per capita of \$1,035 or less.

Lower-middle-income countries (LMICs) have a GNI per capita between \$1,036 and \$4,045.

Upper-middle-income countries (UMICs) have a GNI per capita between \$4046 and \$12, 535.

High-income countries (HICs) have a GNI per capita of \$12536 or greater in 2019

This analysis aims to quantify the increased coverage of health determinants and child deaths averted associated with increased government revenue equivalent to tax abuse and the proportion of these losses attributed to the four countries that enable more than half of global abuses.

Methods

Data sources for tax abuses

Before 2020, corporations generally aggregated their global operations, with a few notable exceptions. But the Organisation for Economic Co-operation and Development (OECD) have for the first time, made available data on how much profit multinational corporations make in every country where they work. The State of Tax Justice 2020 report used these to estimate international corporate tax abuse from all countries¹⁴. Profit shifting was assessed using the mismatch between expected and reported profits, with the former calculated using figures on labour and sales. Tax evasion was identified when jurisdictions attracted bank deposits, large relative, to their economy's size because they provide financial secrecy. Multinational corporations shift \$1.38 trillion of profit each year into tax havens (see box 1). Governments would have taxed a proportion of this, depending on the tax rates in each country. The hiding of profits in tax havens results in countries losing \$245 billion direct tax globally, which is in line with previous estimates, ranging from \$90 – 280 billion¹⁸. A further \$182 billion losses are because of private offshore tax evasion. We used the 2020 State of Tax Justice Report for tax abuse data¹⁴.

Estimating the impact of an increase in government revenue equivalent to the tax abuse

To estimate the impact of an increase in government revenue equivalent to the tax abuse in each country on health determinants, we employed economic modelling from the Government Revenue and Development estimations project (the GRADE)¹⁰. The GRADE used several decades of data from countries worldwide to study the impact of government revenue on maternal and child mortality and assumed that governments would spend any additional income in the same way as they have been in recent years. The estimates provide a realistic forecast of what would happen if government revenue were to increase. The relationship between government revenue per capita and mortality rates is highly non-linear. The best model of this non-linearity is a version of an inverse function which implies that countries with small per-capita government revenues have a better scope for reducing mortality rates. The GRADE project has modelled the relationship between government revenue, determinants of health and survival. Rather than impose the same sigmoid shape across all countries, the modelling includes six dimensions of governance from the World Governance Indicators, allowing an individual 'sigmoid' shape, which varies for each country as governance varies. The actual and fitted models show that the modelling is precise and are available on the GRADE project website. Most benefits accrue after five years, and the GRADE does not attempt to model for the first five years but shows the gains five years after the increase in revenue.

Time selected

Tax abuse will fluctuate between years, but as these are the first annual country by country estimates available, we assumed the losses reported for 2020 occurred every year over the period studied. We converted tax abuse estimates from 2020 to 2010 prices as the GRADE tool uses constant 2010 USD.

We analysed from 2003, with benefits accrued by 2008 and present these for 2008-2017. We select 2017 because this is the most recent year with data for most of the required variables. In practice, there would be a gradual accumulation of benefits over the first five years, as revenue increases and governments spend money on training staff and building hospitals and schools. There are fluctuations in basic and safely managed water and sanitation coverage, mainly due to governance and government revenue per capita. We present the average for the ten years studied for water and sanitation and the total for extra years of education and child death averted.

Role of the funding source

The funders of the GRADE project had no role in the study design; in the collection, analysis, and interpretation of data; in the writing of the report.

Results

Tables 2 and 3 summarises the total harm a country has suffered through tax abuse, the associated increased coverage of health determinants if these losses were to be curtailed, and the number of child deaths avoided for low- and middle-income countries. Tables 7 and 8 in the appendix provide the figures for upper-middle and high-income countries and include coverage of safely managed water and sanitation. Data is not always fully available for each country (see table 1 for total number of countries analysed per variable). This means that the estimates provided will underrepresent the true impact of curtailing these losses.

Table 1: Data availability for each analysed variable

Variable	Basic drinking water	Safe drinking water	Basic sanitation	Safe sanitation	Extra school years	Child mortality	Maternal mortality
Number of countries analysed	148	77	146	73	107	148	141

There is a wide variation between countries regarding tax abuse. For example, in the Gambia the deflated value for tax abuse lies at \$168 million, whereas in Nigeria it lies at around \$9 billion.

Table 2: Increased coverage of health determinants and the number of child deaths averted when there is an increase in government revenue equivalent to the tax abuse for low-income-countries

Country	Total tax loss	Tax loss 2010	Basic drinking water			Safe drinking water			Basic sanitation			Safe sanitation			Extra school years	Child mortality	Maternal mortality
			All	U5	Women	All	U5	Women	All	U5	Women	All	U5	Women			
Afghanistan	2,889,007.26	2,443,920.61	801	131	181	n/a	n/a	n/a	5,041	853	1,116	n/a	n/a	n/a	472	234	50
Benin	2,514,741.55	2,127,315.08	1,322	220	309	n/a	n/a	n/a	1,216	203	284	n/a	n/a	n/a	n/a	40	6
Burkina Faso	2,878,336.64	2,434,893.93	2,287	403	522	n/a	n/a	n/a	2,565	452	585	n/a	n/a	n/a	206	72	12
Central African Republic	36,718,947.34	31,061,947.65	2,508	424	588	n/a	n/a	n/a	11,484	1,917	2,671	n/a	n/a	n/a	1,327	907	154
Chad	348,472,562.31	294,786,132.79	107,486	20,403	23,356	n/a	n/a	n/a	665,449	127,181	144,165	n/a	n/a	n/a	62,291	32,412	3,349
Comoros	325,841.28	275,641.47	33	5	8	n/a	n/a	n/a	27	4	7	n/a	n/a	n/a	13	9	1
Congo DRC	115,900,570.18	98,044,680.03	5,500	1,018	1,217	n/a	n/a	n/a	133,147	24,771	29,577	n/a	n/a	n/a	n/a	11,409	1,538
Gambia	198,524,896.20	167,939,725.37	129,581	22,958	31,196	n/a	n/a	n/a	214,959	38,076	51,763	n/a	n/a	n/a	n/a	4,442	545
Guinea	3,932,536.36	3,326,681.38	1,217	207	252	n/a	n/a	n/a	2,871	490	686	n/a	n/a	n/a	n/a	129	24
Guinea-Bissau	17,426,718.64	14,741,921.03	2,133	358	524	n/a	n/a	n/a	8,716	1,449	2,159	n/a	n/a	n/a	n/a	566	66
Haiti	84,214,556.12	71,240,281.18	1,866	264	499	n/a	n/a	n/a	32,395	3,997	8,496	n/a	n/a	n/a	n/a	2,357	182
Liberia	193,892,150.88	164,020,710.60	127,987	20,389	30,098	n/a	n/a	n/a	125,649	19,957	29,558	n/a	n/a	n/a	n/a	13,078	1,634
Madagascar	75,628,385.86	63,976,914.66	24,666	3,879	5,864	n/a	n/a	n/a	32,643	5,114	7,768	n/a	n/a	n/a	3,140	1,363	177
Malawi	56,666,997.89	47,936,758.76	60,008	10,386	14,012	n/a	n/a	n/a	49,342	8,530	11,519	n/a	n/a	n/a	4,380	1,544	194
Mali	15,016,010.19	12,702,611.48	5,666	1,073	1,245	n/a	n/a	n/a	7,828	1,479	1,721	253	48	56	837	325	49
Mozambique	477,698,230.20	404,103,017.14	534,492	92,576	125,668	n/a	n/a	n/a	674,873	116,366	158,786	n/a	n/a	n/a	58,959	21,362	3,436
Nepal	9,259,715.08	7,833,143.53	5,532	588	1,559	n/a	n/a	n/a	7,452	796	2,096	n/a	n/a	n/a	437	161	25
Niger	13,170,332.78	11,141,283.09	9,872	2,023	2,060	n/a	n/a	n/a	12,650	2,594	2,641	358	74	75	1,255	450	78
Rwanda	72,016,601.47	60,921,569.52	93,955	14,162	23,529	n/a	n/a	n/a	85,244	12,880	21,357	n/a	n/a	n/a	3,482	1,285	257
Senegal	168,252,207.50	142,330,911.84	98,457	16,614	24,208	n/a	n/a	n/a	104,498	17,673	25,690	3,512	595	863	7,657	2,293	321
Sierra Leone	76,453,111.73	64,674,581.50	29,114	4,595	6,923	32,916	5,178	7,834	33,858	5,368	8,036	1,319	210	313	4,661	2,384	264
Tanzania	299,485,210.70	253,345,877.52	266,555	46,094	62,227	n/a	n/a	n/a	301,825	52,120	70,487	10,674	1,847	2,493	23,716	8,034	1,078
Togo	41,616,875.55	35,205,290.54	13,147	2,090	3,181	n/a	n/a	n/a	20,402	3,260	4,931	n/a	n/a	n/a	2,155	1,045	105
Uganda	115,358,153.30	97,585,829.06	83,488	15,629	19,286	53,058	9,942	12,253	157,642	29,497	36,422	n/a	n/a	n/a	n/a	2,270	279
Yemen	55,671,403.46	47,094,547.77	8,134	1,278	1,947	n/a	n/a	n/a	29,070	4,535	7,008	n/a	n/a	n/a	1,684	615	76
TOTAL			1,615,807	277,767	380,459	85,974	15,120	20,087	2,720,846	479,562	629,529	16,116	2,774	3,800	176,672	108,786	13,900

Table 3 Increased coverage of health determinants and the number of child deaths averted associated with increased government revenue equivalent to the tax abuse for lower-middle-income countries.

Country	Total tax loss	Tax loss 2010	Basic drinking water			Safe drinking water			Basic sanitation			Safe sanitation			Extra school years	Child mortality	Maternal mortality
			All	U5	Women	All	U5	Women	All	U5	Women	All	U5	Women			
Angola	2,253,340,634.16	1,906,186,148.46	547,317	103,169	124,309	n/a	n/a	n/a	1,056,228	198,128	239,902	n/a	n/a	n/a	n/a	41,493	2,378
Bangladesh	703,397,194.60	595,030,315.83	405,917	39,699	112,107	233,797	22,527	64,806	601,262	58,847	165,951	n/a	n/a	n/a	27,106	9,141	1,563
Bhutan	88,817.67	75,134.23	81	7	21	175	16	46	21	2	5	n/a	n/a	n/a	2	1	n/a
Bolivia	135,745,614.05	114,832,353.93	52,614	6,001	13,136	n/a	n/a	n/a	90,749	10,335	22,667	1,800	204	450	6,670	1,626	266
Cambodia	23,957,864.94	20,266,864.94	17,888	2,036	4,875	9,209	1,055	2,513	42,362	4,824	11,549	n/a	n/a	n/a	n/a	489	60
Cameroon	140,343,296.69	118,721,707.73	45,327	7,577	10,780	n/a	n/a	n/a	104,410	17,435	24,829	n/a	n/a	n/a	n/a	2,223	284
Cape Verde	1,237,000.35	1,046,425.43	536	56	143	n/a	n/a	n/a	369	39	98	n/a	n/a	n/a	35	8	1
Congo, Rep.	12,966,239.26	10,968,632.66	2,693	438	658	4,767	778	1,167	6,512	1,059	1,592	n/a	n/a	n/a	n/a	194	13
Cote d'Ivoire	237,855,315.07	201,210,815.65	81,258	13,000	19,118	99,194	15,865	23,298	149,634	23,961	34,991	n/a	n/a	n/a	11,749	4,554	693
Djibouti	4,443,973.06	3,759,325.05	1,095	120	285	n/a	n/a	n/a	1,828	199	476	60	7	16	83	35	4
El Salvador	107,350,934.61	90,812,219.63	34,191	3,258	9,461	n/a	n/a	n/a	61,657	5,862	17,072	n/a	n/a	n/a	2,275	494	75
Eswatini	17,757,992.35	15,022,158.00	3,076	421	824	n/a	n/a	n/a	5,885	807	1,578	n/a	n/a	n/a	n/a	157	12
Ghana	157,890,653.00	133,565,680.73	203,687	29,301	50,884	137,399	19,755	34,326	195,493	28,101	48,830	n/a	n/a	n/a	10,379	2,716	391
Honduras	329,418,841.94	278,667,869.40	107,748	12,517	28,334	n/a	n/a	n/a	233,505	27,176	61,371	n/a	n/a	n/a	10,876	2,862	346
India	10,319,683,939.87	8,729,811,323.03	6,725,780	650,488	1,722,236	n/a	n/a	n/a	11,548,377	1,114,050	2,958,331	n/a	n/a	n/a	352,258	75,902	12,571
Indonesia	4,864,783,875.81	4,115,304,849.51	1,619,789	152,891	438,899	n/a	n/a	n/a	3,556,868	335,722	964,297	n/a	n/a	n/a	119,371	25,616	3,598
Kenya	565,831,721.67	478,658,474.05	265,857	40,347	66,773	n/a	n/a	n/a	590,144	89,865	148,107	n/a	n/a	n/a	n/a	6,592	1,160
Kiribati	195,826.23	165,656.82	43	6	11	n/a	n/a	n/a	-6	-1	-2	n/a	n/a	n/a	n/a	2	-
Kyrgyz Republic	16,492,755.14	13,951,845.94	6,876	843	1,846	561	75	141	17,935	2,186	4,827	n/a	n/a	n/a	760	219	29
Laos	86,830,245.08	73,452,991.45	68,501	8,189	18,293	79,400	9,523	21,204	129,120	15,497	34,466	4,131	494	1,103	3,802	1,611	203

Lesotho	279,135,738.70	236,131,488.61	86,294	10,553	22,514	n/a	n/a	n/a	93,592	11,460	24,420	n/a	n/a	n/a	8,567	2,532	254
Mauritania	18,723,820.91	15,839,188.94	5,259	823	1,280	n/a	n/a	n/a	10,793	1,688	2,627	n/a	n/a	n/a	736	258	29
Micronesia	268,019.05	226,727.46	76	9	19	n/a	n/a	n/a	-17	-2	-5	n/a	n/a	n/a	n/a	2	n/a
Moldova	29,325,312.86	24,807,392.32	7,366	394	1,983	10,649	571	2,887	15,225	815	4,102	n/a	n/a	n/a	412	85	6
Mongolia	42,360,156.97	35,834,060.41	14,138	1,591	4,114	22,769	2,600	6,600	30,731	3,486	8,911	n/a	n/a	n/a	n/a	398	27
Morocco	521,534,832.87	441,186,058.87	119,764	11,832	32,395	404,373	39,972	109,227	218,630	21,600	58,978	18,119	1,790	4,912	13,333	2,861	227
Myanmar	3,951,996.55	3,343,143.49	4,155	365	1,161	n/a	n/a	n/a	10,170	921	2,843	n/a	n/a	n/a	629	317	35
Nigeria	10,825,786,951.52	9,157,943,014.10	1,809,065	315,633	413,399	1,314,019	229,809	300,925	5,132,147	897,183	1,172,992	125,246	21,899	28,626	n/a	141,625	20,039
Pakistan	2,532,760,498.29	2,142,557,988.22	937,245	122,756	228,828	785,847	102,570	191,911	2,472,593	324,248	603,636	n/a	n/a	n/a	97,486	30,325	6,383
Papua New Guinea	21,050,973.30	17,807,815.24	9,165	1,227	2,270	n/a	n/a	n/a	17,719	2,379	4,386	n/a	n/a	n/a	n/a	282	37
Philippines	2,135,295,746.35	1,806,327,507.73	830,771	95,396	214,135	306,243	34,389	78,952	1,800,098	206,649	463,933	73,450	8,422	18,921	68,795	13,298	2,970
Sao Tome and Principe	155,405.10	131,463.06	77	12	18	n/a	n/a	n/a	25	4	6	n/a	n/a	n/a	8	3	1
Solomon Islands	2,025,383.17	1,713,348.30	1,497	230	365	n/a	n/a	n/a	434	67	106	n/a	n/a	n/a		71	7
Sri Lanka	104,809,114.66	88,661,997.91	51,836	4,422	13,500	n/a	n/a	n/a	89,040	7,615	23,225	n/a	n/a	n/a	2,279	531	63
Sudan	645,033,468.29	545,658,230.23	174,070	27,619	41,040	n/a	n/a	n/a	732,119	115,835	172,749	n/a	n/a	n/a	47,923	22,489	2,570
Timor-Leste	680,873.72	575,976.86	837	116	192	n/a	n/a	n/a	583	82	133	n/a	n/a	n/a	166	65	10
Tunisia	296,225,462.34	250,588,332.97	14,169	1,209	3,930	120,896	10,492	33,460	58,174	5,216	16,022	6,018	503	1,673	n/a	1,026	52
Ukraine	650,062,522.65	549,912,497.71	70,456	3,711	17,583	36,481	1,870	9,131	170,788	8,976	42,492	13,237	702	3,274	n/a	1,412	76
Uzbekistan	175,402,109.50	148,379,284.73	62,950	6,628	17,711	76,080	8,013	21,415	65,148	6,699	18,509	n/a	n/a	n/a	5,057	1,874	221
Vanuatu	5,382,339.95	4,553,125.13	2,976	428	744	5,402	773	1,349	1,442	206	360	n/a	n/a	n/a	n/a	64	6
Vietnam	420,826,698.21	355,993,235.50	269,141	22,080	74,148	n/a	n/a	n/a	369,609	30,336	103,466	n/a	n/a	n/a	n/a	2,468	328
Zambia	143,620,449.59	121,493,975.43	98,311	17,467	23,210	n/a	n/a	n/a	96,350	17,054	22,771	n/a	n/a	n/a	n/a	2,977	342
TOTAL			14,759,892	1,714,865	3,737,532	3,647,261	500,653	903,358	29,767,745	3,595,611	7,484,599	242,061	34,021	58,975	790,757	400,898	57,330

Figure 4 shows the increase in coverage of basic sanitation in Angola taken from the GRADE website. These figures are available for all countries. Fluctuations are due to variations in the quality of governance and government revenue.

Figure 4 Increased access to the determinants of health associated with an increase in government revenue equivalent to tax abuses in Angola 2008-2017

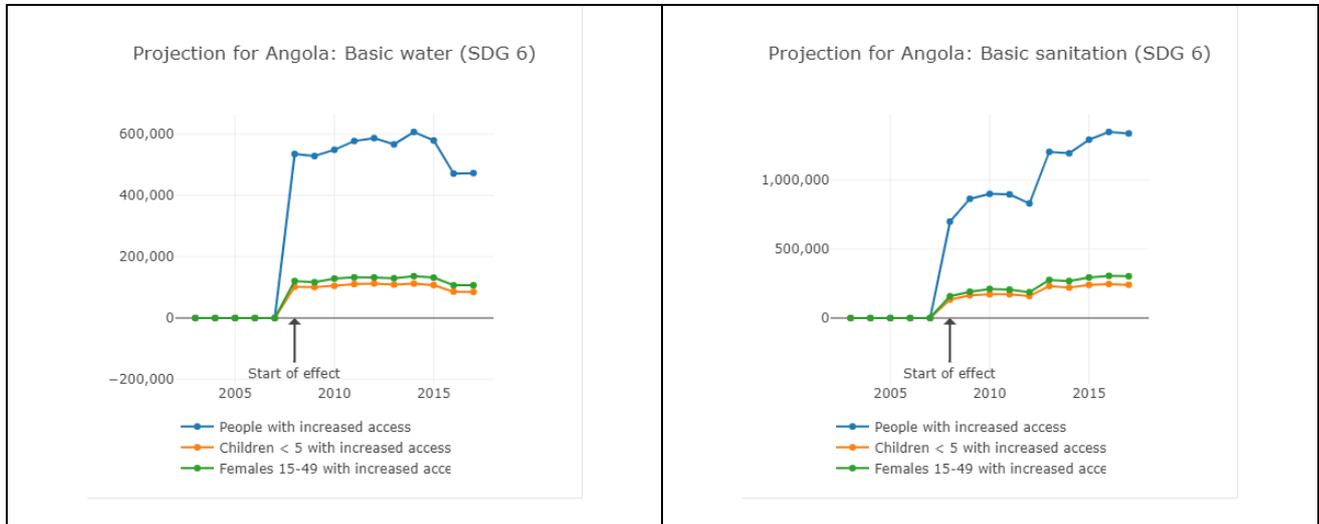


Table 4 shows the increased coverage of health determinants and the number of child deaths averted associated with increased government revenue equivalent to tax abuse in each of the four income levels. The four countries which enables 55% of global tax abuse and therefore responsible for 55% of the reduced coverage of the determinants of health and the associated loss of life is shown in table 4. The UK and her Overseas Territories (OT) and Crown Dependencies (CD) contributes to 37.4% of the decrease in coverage of the determinants of health and the associated loss of life associated, is shown in table 5.

Table 4: Increased coverage of the determinants of health and the number of child deaths averted associated with an increase in government revenue equivalent to the tax abuse in each country

	Basic drinking water services			Safe drinking water			Basic sanitation services			Safe sanitation services			Extra school years	Child Deaths Averted	Maternal deaths
	All	U5	Women	All	U5	Women	All	U5	Women	All	U5	Women			
LIC	1,615,807	277,767	380,459	85,974	15,120	20,087	2,720,846	479,562	629,529	16,116	2,774	3,800	176,672	108,786	13,900
LMIC	14,759,892	1,714,865	3,737,532	3,647,261	500,653	903,358	29,777,746	3,596,611	7,487,599	242,061	34,021	58,975	790,757	400,898	57,330
UMIC	632,504	61,600	168,950	4,131,125	365,466	1,119,147	1,083,531	109,539	290,767	1,167,421	89,628	316,980	546,786	76,695	1,690
HIC	3,886	388	1,014	654	37	167	16,945	1,440	4,265	1,226,494	71,547	285,478	1,774,928	5,853	24
Total	17,012,089	2,054,620	4,287,955	7,865,014	881,276	2,042,759	33,599,068	4,187,152	8,412,160	2,652,092	197,970	665,233	3,289,143	592,232	72,944

Table 5: Increased coverage of the determinants of health and the number of child deaths averted associated with an increase in government revenue equivalent to the proportion of global tax abuse attributable to four enabling countries

The UK and Overseas Territories and Crown Dependencies, Luxembourg, Netherlands, Switzerland	Basic drinking water services		Safe drinking water			Basic sanitation services			Safe sanitation services		Extra school years		Child deaths averted	Maternal deaths averted	
	All	U5	Women	All	U5	Women	All	U5	Women	All	U5	Women			
	9,356,649	1,130,041	2,358,375	4,325,758	484,702	1,123,517	18,479,487	2,302,934	4,626,688	1,458,651	108,884	365,878	1,809,029	325,728	40,119

Table 6: Increased coverage of the determinants of health and the number of child deaths averted associated with an increase in government revenue equivalent to the global tax abuse attributable to The UK and Overseas Territories and Crown Dependencies

The UK and Overseas Territories and Crown Dependencies	Basic drinking water services			Safe drinking water			Basic sanitation services			Safe sanitation services			Extra school years	Child deaths averted	Maternal deaths averted
	All	U5	Women	All	U5	Women	All	U5	Women	All	U5	Women			
	6,365,045	768,733	1,604,331	2,942,682	329,728	764,295	12,571,035	1,566,616	3,147,396	992,276	74,070	248,896			

Discussion

Limitations

Tax abuses are hidden, and indirect methods have evolved to estimate the scale. For example, one research organisation estimates the scale of illicit flows (but do not assess the tax losses) by using the mismatches between what countries report it exports and what the importing country reports, or the value gaps in trade ¹⁹. We use the estimates by the State of Tax Justice 2020 because they provide estimates on tax losses by individual country. However, these are only direct losses and do not include indirect losses, which are three times as large and result from governments trying to counter the direct losses by competing and reducing their effective tax rate. Previous estimates that included direct and indirect losses have ranged from \$500 to \$600 billion each year ²⁰. It is currently impossible to accurately estimate Indirect losses by individual countries, so the values discussed in this paper are conservative. Also, tax abuse is a phenomenon that has occurred over many decades. The estimates provided here are merely a snapshot in time which further contributes to this being a conservative estimate. We have projected the forecast from one year over the period under study, but tax abuse will fluctuate between years, but as these are the first estimates, and until more estimates become available, this is reasonable to give an idea of the scale of the problem. A further limitation is the sparse data on the coverage of safely managed water and sanitation services in low- and lower-middle income countries.

The crippling impact of lost government revenue due to tax abuses

The median revenue loss from low- and lower-middle-income countries is higher than other income levels and these countries have very small government revenue per capita. Additional income in such countries would have more impact because the relative increase is vast, and the interventions required to reduce child mortality are less costly than in wealthier countries. Thus, while low- and middle-income countries lose less in absolute terms than other income groups they could witness considerable gains in the coverage of health determinants, especially water and sanitation. Some of the low-and middle-income countries that lose large proportions of their government revenue to tax abuses also lose large proportions of their government revenue to service external debt, which further compromises access to health determinants. The gains in low- and lower-middle-income countries is mainly in increased coverage of water and sanitation while in upper-middle and high -income countries, there is often 100% coverage of basic water and sanitation in many countries; thus, the gains in these countries are seen mainly in increased numbers accessing safely managed sanitation and additional years of education.

Tax abuses and human rights

Tax abuses abroad undermine government revenue, and therefore the determinants of health (fundamental human economic and social rights) in other countries. The countries that facilitate this are violating their international human rights obligations. The United Nations Economic and Social Council has declared that home countries must prevent their corporations' human rights violations abroad ²¹. The key areas include the provision of tax havens, which allows multinational corporations to engage in transfer pricing to minimise tax paid in other countries (transfer pricing is over or under-invoicing between different arms of the same companies to minimise paying taxes). Multinational corporations may also negotiate tax holidays and incentives that undermine government revenue and, therefore, health determinants in other countries ²². The United Nations Committee on the Rights of the Child (UNCRC) have recognised this and recently requested Ireland to explain the measures they would take to ensure that Irish based multinational corporations do not negatively impact children ²³.

The four enabling countries which contribute most to global tax losses also contribute to overseas development aid. However, it has been shown that a 10% increase in domestic health financing is five times more effective than a 10% increase in development assistance for health in reducing under-five mortality ²⁴. This finding supports the premise that countries that provide aid should prioritise a review of policies that facilitate tax abuses as this may be more impactful than overseas development aid. Equally, the provision of technical assistance for low-income-countries to increase their domestic revenue capacity is likely to become an essential component of future development agendas ²⁵.

Host countries of multinational corporations must respect, protect, and fulfil human rights within their territory and jurisdiction. This obligation includes the responsibility to use all available tools at their disposal to protect their citizens and business enterprises against infringements by other actors. Tools include legislation, policies, regulations, and adjudication. Governments need to invest in the revenue authorities and review tax incentives and treaties to counter tax abuse and maximise public finances²⁶. These actions should be part of every country's strategy, which receives overseas development aid to decrease its dependence on aid²⁷.

Conclusions and recommendations

Tax abuse contributes to millions not accessing their health determinants and hundreds of thousands of children's deaths. Lower-income countries would benefit from unitary taxation. Unitary taxation is where the multinational corporation's group profit is apportioned to each country it operates based on how much of the group's real economic activity occurs in that country¹⁴. Most global tax abuse is attributed to four enabling countries (the UK and Overseas Territories and Crown Dependencies, Luxembourg, Netherlands, Switzerland). The four countries enabling more than half of global tax abuses should review their tax policies to ensure they are meeting their human rights obligations and are not negatively impacting government revenue and children's rights. To reduce tax abuse and child mortality, governments should publicly publish the disaggregated, company-level data to assist the assessment of the changes needed to the global tax system.

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