

The contribution of corporate tax to the Sustainable Development Goals in Sub-Saharan Africa employing econometric modelling: a case study of Vodafone

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Abstract

Background:

We are not on track to reach many of the Sustainable Development Goal (SDG) targets for 2030. The under-5 mortality and maternal mortality rates are well below the target, and if progress continues in the same way it has in recent years, we will not meet our goal by 2030. The decline in child and maternal mortality since 1990 has mainly resulted from increased coverage of sanitation, drinking water, education, and health services. When governments have more income, they spend more on public services, which increases access to fundamental economic and social rights and, thus, contributes towards the SDGs. Taxation constitutes 70% of government revenue in low-income countries, and corporate income tax contributes much more than high-income countries. Therefore, corporate taxation plays a vital role in SDG progress.

This paper aims to demonstrate the contribution of one large taxpayer that publishes their tax payments (Vodafone Group Plc) on the progress towards SDGs 3, 4, and 6 in six African countries.

We use econometric modelling to estimate the impact of an increase in government revenue equivalent to Vodafone's average tax paid between 2007-2017.

Results:

We find it results in almost 400,000 people accessing clean water, nearly 700,000 accessing basic sanitation, 15,175 children spending an extra year in school. As a result, over ten years, an additional 9,165 children under five years and 1,325 mothers would survive.

Conclusions:

These findings demonstrate that the contributions from a single multinational corporation can drive progress towards the SDGs. Furthermore, it highlights the importance of paying fair tax and explores the responsibilities of global institutions, governments, investors, and multinational corporations.

Background

The public recognise that their governments drive development and that taxes are necessary to provide critical services. Fair taxes have been described as paying the right amount of tax (but no more) at the right time and in the right place according to the letter and spirit of the law and providing sufficient public information for external critique (1). Private businesses are the primary drivers of economic growth and job creation, and their contributions to public finances are vital (2). Indeed, a position paper by the International Chamber of Commerce highlights the critical role of the private sector, and taxation provides a stable flow of revenue to finance public spending. Corporate profit should be taxed where economic activity occurs, contributing to efficient tax administrations (3). On the other hand, tax abuse (defined as tax avoidance or tax evasion, see table one (4)) has been described as tax practices that avoid a fair share of the tax burden, (5). Nonetheless, despite growing criticism in the media and attention by advocacy groups, some entrepreneurs consider tax avoidance and tax planning integral to modern business practice, contradicting many corporations' avowed social responsibility aspirations (6, 7).

The 17 Sustainable Development Goals (SDGs) are the centrepiece of the 2030 Agenda for Sustainable Development and a plan to build an equitable and sustainable world. A global framework for financing has been established, emphasising domestic resource mobilisation (8). One of SDG 16 targets is to reduce tax abuses, and one of SDG 17 targets is to support domestic resource mobilisation (9).

We aim to demonstrate how corporate tax payments accelerate progress towards the SDGs by studying the contributions of a telecommunications multinational, Vodafone Group PLC, hereafter referred to as Vodafone. We analysed Vodafone's contributions in six countries, the Democratic Republic of Congo (DRC), Ghana, Kenya, Lesotho, Mozambique and Tanzania. Despite controversies and limitations discussed below, we believe Vodafone is a good case study.

The Sustainable Development Goals and the right to health

The determinants of health (education, drinking water, and sanitation) are minimum core economic and social rights, which the United Nations Committee on Economic, Social and Cultural Rights and the African Charter on Human Rights (Article 16) have highlighted as the threshold below which no one should fall (10, 11) (see appendix). These rights are essential for human survival, are also among the SDGs (3, 4 and 6) and are usually provided as critical services (see the appendix for definitions) (12). Researchers have shown that most of the decline in child and maternal mortality since 1990 is due to increased coverage of these rights (13, 14).

For example, SDG 3 aims to reduce the under-five mortality rate (U5M) to less than 25 per 1000 live births and the maternal mortality ratio (MMR) to less than 70 per 100,000 live births in all countries by 2030. However, in 2018, the U5M rate was on average 68 per 1000 live births across sub-Saharan African (SSA) countries (compared to 4.7 per 1000 live births in Europe). Equally staggering is the maternal mortality ratio, 547 per 100,000 live births in SSA (compared to 8 per 100,000 live births in Europe) (15). Despite increases in survival rates in some regions, many countries are unlikely to meet the SDG targets for maternal or child mortality by the target year of 2030 (16).

While different countries have varying abilities to provide for their citizens, these fundamental human rights should be immediately accessible to all people in every nation (17). There are many reasons why a government may not provide critical services, and a lack of tax revenue is prominent among them (18). Therefore, increased government revenue resulting from progressive taxation is the most sustainable strategy to ensure governments fulfil their human rights obligations and provide services essential for health (19).

Financing the Sustainable Development Goals

Reeves et al. found that increased tax revenue was associated with increased government health spending, while Baldacci empirically showed that increasing government spending on health and education increased child survival (20, 21). Moreover, governments with robust revenue streams are more likely to allocate resources to critical services (22), and increased revenue across all sectors is vital to ensuring human rights obligations.

Governments use tax revenue to fund the SDGs. This relationship is usually considered to be in two steps. The first step is to raise revenue and the second step is to allocate the income. If income is redistributed to support the SDGs, then tax revenue can support progress (23). Experts have developed frameworks to support governments in aligning their tax policy with the SDGs and assessing corporations on their broader contribution to the SDGs (24).

Taxes make up, on average, 40% of GDP in high-income countries compared to 18% in low-income countries and account for around 85% of total government revenue in high-income countries and 70% of government revenue in other income groups.(25). Moreover, corporate income tax contributes to about 12% of government revenue in low-income compared to 7% in high-income countries; therefore, it plays a significant role in raising vital revenue for human rights and development (26).

Tax revenue gaps include domestic and international components (18). Reducing the domestic tax gap includes reviewing tax policies and strengthening revenue authorities. For example, many low-income countries introduced value-added tax (VAT) over the last few decades, and this was very effective in raising revenues (although opinions vary about its merit in the tax policy mix)(27). Other tax policies include reducing tax expenditures (tax incentives and exemptions), increasing taxes on wealthy individuals, and integrating the informal sector into the formal economy. However, experts do not anticipate that domestic tax policy choices will lead to significant reductions in the domestic tax gap in the short term (26).

Corporate tax is critical in countries with minimal opportunities to reduce the domestic tax gap, where the developmental needs are vast and immediate. For countries that urgently require revenue to reach the SDGs, narrowing the international tax gap represents the most viable source of additional funding in the short to medium term (28). In addition, surveys show that most businesses are familiar with the SDGs and plan to incorporate them into their business practices (29).

Any additional corporate tax could play a critical role in low-income countries. The relationship between government revenue per capita and progress to the SDGs is highly non-linear, and government revenue per capita is small (30)(31). In addition, an empirical study by Gaspar et al. identified a tax to Gross domestic product (GDP) tipping point. A tipping point is when small changes give rise to significant outcomes, and they estimate that when the tax to GDP ratio is 12.75%, the real GDP increases sharply and sustainably over the next decade (32). Thus corporate tax could play a crucial role in some countries. In contrast, international corporate tax avoidance and tax evasion deprive governments of vital revenue required to achieve the SDGs (33).

Efficient governments and institutions are necessary to ensure effective distribution and robust revenue streams to pay civil servants, who are essential to facilitate good governance. On the other hand, poor pay and conditions for public servants may compromise service delivery efficiency and drive corruption (34). Furthermore, an empirical study of 23 sub-Saharan African countries has demonstrated that increasing fiscal capacity through increasing the tax to GDP ratio leads to improved governance and reduced corruption, highlighting the importance of focusing on increasing revenue through higher taxation (35). Therefore, small increases in corporate tax revenue could play a pivotal role in tipping the balance towards the SDGs in some countries.

Table 1
Tax term definitions

Tax avoidance	It is a term that is difficult to define but generally used to describe the arrangement of a taxpayer's affairs intended to reduce their tax liability. Although the arrangement could be strictly legal, it is usually in contradiction with the intent the law purports to follow (36).
Tax evasion	A term that is difficult to define but generally means illegal arrangements where liability to tax is hidden or ignored, i.e. the taxpayer pays less tax than they are legally obligated to pay by hiding income or information from the tax authorities (36).
Tax Abuse	Tax avoidance and tax evasion (37)

Should fair corporation tax be considered in the context of corporate social responsibility?

Society needs successful businesses, domestic and multinational corporations (MNCs). Enterprise requires a healthy and educated population, which requires critical services that require taxes (38). However, there is a perception and evidence that some corporations avoid taxes, which has led some to propose that taxes should be an essential component of corporate social responsibility (CSR) strategies (39, 40). In contrast, others, notably Milton Freedman, argue that corporations are only responsible for their employees (shareholders or proprietors). They must conduct their business with this in mind while conforming to society's laws, including ethical customs. In his thinking, if an executive chooses to spend shareholder money on social goods, they are spending money that is not their own and on sectors where they have no expertise. He states that the imposition of taxes and determining the spending of this revenue is the function of the governments, not the business (41)).

Vodafone and Tax Controversies

Vodafone is a publicly listed telecommunications company on the UK and the US stock exchange. It is one of the UK's largest and most successful companies, established in 1991, employs 93,000 people as of 2020 and has subsidiaries in 45 countries. Vodafone Global Enterprise provides telecommunications services to clients in 150 countries.

In 2010, Private Eye, a British satirical, current affairs magazine, reported that Vodafone's acquisition of a German company was routed through a Luxembourg subsidiary to avoid legally paying tax in the UK. This controversy led to widespread protests and shop closures across the UK. A subsequent deal

with Her Majesty's Revenue and Customs (HMRC) agreed that Vodafone would pay £1.25 billion. However, some estimate the company legally avoided paying £6 billion of tax, but HMRC settled the case because they may have lost it in court (43). Vodafone's tax report of 2012, addresses this issue, stating it was a complex interpretation of a UK law (which was later revised), and the European Court of Justice, the UK High Court and the UK Court of Appeal reviewed the case before settling.

In 2011, the company's pre-tax profits in the UK were £1.2 billion, but the corporate tax paid was £140 million, which is roughly 11 per cent in a year when corporation tax was 26 per cent. In 2012, Vodafone explained that the low corporation tax liability was for the following reasons "*the cost of acquiring radio spectrum from the government, high operating costs, substantial levels of capital expenditure and sustained competitive and regulatory pressures have a significantly negative effect on the profits of our local businesses*".

A year later, in 2012, when global pre-tax profits were £9.549 billion, including £1.3 billion in the UK, Vodafone paid no UK corporate taxes (44). The response to this claim is the same as for previous criticisms over low corporation tax.

Earlier in 2007, Vodafone acquired a company in India, and there was a dispute with the Indian government over capital gains tax. A committee subsequently ruled in favour of Vodafone that capital gains tax should be paid by the seller and not the buyer (45).

Aim

We aim to estimate the increase in the number of people who would access their rights due to the contribution of one MNC in six countries in sub-Saharan Africa. The purpose is to quantify the private sector's contribution to progress towards the SDGs and move tax abuse further up MNCs' and institutional investors' agendas. We selected Vodafone as a case study because public tax reports are available country by country.

Vodafone has published its contributions to governments each year since 2012, allowing us to use a publicly reported figure (46–51). In addition, they report that they do not artificially transfer profits from one jurisdiction to another to minimise tax payments; thus, they appear to pay a fair tax, according to the definition by the Fair Tax Foundation (1).

Methodology

Model

We employed economic modelling from the Government Revenue and Development Estimations (GRADE) tool to estimate the increase in the number of citizens accessing rights when there is an increase in government revenue equivalent to the contributions to public finances reported by Vodafone. The GRADE uses data from countries worldwide to model the impact of government revenue on the determinants of health (access to water, education, and healthcare) and maternal and child mortality. As noted, the relationship between government revenue per capita and mortality rates is highly non-linear. A version of an inverse function provides the best model of this non-linearity, implying that countries with small per-capita government revenues have a better scope for reducing mortality rates (52). The model allows governance indicators to change the shape of the curve (which is sigmoid shaped) and therefore provides a precise and realistic estimation of the effect of an increase in government revenue on progress towards the SDGs in an individual country (53). The GRADE assumes that governments will allocate any increase in revenue in the same way it has allocated their budget over recent years; thus, the GRADE incorporates both the revenue-raising and allocation steps. Therefore, we avoid making an incorrect assumption (often made when modelling the impact of an increase in revenue) that governments will allocate additional income to one specific sector (54). Hence, the model can be assumed to provide a realistic estimation of the impact of increased revenue on the variables analysed within this study. The GRADE used government revenue (excluding grants and including social contributions) from the UNU WIDER Government revenue database and the GDP in 2010 constant US\$ dollars taken from the World Development Indicators (ICTD/UNU-WIDER, 2018; The World Bank, 2020). The GRADE models include six dimensions of quality of governance (see appendix for definition).

Data

We used their 'Taxation and our total economic contribution to public finances' reports from 2012-2018. There are no public tax reports available before 2012. We did not include the 2019 report because the GRADE modelling does not go beyond 2018. The reports state that profits are not artificially transferred from one jurisdiction to another to minimise tax payments, and the accounts are independently audited. For each year, the total tax contribution for each country was converted into dollars using the average exchange rate listed in that report. We calculated an average tax contribution per country over seven years and converted this into 2010 USD. These were the figures used in the GRADE modelling. We used the average contribution as tax contributions fluctuate each year, and the average is more representative.

Contributions include direct revenue, other direct non-taxation, and indirect revenue contributions. See Table 2, as an example, for the total in 2018 (47).

We analysed 2007 – 2017 using the average tax revenue in 2010 USD. When there is an increase in government revenue, a realistic assumption is that benefits will take five years to become apparent. Therefore, we assumed that Vodafone contributed the same proportion to government revenue since 2007, and the maximum benefit was accrued by 2012, meaning that the projection period of effect within this study is 2012-2017.

As an example, Table 2 shows Vodafone's total contributions to governments in 2018 taken from their annual report (47). The total contributions are the sum of columns c, d and e (direct revenue contribution tax, direct revenue contribution non-tax and indirect revenue contributions, see table 2 for definitions). Column j shows this as a percentage of government revenue. Table 3 shows the total contribution to public finances per country each year between 2012-2018, and column h shows the average.

Table 2 Total contribution to public finances 2018 in six African countries

	Revenue (a0)	Profit before taxes (b)	Direct revenue contributions: (c)			Direct revenue contribution: non-taxation mechanisms (d)	Indirect revenue contribution: Indirect taxes (e)	Capital investment (f)	Direct employment (g)	Total contribution (h)			Government revenue excluding grants including social contributions 2018 USD 2010 (i)	Percentage Contribution to Government revenue (j)
			Total	Split between						Euro €m	USD 2018	USD 2010		
				Direct taxes	Corporate tax									
			FY17-18 €m	FY17-18 €m	FY17-18 €m					€m	€m	FY17-18 €m		
DRC	359	(65)	18	17	2	27	77	45	599	122	1.43E+08	124,168,083	3,514,738,238	3.5
Ghana	253	(168)	19	7	12	9	55	33	1,052	83	97110000	84,475,007	7,820,577,602	1.08
Kenya	781	370	308	102	206	19	99	121	1,761	426	4.98E+08	433,570,518	10,607,475,795	4.09
Lesotho	72	31	8	<1	8	4	8	10	206	20	23400000	20,355,423	1,019,838,151	2.00
Mozambique	231	68	15	3	12	6	26	58	512	47	54990000	47,835,245	3,870,741,157	1.24
Tanzania	370	40	26	9	17	9	122	61	530	157	1.84E+08	159,790,073	7,342,281,678	2.18

a. Total revenue

b. Total taxable revenue in each country minus allowable expenses

c. This includes corporation tax, business rates or equivalent, employers' national insurance contributions or equivalent, sector-specific taxes (such as 'special' taxes or 'telecoms' taxes) and other taxes.

d. Other forms of revenue raised by the government and a country's direct taxation regime, including telecoms licence fees

e. Taxes collected on governments' behalf, including pay as you earn (PAYE) income tax, employees' national insurance contributions, withholding taxes, sales and consumption taxes and value-added tax (VAT).

f. Investments in building and maintaining the networks and services relied upon by the 700 million mobile and 21 million broadband customers

g. The average number of people employed in the 2018 financial year. This includes direct employees and the relevant share of employees who work for our joint ventures, associates, or other part-owned companies.

h. Total contributions to governments (total of column c, d and e)

i. Total government revenue

j. Percentage contribution to government revenue

Table 3 Total contribution to public finances per country each year between 2012- 2018

Country	2012 in 2010 \$m (a)	2013 in 2010 \$m (b)	2014 in 2010 \$m (c)	2015 in 2010 \$m (d)	2016 in 2010 \$m (e)	2017 in 2010 \$m (f)	2018 in 2010 \$m (g)	Average yearly contribution in 2010 \$m (h)
DRC	95.34	95.51	110.59	124.23	148.25	126.62	124.17	117.82
Ghana	83.03	70.14	76.68	69.51	72.75	84.41	84.48	77.29
Kenya	336.76	158.19	212.33	242.55	253.95	327.84	433.57	280.74
Lesotho	15.38	11.94	10.32	8.87	12.35	16.69	20.36	13.70
Mozambique	6.15	7.46	11.8	26.62	31.57	46.13	47.84	25.37
Tanzania	73.81	134.31	181.37	176	144.13	154.1	159.79	146.22

Results

We found that the government revenue equivalent to Vodafone's contribution would give, on average, 392,130 people access clean water and 673,109 people access to basic sanitation across the six countries. In addition, 15,175 children would attend school for an additional year over the five years, and 9,165 under-

five deaths and 1,325 maternal deaths would be averted, see Table 4. We report the increase in access to rights in six SSA countries associated with increased government revenue equivalent to Vodafone's contribution to public finances in Table 5.

Table 4 Summary of the progress towards the SDGs associated with increased government revenue equivalent to Vodafone's contribution to public finances.

Variable	Numbers with increased access
Access to basic drinking water	392,130
Access to basic sanitation	673,109
School Life Expectancy	15,175
Under-five mortality rate	9165
Maternal Mortality Ratio	1325

Table 5 Increased access to fundamental rights associated with increased government revenue equivalent to Vodafone's contribution to public finances in six countries.

	Average increase in government revenue equivalent to Vodafone's contribution\$ million	Increased access to basic drinking water	Individuals with increased access to basic sanitation	Children who attend school for an additional year	Child deaths averted	Maternal deaths averted
DRC	117.82	5,774	80, 356	4,451*	3,799	559
Ghana	77.29	96, 551	95, 210	3,022	783	102
Kenya	280.74	154, 426	331, 290	**	1, 977	300
Lesotho	13.7	3, 713	3, 606	202	62	7
Mozambique	25.37	22, 774	31, 386	1638	594	102
Tanzania	146.22	108, 892	131, 261	5, 862	1, 950	255
Totals	Na	392, 130	673, 109	15,175	9165	1325
*Data is only available up to 2015						
**No Data available						

Discussion

We demonstrate that government revenue equivalent to the tax contribution of just one MNC is associated with significant increases in access to the determinants of health (i.e. drinking water, sanitation, and education) in six countries. Thus, we demonstrate how Vodafone has contributed to progress towards the SDGs in six host countries in SSA. The benefits include almost 400,000 people accessing clean water and nearly 700,000 accessing basic sanitation. These figures demonstrate the substantial impact MNCs can have for several reasons: 1. Government revenue in low-income countries is minimal, and any additional income will be relatively large. As shown in Table 2, the tax contributions from Vodafone alone accounted for 1-4% of government revenue in 2018 in these six countries. In the UK, Vodafone's contribution accounted for 0.16% (47)(57). 2. Important interventions which would substantially reduce mortality in low-income countries include public health measures such as clean water, sanitation, education and primary health care, which are less costly than in high-income countries (52).

The DRC demonstrates a different trend to the other five countries: whilst access to basic sanitation and additional school years increased steadily over the period studied, access to basic drinking water fluctuated over time, with a comparatively low average of 5,774. This difference is due to changes in the level of governance. At very low levels of coverage, the government plays a significant role in effectively using resources. Other contributing factors could be subnational, including regional conflicts (58).

Thus, tax contributions have massive potential to progress towards the SDGs in low- and lower-middle-income countries. Corporations, governments, consumers, investors, and international organisations could play a role in supporting this progress. We discuss these below.

Limitations

We do not have access to the previous tax year reports 2007, 2008, 2009, 2010, and 2011. Therefore, we have assumed the contribution for these years was the same as the average. Equally, the reported revenues were not analysed for misalignment. Misalignment is defined as inconsistencies between reported profit and actual economic activity (59).

Multinational corporations and the Sustainable Development Goals

While governments are crucial to driving progress towards the SDGs, businesses are vital players in the global economy. They can positively or negatively impact the progress with their policies and practices. Indeed, Barnett argues that all law-abiding MNC activities have a social component because they improve the economic conditions of society (60). Many companies are engaging with the SDGs, but Oxfam suggests that before business enterprises try to do good, they should first do no harm by reviewing their supply chains, employment policies, and tax planning arrangements (61). A review of corporate governance and tax avoidance literature finds that many firms pay above the average statutory rate and resist opportunities to reduce their tax burden. In contrast, others aggressively avoid tax (62).

Tax abuse erodes access to rights. Business enterprises must not undermine a state's ability to meet their human rights obligations, especially as it may be easier to avoid and evade tax where host country governance is poor, which is precisely where the tax revenue is most needed. Moreover, activities to support rights locally, for example, a clinic or school, while laudable, do not offset a failure to promote rights nationally by paying taxes.

Given the legal and ethical controversies surrounding tax abuse, the International Bar Association's Human Rights Institute (IBAHRI) has suggested vital considerations. It recommends business enterprises adopt and commit to human rights throughout all operations, including due diligence measures and impact assessments on tax planning practices and the financial flows and tax revenues generated in different jurisdictions. It advises against negotiating special tax holidays, incentives and rates that prevent governments from fulfilling their human rights obligations and promote transparency through public reporting on a country-by-country basis.

Certain aspects of corporate governance reduce the chances of tax abuse, such as robust governance structures, an independent audit committee, and separation between ownership and management, as in publicly traded companies. Drivers of abuse include an incentive structure based on after-tax profits that induce risk-taking by those who benefit. Indeed, individuals in crucial positions may drive tax abuses in whichever firm they work (62). Media coverage of tax abuse and the subsequent introduction of stronger taxation laws, including the OECD's two-pillar approach (63), has resulted in increased scrutiny of MNCs' tax practices, see the Global Governance section.

Tax and Corporate Social Responsibility

The idea that business enterprises have a responsibility to society beyond profit is not new. But it has received more attention over the last few decades as excessive profits have raised concerns that companies prioritise shareholders over other stakeholders in society (64). There is an ongoing debate about what CSR is, what it achieves, and what it could achieve. In general terms, it covers the areas of responsibilities that a company has to the society and the environment where they operate and incorporates these needs into their decision making, as the sole principle of maximising shareholder wealth may not benefit all stakeholders (38). The broad reasons for engaging with CSR include moral responsibility, sustainability, regulations, and reputation. One study examined three MNCs (Toyota, Ford and General Motors) who experienced ethical scandals regarding reputational impact. The researchers found that preemptively incorporating CSR considerations into their supply chains would have resulted in a competitive advantage in the long run (65).

However, CSR activities are often ad-hoc with little social impact, but rather are charitable activities in response to society's expectations that companies be good global citizens (38). Visser argues that CSR has historically and categorically failed to create positive social change because society does not lead. In many cases, CSR is undertaken to mask the harmful effects of multinational corporations on the global community. CSR may have a visible impact through small projects at the micro-level. Yet, as economic inequality is rising and many people still live in extreme poverty, Visser recommends that businesses move to systemic or radical CSR, touted as the pinnacle of CSR. Radical CSR calls for changes to the systems that underpin capitalism as we know it and taking steps to ensure that the world conducts business to benefit global society, rather than a select few, thus avoiding grievous social, economic, and environmental harm.

Some argue that businesses should develop CSR standards on Taxation (39). However, because fair tax impacts human rights and drives progress towards the SDGs (66), we argue it should be outside the CSR framework, and it is integral for any law-abiding MNC, whereas CSR gestures are discretionary. In addition, it serves to improve reputation and, thus, relationship with broader society; doing so may create a financial return, but this is debatable. Therefore, we agree with Oxfam that businesses should first not harm by ensuring tax transparency and fair tax payments before doing good with CSR activities.

Increasing tax avoidance increases profits for shareholders in the short term and increases executive bonuses (if based on after-tax profits). However, the long-term impact may be harmful, and the risks include reputation and litigation. Empirical studies show that businesses that engage with CSR hedge against negative public opinion if tax abuses become public (67). There is an association between companies that rank highly on CSR indexes and corporate tax abuse among companies listed on the Chinese stock exchange. This finding aligns with the view that CSR is a substitute for tax payments (68). These findings are in keeping with the school of thought that it is possible to compensate for tax abuse with CSR or that tax abuse is justified to pay CSR expenses (69). However, there is a question of sovereignty and national development policy and planning. Companies may decide CSR strategies, without consultation, that are not aligned with national development priorities and not well regulated by governments. Nonetheless, the relationship between CSR and corporate tax avoidance varies; for example, a study in Australia find companies which engage with CSR are less likely to engage in tax abuse (70).

We agree that it is a government's, not a business's, responsibility to redistribute tax revenue from profits and use them to respect, protect and fulfil human rights and progress towards the SDGs. The private sector's role is to support governments to meet their obligations and pay their fair share of tax. But, equally, governments must request the right amount of tax, but no more, to further develop the vital infrastructure that businesses and citizens need to thrive.

Businesses have started to publish regular CSR reports; for example, of the 500 largest MNCs listed on the US stock exchange, only 11% posted in 2011 compared to 85% in 2017 (71). However, in an era in which the international community increasingly calls for multinational corporations to combat rising global inequality, brands experience difficulty using CSR to stand out from the crowd. Therefore, cutting edge methods are required to increase brand value. (72). Fair and transparent tax practices can demonstrate how an MNC tackles global inequality. There is a financial incentive because companies' stock market prices fall when tax abuse is made public (73). In addition, boycotts have included Starbucks in the UK and Burger King in the US, related to tax abuse scandals (74). Scrutiny by the public and protests have moved tax issues up the agenda to the boardroom (75). In addition, 68% of participants of a Dutch pension fund preferred their pension fund managers to invest responsibly, even if this resulted in lower returns (76).

Investors' responsibilities

Investors increasingly incorporate CSR considerations into investor portfolio decisions as responsible and sustainable investing increases in popularity. For example, the United Nations Secretary-General convened an extensive global network of institutional investors to develop the Principles for Responsible Investment (PRI). The PRI signatories publicly commit to incorporating CSR issues into investment analysis and decision-making, pursue standardised reporting, and encourage all investors to adopt the principles (77). Signatories to the PRI had \$80 trillion of assets under management in 2019. The three most prominent institutional investors (Blackrock, State Street Global Advisors and the Vanguard Group) are signatories.

Long term institutional investors are more risk-averse and may guide their investees towards tax compliance (62). Fiduciary duties of investors require that they invest prudently and in their client's best interest. Integrating fair tax factors into investment strategies depends on whether the investor believes that these will materially affect the portfolio's performance. We believe this case study supports incorporating fair and transparent tax into the decision algorithm of investors.

Host country responsibilities

Under international human rights law, countries must respect, protect, and fulfil human rights within their territory and jurisdiction. This duty includes protecting both their citizens and business enterprises against infringements by other actors, and they must use all available tools at their disposal. Tools include legislation, policies, regulations and adjudication, which should be anchored in the constitution (22). Governments may need to invest in the revenue authorities and review tax incentives and treaties to counter tax abuse and maximise public finances. Every country that receives overseas development aid should invest in its revenue authorities to decrease its dependence on aid (78). Governments try to balance the need to provide an attractive environment for corporations with ensuring that all large taxpayers contribute to the public purse. This is complicated by competition for the same foreign investment and the resulting pressure to use tax incentives or waivers to attract investment. However, incentives reduce the amount of corporate tax revenue and drive a race to the bottom.

Home countries of MNCs

Countries that facilitate tax abuses violate their international human rights obligations. General comment number 24 (regarding extraterritorial obligations in the context of business activities) declares that they are required to take steps to prevent human rights violations abroad by corporations (79). Some countries bear more responsibility for tax abuses than others (4). The IBAHRI highlights the damaging impact of tax abuse, and those obligations include 'doing no harm' to economic, social, and cultural rights abroad. They highlight the key areas conducive to tax abuses. These include transfer pricing and other cross-border intra-group transactions, the negotiation of tax holidays and incentives; the taxation of natural resources; and offshore investment accounts. Secrecy jurisdictions or tax havens and enablers (accountants and lawyers) cost governments \$500-600 billion annually because of their role in facilitating tax abuses (80,81). Home countries should consider the obligation to 'do no harm' to rights to include an obligation for states to assess and address the domestic and international impacts of corporate tax policies. Suppose a business enterprise receives state support, for example, an export credit guarantee. In that case, there is an additional onus on the home country to ensure that the supported business does not engage in tax abuse. Additionally, countries promoting transparency and technical assistance for low-income countries to increase their domestic revenue capacity will become an essential component of future development agendas (5).

Global governance

Collectively, states are the trustees of the international human rights regime and collective action through multilateral institutions could play a critical role in the field of tax (78). While the gap in global governance regarding taxation is significant (82), there are initiatives to address this. For example, the UN Committee on the Rights of the Child (UNCRC) has asked Ireland to explain her plans to ensure that its tax policies do not contribute to tax abuse by Irish domiciled companies, impacting the realisation of children's rights in host countries. For the first time, the UNCRC will examine the effect of a country's tax policies on children living overseas (83). In November 2021, the European Union adopted new rules requiring multinational companies to publish their OECD reporting data country by country. This move has been controversial, as advocacy groups argue low-income countries are negatively impacted by the deal and excluded from the decision-making process (84). Opponents of higher tax rates argue that this move would hamper economic growth, while other experts contend this would benefit low-income countries (7,85). However, this will reveal publicly the extent of profit shifting and the countries which lose out. Increasingly, companies are publishing taxes country by country voluntarily. This path has been carved by the extractive industries transparency initiative (EITI), a global standard for oil, gas, and mineral resources. Among other criteria, it requires transparency on how revenue from extraction makes its way along the supply chain to the government and the economy. This initiative came about due to concerns about the 'Resource curse' where countries with abundant natural resources had lower development and economic growth than countries with few natural resources. Whilst the EITI is voluntary; it has led governments in the EU and Norway, Canada, and Ukraine to pass laws now requiring country by country reporting regarding the extractor sector (86)(87). We believe extending public country by country reporting beyond this sector will create a fairer tax system for all.

Conclusion

We demonstrate the impact of tax revenue on government revenue, access to fundamental rights, progress to the SDGs, and ultimately survival in six African countries. This case study adds weight to the argument for fair tax. The economic modelling used in this study demonstrates that revenue equivalent to the tax contributions from a single MNC in sub-Saharan Africa can substantially influence the population's access to rights and, thus, the progress towards the SDGs. Fair tax is vital for any MNC and business enterprise to do no harm and support home and host countries in their human rights obligations. We believe that fair tax should be prioritised before any CSR activity. Equally, it is an integral component of investment strategies when considering the impact an MNC has on progress towards the SDGs.

Abbreviations

SDG- sustainable development goals

DRC- Democratic Republic of Congo

U5M- under-five mortality rate

MMR- maternal mortality ratio

SSA- sub-Saharan African

VAT- value-added tax

GDP- Gross domestic product

MNC – multinational corporations

CSR- corporate social responsibility

HMRC- Her Majesty's Revenue and Customs

GRADE- Government Revenue and Development Estimations

IBAHRI- International Bar Association's Human Rights Institute

PRI- Principles for Responsible Investment

UNCRC- UN Committee on the Rights of the Child

EITI- extractive industries transparency initiative

Declarations

Ethics approval - not applicable

Consent to participate – not applicable

Data supporting these results can be found in Vodafone's 'tax and economic contribution reports' and Vodafone's annual reports available from their website. Data for the GRADE modelling was obtained from the UNU WIDER Government revenue database and the world bank, which is also available publically. Papers explaining the modelling can be obtained via the GRADE website <https://med.st-andrews.ac.uk/grade/> .

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- Dr Eilish Hannah: concept, literature review, analysis of data, writing the first draft, review of the first and final draft
- Dr Bernadette O'Hare: concept, literature review, analysis of data, contribution to the first draft and review of the final draft
- Dr Marisol Lopez: literature review, analysis of data, contribution to the first draft and review of the final draft
- Rachel Etter-Phoya: contribution to and review of the final draft
- Dr Stuart Murray: creating the visualisation of the models, review of first and final draft
- Professor Stephen Hall: modelling, review of first and final draft

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Appendix

Minimum Core Obligations (Members of the Organisation of African Unity, 1986; Office of the United Nations High Commissioner for Human Rights, 2008)

Ensure the right of access to employment, especially for disadvantaged and marginalised individuals and groups, enabling them to live a life of dignity.
Ensure access to the minimum essential food that is nutritionally adequate and safe.
Ensure access to basic shelter, housing, and sanitation, and an adequate supply of safe drinking water.
Provide essential drugs as defined under the World Health Organization's Action Programme on Essential Drugs.
Ensure free and compulsory primary education for all.
Ensure access to a social security scheme that provides a minimum essential level of benefits that cover at least essential health care, basic shelter and housing, water and sanitation, food, and the most basic forms of education.

Sustainable development goals with indicators used in this study

(16)

<p>SDG 3 - Good health and well-being Ensure healthy lives and promote well-being for all at all ages Targets:</p> <ul style="list-style-type: none"> • By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births • By 2030, end preventable deaths of new-borns and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births <p><i>Indicators used in this study: Child and maternal mortality rates</i></p>
<p>SDG 4 - Quality education Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all Targets:</p> <ul style="list-style-type: none"> • By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes <p><i>Indicators used in this study: Additional school years*</i></p>
<p>SDG 6 - Clean water and sanitation Ensure availability and sustainable management of water and sanitation for all Targets:</p> <ul style="list-style-type: none"> • By 2030, achieve universal and equitable access to safe and affordable drinking water for all • By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations <p><i>Indicators used in this study: Access to drinking water and sanitation*, **</i></p>
<p><i>*See appendix for further information ** We differentiate between basic and safe drinking water and sanitation</i></p>

Definitions

Basic drinking water services - the percentage of the population drinking water from an improved source, provided collection time is not more than 30 minutes for a round trip. Improved water sources include piped water, boreholes or tube wells, protected dug wells, protected springs, and packaged or delivered water.

Basic sanitation services - the percentage of the population using at least, that is, improved sanitation facilities that are not shared with other households. This indicator encompasses both people using basic sanitation services as well as those using safely managed sanitation services. Improved sanitation facilities include flush/pour flush to piped sewer systems, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs.

School life expectancy (primary and secondary), both sexes (years) - the number of years a person of school entrance age can expect to spend within the specified education level. For a child of a certain age, the school life expectancy is calculated as the sum of the age-specific enrolment rates for the levels of education specified. The part of the enrolment that is not distributed by age is divided by the school-age population for the level of education they are enrolled in and multiplied by the duration of that level of education. The result is then added to the sum of the age-specific enrolment rates. A relatively high SLE indicates a greater probability of children spending more years in education and higher overall retention within the education system. The expected number of years does not necessarily coincide with the expected number of education grades completed because of repetition. Since school life expectancy is an average based on participation in different levels of education, the expected number of years of schooling may be pulled down by the magnitude of children who never go to school. Those children in school may benefit from many more years of education than the average. Here education is shown as the percentage of the maximum SLE (primary and secondary), both sexes (years), globally, which is 17 years.

Governance Dimensions	What it captures
Control of corruption	Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests
Government effectiveness	Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies
Political stability	Perceptions of the likelihood that the government will be destabilised or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism
Regulatory quality	Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development
Rule of law	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence
Voice of accountability	Perceptions of the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media