Equity and Poverty in Côte d’Ivoire
An analysis of fiscal and social policy

Information Note: This is a working draft.

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Summary

In 2015, the government of Côte d’Ivoire adopted an ambitious National Development Plan aimed at making Côte d’Ivoire a middle-income country by 2020, placing an important emphasis on social protection by including it in one of its five strategic pillars. Despite remarkable economic success since 2012, the living standards remain low, with a poverty headcount ratio of 46% in 2015. This study estimates the redistributive impact of tax revenues and expenditures through monetary and in-kind transfers, as well as subsidies, on household income and inequality. Fiscal and social policies slightly reduce inequality in Côte d’Ivoire. However, these same policies have an impoverishing effect: when taxes and transfers are added to pre-fiscal incomes, Côte d’Ivoire’s poverty headcount ratio increases by approximately 2.4 percentage points.
Foreword

In 2015, the government of Côte d’Ivoire adopted an ambitious National Development Plan (NDP) aimed at making Côte d’Ivoire a middle-income country by 2020 placing an important emphasis on social protection by including it in one of its five strategic pillars. The NDP recognises the importance of schooling and training for youth and prioritises population health, social protection, nutrition and demographic transition issues as part of the second pillar focusing on the acceleration of human capital development and social well-being.

Beginning in 2012, when gross domestic product (GDP) growth in Côte d’Ivoire reached nearly 11%, the Ivoirian economy has outpaced both lower-middle-income countries and Sub-Saharan African countries every year through 2017. In 2015, for example, annual GDP per-capita growth was slightly more than 6% in Côte d’Ivoire, while GDP per-capita growth averaged 4.1% in all lower-middle-income countries and just 0.2% in all Sub-Saharan African countries.

Some social indicators also show rapid improvement during the same time frame. For example, gross primary school enrolment reached nearly 100% in 2017 (from close to 70% in 2010) while the gap in enrolment rates between female and male pupils narrowed, and the infant mortality rate fell from 7.5% in 2010 to 6.6% in 2016.

However, the living standards for the poorer parts of the Ivoirian population are still low. In 2018, Côte d’Ivoire ranked 170th out of 189 countries on the United Nations Human Development Index. The poverty headcount ratio stood at 46% in 2015, only three percentage points lower than the 2010 level (49%). This overall reduction masks the opposing experiences in rural areas – where poverty fell approximately six percentage points – and urban areas – where poverty rose approximately six percentage points. However, in 2015, the urban poverty rate (approximately 36%) remained much lower than the rural poverty rate (approximately 57%) (World Bank, 2018[1]).

In this context, it is important to assess the current situation of both fiscal and social spending policies in order to optimise public spending and promote better living standards. A better understanding of both expenditures and revenues can ensure that the financing of expenditures is durable and adequate from a redistributive point of view. In addition, taking into account both expenditures and revenues identifies a “net” effect of social policy, reflecting the levels of household incomes after taxation and after the receipt of government transfers.

This study uses an internationally recognised methodology developed by the Commitment to Equity (CEQ) Institute. It estimates the redistributive impact of tax revenues and expenditures through monetary and in-kind transfers, as well as subsidies, on household income and inequality. This methodology has also been used by the OECD, including by Causa and Hermansen (2017[2]) and in the framework of the OECD Income Distribution Database (OECD, 2019[2]).

Two conclusions emerge from this study. First, fiscal policy reduces inequality in Côte d’Ivoire, but the reduction is minor, especially relative to what other countries in the region have achieved with respect to redistribution and inequality reduction. The addition of in-kind transfers and subsidies to, and the subtraction of direct and indirect taxes from,
household income is equalising: inequality after these fiscal and social policy elements are taken into account is 1.0 Gini points lower than inequality before.

Second, fiscal and social policies in Côte d’Ivoire fail to protect poor households: the same taxes and transfers which reduce inequality turn most poor households into net cash payers into the fiscal system, thereby further impoverishing them. In other words, the electricity subsidies received by poor households are smaller (in magnitude) than total taxes paid, leaving poor households worse off in cash terms. When taxes and transfers are added to pre-fiscal incomes, Côte d’Ivoire’s poverty headcount ratio increases by approximately 2.4 percentage points.
1. Introduction and country context

Beginning in 2012, when gross domestic product (GDP) growth reached nearly 11% in Côte d’Ivoire, the Ivorian economy has outpaced both lower-middle-income countries and Sub-Saharan African countries every year through 2017. In 2015, for example, annual GDP per-capita growth was slightly more than 6% in Côte d’Ivoire, while GDP per-capita growth averaged 4.1% in all lower-middle-income countries and just 0.2% in all Sub-Saharan African countries.

Some social indicators also show rapid improvement during the same time frame. For example, gross primary school enrolment reached nearly 100% in 2017 (from close to 70% in 2010) while the gap in enrolment rates between female and male pupils has narrowed, and the infant mortality rate fell from 7.5% in 2010 to 6.6% in 2016.

However, the improvements in social indicators and in the macro economy have not led to overwhelming improvements in living standards for the poorer parts of the Ivorian population. In 2018, Côte d’Ivoire ranked 170th out of 189 countries on the United Nations Human Development Index. The poverty headcount ratio stood at 46% in 2015, only three percentage points lower than the 2008 level (49%). This overall reduction masks the opposing experiences in rural areas – where poverty fell approximately six percentage points – and urban areas – where poverty rose approximately six percentage points. However, in 2015, the urban poverty rate (approximately 36%) remained much lower than the rural poverty rate (approximately 57%) (World Bank, 2018[1]).

Inequality has fallen slowly between 2008 and 2015: the Gini coefficient has fallen approximately 1.7 points, from 43.2 to 41.5. That puts Côte d’Ivoire in the same relative position –average among all Sub-Saharan African countries – in 2015 as in 2008.

Recent fiscal and social policy activity

Between 2012 and 2014, the government of Côte d’Ivoire adopted several business-facing reforms meant to improve the investment climate as well as enhance productivity in various commercial sectors, especially agriculture. For example, the creation of the Abidjan Commercial Court was decreed in 2012, the cashew and cotton sectors both received technical assistance packages during this period, and a financial sector development strategy was approved in 2014 that was meant to improve access to commercial finance for the housing, agricultural, and small and medium enterprise sectors.

The government also adopted a National Development Plan (NDP) for 2016-20, which aims to transform Côte d’Ivoire into a middle-income economy by 2020 and further reduce the poverty rate. The NDP specifies the following efforts to improve the living conditions and material outcomes for the poorest and most vulnerable Ivorians.

The National Social Protection Strategy (NSPS) adopted in May 2014 aims to improve social protection for the most vulnerable populations in order to mitigate against economic shocks and to improve their resilience in the long term (Ministère d’Etat, Ministère de l’Emploi, des Affaires Sociales et de la Formation Professionelle, 2013[4]). The NSPS is organised around four main strategic pillars: a) improving living standards for poor and vulnerable households; b) improving access to basic social services and investing in human capital; c) strengthening social action against violence, abuse, exploitation, discrimination
and exclusion; and d) extending contributory, formal social insurance (World Bank, 2015[5]).

**Key contributions of this study**

In this context of stellar economic growth but marginally improved social indicators with persistent poverty and inequality, it is crucial to better understand the overall impact of fiscal policy on inequality in income, consumption, savings and other outcomes. This report provides an assessment of the redistributive impact of fiscal policy and its individual elements in Côte d’Ivoire using an internationally recognised methodology developed by the Commitment to Equity (CEQ) Institute. This study estimates the impact of fiscal revenue collections (taxes) and fiscal expenditures – direct cash and near-cash transfers, in-kind benefits, and subsidies – on household-level income inequality and poverty.

Income inequality has a complex set of drivers, including educational opportunities; access to healthcare, water and sanitation; availability of infrastructure; financial inclusion; and gender inequality. Many of these are influenced or directly determined by fiscal policy. This study focuses solely on the 2015 calendar year and corresponding fiscal year. The CEQ Institute’s standardised method has generated case studies in Latin America, Africa, Asia and Europe that can provide a basis for comparison of the results in Côte d’Ivoire.

**Main findings**

Fiscal policy reduces inequality in Côte d’Ivoire, but the reduction is minor, especially relative to what other countries in the region have achieved with respect to redistribution and inequality reduction. The addition of in-kind transfers and subsidies to, and the subtraction of direct and indirect taxes from, household income is equalising: inequality after these fiscal policy elements are taken into account is 1.0 Gini points lower than inequality before. The magnitude of this impact is worse than average for a country of Côte d’Ivoire’s size: in a sample of 12 benchmark low- and middle-income African countries over the fiscal years 2010 to 2015, the average impact of fiscal policy on inequality reduction is 7.5 Gini points. When excluding the three middle-income countries in the sample (Namibia, South Africa and Zambia), the average impact of fiscal policy on inequality reduction stands at 3.3 Gini points.

More troubling is that fiscal policy in Côte d’Ivoire fails to protect poor households: the same taxes and transfers which reduce inequality turn most poor households into net cash payers into the fiscal system. In other words, the electricity subsidies received by poor households are smaller (in magnitude) than total taxes paid, leaving poor households worse off in cash terms. When taxes and transfers are added to pre-fiscal incomes, Côte d’Ivoire’s poverty headcount ratio increases by approximately 2.4 percentage points. This is approximately average in comparison with the benchmark countries discussed above, but calls for immediate action in order to avoid further impoverishment of the worst off in Côte d’Ivoire.

In Côte d’Ivoire, all tax instruments except the alcohol excise, as well as all expenditure instruments except for vocational or tertiary education and electricity subsidies, are inequality reducing. The largest marginal contributions to inequality reduction are produced by preschool and primary education spending and personal income taxes. Côte d’Ivoire’s fiscal system does not achieve inequality reduction through the distribution of cash or near-cash transfers (in contrast to in-kind transfers of publicly provided services).
Our comparison of how effective fiscal instruments in Côte d’Ivoire are at reducing inequality or poverty found that Côte d’Ivoire’s effectiveness scores rank at or near the bottom of the range of the scores for the Sub-Saharan African country sample mentioned above.

The rest of this report is organised as follows: Section 2 will provide an overview of the main transfers and taxes in Côte d’Ivoire, Section 3 will explain the methodology behind the assessment and a description of the data sources, Section 4 will provide an overview of the main findings from the Côte d’Ivoire assessment together with international benchmark comparisons, and Section 5 will conclude and describe the implications the results have for policy in Côte d’Ivoire.
2. Social spending and taxation in Côte d’Ivoire

Social spending and transfers

Social spending in Côte d’Ivoire can be divided into three categories: in-kind transfers, direct transfers and indirect subsidies.

Table 2.1 provides a snapshot of expenditures in fiscal year 2015, including an overview of the fiscal expenditures included in this analysis. Defence spending, security, and the production and administration of law and order, as well as infrastructure, are not covered, while most of the social protection portfolio is incorporated.

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>LCU (billion)</th>
<th>GDP (%)</th>
<th>Included in analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total expenditure</td>
<td>4 924.1</td>
<td>25.1</td>
<td></td>
</tr>
<tr>
<td>Social spending</td>
<td>298.4</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Social protection</td>
<td>96.1</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Social assistance of which</td>
<td>9.5</td>
<td>0.05</td>
<td>No</td>
</tr>
<tr>
<td>Un/conditional cash transfers</td>
<td>7.3</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Non-contributory pensions</td>
<td>2.1</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Near-cash transfers</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Social insurance of which</td>
<td>--</td>
<td>--</td>
<td>No</td>
</tr>
<tr>
<td>Old-age pension</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Education of which</td>
<td>212.1</td>
<td>1.1</td>
<td>Yes</td>
</tr>
<tr>
<td>Preschool</td>
<td>33.7</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>56.8</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Vocational</td>
<td>14.5</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>Tertiary</td>
<td>66.6</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>Health of which</td>
<td>21.1</td>
<td>0.1</td>
<td>Yes</td>
</tr>
<tr>
<td>Contributory</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Non-contributory</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Housing and urban</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Subsidies of which</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy of which</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>69.8</td>
<td>0.4</td>
<td>Yes</td>
</tr>
<tr>
<td>Fuel</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Agricultural inputs</td>
<td>7.0</td>
<td>0.04</td>
<td>No</td>
</tr>
<tr>
<td>Water</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Infrastructure of which</td>
<td>Expenditure (LCU)</td>
<td>Exchange Rate</td>
<td>Available</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------</td>
<td>---------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Water and sanitation</td>
<td>186.9</td>
<td>0.3</td>
<td>No</td>
</tr>
<tr>
<td>Rural electrification</td>
<td>23.9</td>
<td>1.0</td>
<td>No</td>
</tr>
<tr>
<td>Rural roads</td>
<td>200.4</td>
<td>1.0</td>
<td>No</td>
</tr>
<tr>
<td>Defence; public order; safety spending</td>
<td>1 318.2</td>
<td>6.7</td>
<td>No</td>
</tr>
</tbody>
</table>

**Note:** LCU are Local Currency Units. Expenditures (and revenues) included in Côte d’Ivoire’s CEQ Institute assessment may not be fully allocated within the ENV 2015 for various reasons; see Section 3 for more detail on the allocative methods and assumptions.


**Direct transfers**

While Côte d’Ivoire does support direct transfers to specific populations – for example, to orphans and disabled populations – these direct transfers are nearly negligible in terms of both coverage and spending. The largest social protection programmes are contributory programmes, i.e. pensions and other related, limited social insurance schemes falling under the ational pensions fund for formal private-sector workers (Caisse Nationale de Prévoyance Sociale, CNPS) and the Fund for Civil Servants (Caisse G énérale de Retraite des Agents de l’État, CGRAE). The pension funds have very limited coverage, at about 10% of the population as of 2014, benefiting only civil servant workers and workers in the formal private sector (World Bank, 2015[5]). Social insurance funds are thus financed mainly through employer/employee contributions and not from general revenues.

**In-kind transfers**

**Education**

Preschool – which is not mandatory – lasts three years, and is followed by six years of primary school and seven years of general secondary education; tertiary education is a possibility for those who complete a secondary-level diploma. There is also a vocational education track, as well as literacy and adult education programmes. Primary education is mandatory and completion leads to education credentials. Private schools receive about 35% of enrolment in general secondary education.

Public expenditure on education is predominantly for the production of education services themselves (teacher and administrator salaries, capital costs of new and older buildings, curriculum support, etc.).

**Health**

While privately provided healthcare services are an option in Côte d’Ivoire, the majority of patients use, and the majority of healthcare services are provided by, the public healthcare service delivery system. The public system comprises first-contact healthcare centres (clinics) in both urban and rural areas, primary care centres (general and specialised hospitals), and secondary health institutions (university hospitals and cardiology institutions).

Côte d’Ivoire briefly provided healthcare free of cost to all citizens in 2011; however, the resulting demand-side shock to the healthcare delivery system and to the government’s fiscal position resulted in the termination of this programme. In 2015, not all publicly
provided healthcare services were provided free of cost to all citizens, although mothers and their children still benefited from reduced or zero fees for some services and products.

**Energy subsidies**

Côte d’Ivoire administers prices for electricity, which means that electricity tariffs in 2015 were not linked to inflation or the real costs of energy, resulting in realised revenue for electricity providers being less than the revenue the utility would collect were it operated with cost-recovery tariffs based on efficient operations (i.e. operations with normal line losses and full collection of bills). These “hidden costs” are financed by the fiscal authority and are equivalent to subsidies to the electricity sector, and it appears that policy makers in Côte d’Ivoire may not be willing to adopt market-based pricing policies, partly because of concerns related to access and affordability: a 2016 electricity tariff increase was cancelled because of a strong negative reaction from the general public.

**Revenues**

Table 2.2 provides a snapshot of the sources of public revenue in Côte d’Ivoire in 2015. Côte d’Ivoire’s tax-to-GDP ratio in 2015 amounted to 17.5% (OECD/ATAF/AUC, 2018[1]), which is lower than the 21-country African average of 18.2% (OECD/ATAF/AUC, 2018[i]). Revenue from taxes makes up approximately 84% of all revenues and grants (OECD/ATAF/AUC, 2018[i]).

In 2000 and again in 2011, the Côte d’Ivoire tax-to-GDP ratio stood at 15.3%, indicating only marginal cumulative increases over the 15-year period ending in 2015. Meanwhile, the African average tax shares in 2000 and 2011 were 13.1% and 16.8% respectively, indicating steady growth during the 15-year period ending in 2015.

Direct taxes alone provide approximately 2.1% of GDP in fiscal revenues (Table 2.2) (OECD/ATAF/AUC, 2018[i]). Personal income taxes represent about 0.3% of all revenues, while corporate income (and other) taxes represent about 11% of all revenues. We did not attempt to allocate corporate income taxes to individuals and households appearing in the Enquête Niveau de Vie des Ménages (ENV), as we lack enterprise ownership records and characteristics and we were uncertain whether the burden of the corporate taxation instruments in Côte d’Ivoire falls mainly on labour, capital or other factors.

Indirect taxes provided approximately 11% of GDP in 2015, or about five times the amount provided by direct taxes (OECD/ATAF/AUC, 2018[i]). Value Added Tax (VAT), excise duties, and export and import duties accounted for approximately 20%, 7%, and 29% of all tax revenues in 2015, respectively. We allocated VAT to households based on their purchases of goods and services that are part of the VAT system. Customs duties are not allocated, as we do not have information on purchases of imported goods at the household level, nor do we know the structure of enterprises using imported inputs.

Table 2.2. Government revenues (2015)

<table>
<thead>
<tr>
<th>Revenues (2015)</th>
<th>LCU (billion)</th>
<th>GDP (%)</th>
<th>Included in analysis?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue and grants</td>
<td>Total revenue and grants</td>
<td>Revenue</td>
<td>Tax revenue</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>--------------------------</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>Total revenue and grants</td>
<td>4 092.6</td>
<td>3 810.4</td>
<td>3 437.7</td>
</tr>
<tr>
<td>Revenue</td>
<td>3 810.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax revenue</td>
<td>3 437.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct taxes of which</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal income tax</td>
<td>10.0</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Corporate income tax</td>
<td>375.9</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Payroll tax</td>
<td>360.7</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>Taxes on property</td>
<td>0.2</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Indirect taxes of which</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VAT</td>
<td>680.1</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>Sales tax</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Excise</td>
<td>243.2</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>Customs duties</td>
<td>510.2</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Taxes on exports</td>
<td>473.3</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Other indirect taxes</td>
<td>162.2</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Other taxes</td>
<td>21.0</td>
<td>0.1</td>
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<tr>
<td>Non-tax revenue</td>
<td>372.6</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Mobile telephony licensing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User fees, fines, charges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dividends/interest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rents/royalties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other non-tax revenues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Security contributions</td>
<td>383.5</td>
<td>2.0</td>
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</tr>
<tr>
<td>Other revenues</td>
<td>110.1</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Grants</td>
<td>282.2</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Revenue collections (and expenditures) included in Côte d’Ivoire’s CEQ Institute assessment may not be fully allocated within the ENV 2015 for various reasons; see Section 3 for more detail on the allocative methods and assumptions.

3. Methodology and data sources

The CEQ Institute assessment takes specific fiscal policy elements, programmes, expenditures or revenue collections and allocates them to individuals and households appearing in a micro-level socio-economic survey.

Once the allocations are made, analysis is carried out in order to calculate different measures of poverty and impoverishment, inequality and progressiveness, and the amount of redistribution accomplished on the measures of income – or “income concepts” – that exclude (“pre-fiscal”) and include (“post-fiscal”) these fiscal policy elements. Figure 3.1 summarises the construction of these income concepts.

Figure 3.1. CEQ Institute income concepts and fiscal policy elements

Microdata

The analysis makes use of the Enquête Niveau de Vie des Ménages (ENV). The ENV 2015 is a household survey that collects information on household composition, household management, health, education, assets, consumption, income, housing condition and other subjects. The sample is nationally representative of households in Côte d’Ivoire, based on the 2014 Census (Recensement Général de la Population et de l’Habitat, or RGPH2014). The ENV 2015 uses stratified sampling in order to ensure representation of the population in three groups: administrative region and location (urban/rural), Abidjan, and location (urban/rural) across the whole of Côte d’Ivoire.

Construction of income concepts in Côte d’Ivoire

Disposable income: we assumed that total consumption expenditures – including the implied value of any auto-production/auto-consumption – were equal to the CEQ Institute’s disposable income concept. We then worked “backwards” from disposable income in order to calculate net market income, net market income plus pensions, and market income, as follows:

- Net market income: as there are no direct transfers that we allocated (see below), net market income is equal to disposable income.
- Market income plus pensions: personal income taxes (PIT) paid are added to net market income in order to arrive at market income plus pensions.
- Market income: pension income is subtracted from, and pension contributions are added to, market income plus pensions in order to arrive at market income. We were unable to allocate either pension income or contributions (see below), so market income is not estimated in the Côte d’Ivoire CEQ Institute assessment.

We worked “forwards” from disposable income in order to calculate consumable income and final income, as follows:

- Consumable income: electricity subsidies are added to, and indirect taxes – namely VAT and excise taxes – are subtracted from, disposable income.
- Final income: in-kind health and education benefits are added to consumable income.

Construction of fiscal instruments in Côte d’Ivoire

The following section briefly describes the allocation of fiscal instruments to individuals and households in Côte d’Ivoire. For certain fiscal instruments, we allocated a scaled revenue or expenditure amount from the fiscal data. The scaling factor is calculated as the ratio of consumption in the survey to consumption in the national accounts.

Personal income tax

Taxpayers are not directly identified in the survey, nor are amounts of tax paid. We simulated taxpayers in the survey based on the characteristics of an individual’s place of work as well as the characteristics of an individual’s employment contract in order to create
an index of labour formality. Those individuals with higher scores on the formality index are imputed to be taxpayers.\textsuperscript{2}

We then used the statutory PIT rate schedule combined with the cumulative income amounts in the ENV in order to generate an estimate of the PIT paid by each household in which at least one imputed taxpayer is living.\textsuperscript{3}

\textbf{Pension income and contributions}

Pension recipients can be identified in the survey as those who report receiving a monthly pension amount greater than zero; however, we cannot be certain that this question in the ENV does not capture individuals who are receiving payments from private pensions or privately arranged savings instruments that generate pension-like income streams (annuities, for example). Those who make pension contributions can be identified as those who are “declared to the pension fund”. We were unable to acquire information on the total pension benefits paid out from, nor the total pension contributions received by, the public pension system in fiscal year 2014, so we did not attempt to allocate either pension expenditures or pension receipts.

\textbf{VAT and fuel, alcohol and tobacco excise taxes}

We could not directly identify VAT or excise tax amounts paid, so instead we imputed the share of each purchased item’s value that is a VAT or excise charge. We created categories of goods in the consumption module which, according to tax statutes, attract the tax in question.

We created an imputed effective tax rate as follows: we calculated the ratio of revenues collected (per indirect tax) in the survey according to household final consumption expenditure in the national accounts and set it as equal to the ratio of revenues collected from households (per tax) to cumulative survey consumption expenditure.

For VAT, we created within the consumption expenditure records a measure of standard-rated consumption expenditure, and applied our imputed effective VAT rate to those expenditures only. For exempt goods, we assume that 50\% of the good is made up of intermediate production, and we applied our imputed effective VAT rate to that portion of the good. We decided which items were standard-rated or exempt according to policy and statutes. We calculated the share of auto-production from each consumption aggregate, and excluded that portion from the application of the effective VAT rate.

We then determined the share of tax in the total expenditure value of the taxed good (or good category). From this share we determined what effective rate of taxation would, when applied to the value of the good and net of the indirect tax paid, return the actual sales value of the good as recorded by households in the survey.

The effective rate, or the average actual rate, so calculated allows us to take care not to allocate indirect taxes to purchases of goods or services, which are exempt from the tax. We also implicitly excluded any informal purchases that are not included in the sales over which an indirect tax is collected. However, because we did not directly observe informal purchases, the reduction in taxes collected (and therefore the reduction in taxes allocated to households) due to informal purchases or weak tax administration is allocated to all households purchasing the good (or category of goods) which is taxed.
Electricity subsidies

We allocated Côte d'Ivoire electricity subsidy according to (value) shares of electricity purchased in the ENV. That is, those households who consumed more electricity (in value terms) in the ENV were assumed to capture more of the electricity subsidy either directly (through electricity consumption) or indirectly (through consumption of goods and services) using subsidised electricity as a production input.

In-kind transfers

Expenditures on education or health are allocated to those households where at least one member utilises the public education or public healthcare service system, respectively. An average regional subsidy amount is allocated to students at each level of education (preschool, primary, basic, secondary, vocational and tertiary). The subsidy is calculated by dividing scaled in-kind regional spending by the total number of regional users in order to get a “per-student” or “per-patient” subsidy; this uniform regional subsidy amount is then allocated to all directly identified users.
4. Results

Redistributive effects of Côte d’Ivoire’s fiscal system

Côte d’Ivoire’s fiscal system reduces inequality. Figure 4.1 summarises the inequality of different income measures and demonstrates that inequality, as measured by the Gini coefficient, is reduced between market income plus pensions (henceforth referred to as “market income”) and post-fiscal final income. The reduction in inequality is approximately 1 Gini point (slightly more in urban areas, and slightly less in rural areas). Overall, the Gini coefficient falls from 0.403 at market income to 0.393 at final income.

![Figure 4.1. Fiscal policy’s impact on inequality (2015)](image)

Source: Authors’ elaboration for Côte d’Ivoire based on ENV 2015 and budget figures.

The redistributive effect of fiscal policy in Côte d’Ivoire is the lowest when compared with other countries in the region (Figure 4.2). This may be primarily due to relatively low direct transfer spending: Côte d’Ivoire has no direct-transfer programme that is national in coverage and which provides meaningful benefits to all poor and vulnerable households. If we exclude the highly unequal Southern African countries (Namibia, South Africa and Zambia) where fiscal policy reduces inequality by 5 Gini points or more, Côte d’Ivoire has an approximately average level of pre-fiscal income inequality among the remaining countries, with a fiscal policy impact on inequality that is approximately half that of Mali, the next least-effective country.
Fiscal policy in Côte d’Ivoire induces poverty. As discussed in Lustig (2018), in order to measure the impact of fiscal policy on poverty, the indicator of choice – usually the poverty headcount ratio or the poverty gap – is calculated for market income, disposable income and consumable income. Figure 4.3 indicates that in the absence of the taxes and expenditures in this CEQ Institute assessment, the poverty headcount ratio at pre-fiscal income (market income including pensions) would be approximately 46%. At consumable income, after all taxes (direct and consumption taxes) and cash or near-cash transfers and subsidies have been accounted for, the estimated poverty headcount ratio rises to 48.5%. The percentage point increase in the poverty headcount ratio is approximately the same in urban and rural areas.
Figure 4.3. Fiscal policy’s impact on the poverty headcount ratio

![Graph showing the impact of fiscal policy on poverty headcount ratio]

Note: Poverty headcount ratio is calculated based on the national definition of poverty. Source: Authors’ elaboration for Côte d’Ivoire based on ENV 2015.

In comparison with other African countries, the increase in the poverty headcount ratio (at the 2011 PPP International USD 1.90-per-day poverty line) in Côte d’Ivoire is approximately average (Figure 4.4). Ethiopia, Mali, Senegal, Tanzania and Togo all have fiscal policies which produce larger poverty headcount ratio increases while Comoros, Ghana, Namibia, South Africa, Uganda and Zambia all have fiscal policies which produce smaller poverty headcount ratio increases or which produce poverty headcount ratio decreases.

Figure 4.4. Fiscal policy’s impact on the poverty headcount ratio at the 2011 PPP International USD 1.90 poverty line, various countries and years

![Graph showing the fiscal policy impact on poverty headcount ratio across various countries]

Source: Authors’ elaboration for Côte d’Ivoire based on ENV 2015 and budget figures and de la Fuente, Jellema and Lustig (2018).

Côte d’Ivoire’s 2015 fiscal policy reduced inequality slightly and contributed to an increase in the poverty headcount ratio. Figure 4.5 demonstrates why: all individuals expect to pay
more both in direct and (especially) in indirect taxes than they expect to receive in cash benefits. In other words, even the poorest households expect a negative net transfer from fiscal policy, meaning their net cash position is made worse.

**Figure 4.5. Net cash position (in percentage of own market income plus pensions) through consumable income (by market income plus pensions decile)**

![Figure 4.5](image-url)

*Source: Authors’ elaboration for Côte d'Ivoire based on ENV 2015 and budget figures.*

Figure 4.5 also demonstrates why fiscal programmes (on either the expenditure or the revenue side) that are not income targeted often have very little impact on overall inequality. For example, take energy subsidies or VAT in Côte d'Ivoire: VAT (electricity subsidy spending) creates a burden (benefit) for the very poorest households of approximately 2.7% (0.5%) of income, while for the richest households the VAT burden (benefit) is approximately 3.2% (0.5%) of income. The effect is that even though richer households contribute (capture) a far greater share of total VAT revenues (electricity subsidy spending) than poorer households, those contributions (benefits) are approximately the same size relative to the households’ own budgets.

Including the government cost/value of in-kind benefits from expenditures on publicly delivered health and education services improves the net position of the poorest households. When health and education services are valued at the government cost of provision, households in the poorest decile receive benefits worth approximately 4% of their income through accessing those services.
However, when the public provision of services like health and education is offered by different providers or at different levels, it is typical for poorer individuals to access the more basic levels of those services. The simpler the service is to provide, the lower the government’s cost of provision, and the lower the value of the benefit provided via that in-kind service. In Côte d’Ivoire, both hospital-based healthcare services and tertiary-level education are the highest-cost government-provided services.

For example, Figure 4.7 demonstrates that the poorest 20% of households receive a greater share of non-tertiary education spending than tertiary education spending, and they receive a greater share of health spending that clinics use to produce healthcare services than the share of health spending at hospitals. These differential rates of utilisation of public services create a relatively egalitarian distribution of total education spending and a regressive distribution of total health spending: the poorest and richest quintiles in Côte d’Ivoire receive approximately 16% and 20% of all benefits created through education expenditures, and 10% and 30% of all benefits created through health service delivery expenditures, respectively.

Source: Authors’ elaboration for Côte d’Ivoire based on ENV 2015 and budget figures.
Figure 4.7. Education and healthcare spending benefit incidence by quintile

Source: Authors’ elaboration for Côte d’Ivoire based on ENV 2015 and budget figures.

The concentration coefficients in Figure 4.8 provide a summary indication of whether a fiscal instrument is more (or less) equally distributed than income itself.\(^6\) Intuitively, when a single expenditure (or tax) instrument has a concentration coefficient that is smaller (or larger) than the pre-fiscal income Gini coefficient, that instrument potentially reduces inequality.\(^7\) Figure 4.8 indicates that electricity subsidy spending, as well as vocational and tertiary post-secondary education expenditures, are distributed more unequally than income itself. All taxes – including VAT, excises and personal income taxes – are distributed more unequally than income itself, which makes them (as taxes) progressive. Healthcare expenditures (at hospitals or clinics) and expenditures on secondary-level education are more equally distributed than income, but they are not pro-poor: shares of those expenditures are increasing in pre-fiscal income shares. The only benefit in this analysis that is pro-poor, in that shares of the expenditure received fall with pre-fiscal income shares, is pre-school and primary education spending.

Figure 4.8. Concentration coefficients by available instruments, 2015
In order to determine whether a single instrument reduces inequality, we must look at the impact, or effect, of that single instrument in the presence of all the other instruments. These marginal impacts are summarised in Figure 4.9. It is noteworthy that many of the instruments do contribute to inequality reduction, but the impacts for each instrument are quite small. Electricity subsidy spending actually contributes to an increase in inequality.

**Figure 4.9. Impact effectiveness indicator: inequality**

Source: Authors’ elaboration for Côte d’Ivoire based on ENV 2015 and budget figures.

Figure 4.10 presents inequality impact effectiveness indicators for expenditures and taxes. These indicate the size of the actual marginal impact that a fiscal instrument had on inequality relative to its potential maximum impact if the fiscal intervention would have been designed in such a way as to maximise its inequality-reduction impact, keeping the amount collected or spent fixed. The figure presents the range and mean of the inequality impact effectiveness indicator for different classes of instruments in several African countries between 2010 and 2015, as well as the value of the same indicator in Côte d’Ivoire in 2015. Côte d’Ivoire’s inequality impact effectiveness indicators for each class of instrument are below the mean, which provides further confirmation that the impact of fiscal policy on inequality in Côte d’Ivoire is one of the weakest in the region.
Figure 4.10. Inequality impact effectiveness

Source: Authors’ elaboration for Côte d’Ivoire based on ENV 2015 and budget figures.
5. Conclusions

Despite improvements in the macroeconomic environment and sustained strong economic growth since 2012, the living standards for the poorest segments of the Ivorian population remain low. The poverty headcount ratio stood at 46% in 2015, only three percentage points lower than its 2008 level (49%).

This study used an internationally recognised methodology developed by the CEQ Institute to estimate the redistributive impact of tax revenues and expenditures through monetary and in-kind transfers, as well as of subsidies, on household income and inequality.

The findings are twofold. First, fiscal policy is having an equalising effect in Côte d'Ivoire, but the reduction in inequality is minor, especially relative to what other countries in the region have achieved with respect to redistribution and inequality reduction. The addition of in-kind transfers and subsidies to, and the subtraction of direct and indirect taxes from, household income is also having an equalising effect: inequality after these fiscal and social policy elements are taken into account is 1.0 Gini points lower than inequality before.

Second, fiscal and social policies in Côte d'Ivoire fail to protect poor households: the same taxes and transfers which reduce inequality turn most poor households into net cash payers into the fiscal system, thereby further impoverishing them. In other words, the electricity subsidies received by poor households are smaller in magnitude than total taxes paid, leaving poor households worse off in cash terms. When taxes and transfers are added to pre-fiscal incomes, Côte d'Ivoire’s poverty headcount ratio increases by approximately 2.4 percentage points.

Relative to its peers in Sub-Saharan Africa, Côte d'Ivoire very rarely outperforms. For example, electricity subsidy spending in Côte d'Ivoire produces an impact on inequality well below the sample average.

Notes

1 As consumption expenditure is our primary income measure, and as all other income concepts, including market income, are derived from consumption expenditure, we do not create a taxable income concept; other CEQ Institute assessments do produce this income concept when relevant. Creating a taxable income concept requires knowledge of the composition of market income; however, an Ivorian household’s expenditure profile (in the ENV) cannot provide any information on the composition of income. Relatedly, we are unable to comment on the savings or current asset profile of Ivorian households for the same reason: a current consumption expenditure profile does not provide any information on investment spending nor on the returns accruing to any household assets.

2 Specifically, the formality index includes responses to the following questions in the survey: “s’agit-il d’un emploi permanent ou occasionnel?”; “a quel régime fiscal cette unité de production est-elle assujettie?”; “cette entreprise a-t-elle un numéro du contribuable?”; “cette entreprise a-t-elle un registre de commerce?”; “êtes-vous déclaré a la caisse de retraite?”; “cette entreprise délivre-t-elle un bulletin de paie?”; “sous quelle forme êtes-vous rémunérés dans votre emploi principal?” and “Quel type de contrat avez-vous avec l’employeur?”
3 In order to estimate taxes due, we replicated the statutory marginal income tax rate schedule for total income tax (which is composed of three different tax contributions) within the survey by placing taxpaying individuals into indicative tax brackets and applying the indicative marginal rate on that bracket such that the total income tax collected from taxpaying individuals in the survey, divided by total disposable income in the survey, is equivalent to total income tax revenues (according to budgetary or administrative documents) divided by total consumption expenditure by households and non-profit institutions serving households (NPISH) in national accounts data.

4 A CEQ Institute assessment usually estimates two “extreme” scenarios: contributory pensions as pure deferred or replacement income, or as a pure government transfer. In the first scenario, income from contributory pensions is counted as part of the pre-fiscal income by which households are ranked, while in the latter it is not counted. For more details, see (Lustig, 2018[8]). Information regarding total pension payouts in 2015 was not available, and the ENV 2015 survey data did not allow us to identify public contributory pension recipients; for this and other contextual reasons, the 2015 Côte d’Ivoire CEQ Institute assessment includes only the “pensions as deferred income” scenario.

5 Purchasing Power Parity

6 A concentration coefficient is calculated in a way analogous to the Gini coefficient, but with households ordered or ranked according to pre-benefit or pre-tax (or pre-fiscal) income. That is, if \( p \) is the cumulative proportion of the total population when individuals are ordered according to increasing pre-fiscal income values, and \( C(p) \) is the concentration curve – that is, the cumulative proportion of total programme benefits (of a particular programme or aggregate category) received by the poorest \( p \) percentage of the population – then the concentration coefficient of that programme or category is defined as the integration (from 0 to 1) of \( 2^{*} \int (p-C(p))dp \).

7 Lambert (2001[9]) shows that in a many-fiscal-instrument world, a concentration coefficient that is smaller (or larger) than the pre-fiscal income Gini coefficient is neither necessary nor sufficient for an expenditure (or tax) to have an inequality-reducing impact. For that reason, a CEQ Institute assessment also generates “marginal contributions” to inequality or poverty reduction for each fiscal instrument allocated. The marginal contribution is the impact of the instrument in question on inequality reduction in the presence of all other instruments considered.
References


