INTERNATIONAL MONETARY FUND

DEMOCRATIC REPUBLIC OF SÃO TOMÉ AND PRÍNCIPE

SELECTED ISSUES

April 2022

This Selected Issues paper on the Democratic Republic of São Tomé and Príncipe was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on March 14, 2022.

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FIGURES

HUMAN CAPITAL AND INFRASTRUCTURE FINANCING GAP[1]

This Selected Issues Paper (SIP) uses the dynamic macroeconomic Sustainable Development Goals (SDGs) financing framework to estimate the infrastructure financing gap in São Tomé and Príncipe (STP). Human capital and infrastructure investments are key strategic priorities of STP's National Development Plans.[2] We will: i) estimate STP's human capital and infrastructure gap in 2030 based on the authorities' current policies; ii) estimate how active policies—improved domestic revenue mobilization, enhanced spending efficiency, and efforts to attract private investment—could reduce this infrastructure gap; and iii) determine the residual financing to be sought from STP's development partners in grant financing.

A. Introduction

1.   Promoting strong and inclusive growth in São Tomé and Príncipe (STP) would require narrowing the large human capital and infrastructure financing gap. While STP fares slightly better than the average sub-Saharan African (SSA) countries on some infrastructure and social indicators, ensuring universal access to basic services remains a challenge. For instance, close to 40 percent of the population do not have access to electricity and more than 30 percent do not have access to drinking water.

2.   The COVID-19 pandemic risks delaying STP's reaching the SDGs. The pandemic has severely impacted STP's main economic activities (leisure and hospitality sectors), exacerbating pre-existing inequalities and social vulnerabilities. To avoid lasting economic scarring from COVID-19, the authorities have formulated a two-year National Development Plan (NDP) focused on infrastructure and social spending. The cost of the NDP is estimated at US$84.3 million (15.8 percent of GDP), with an identified financing gap of US$57 million (10.7 percent of GDP). To bolster the credibility of the NDP framework, it needs to be rooted in a sustainable medium-term framework, backed by feasible revenue and spending measures.[3]

3.   This SIP aims to inform the authorities policy considerations on meeting SDGs. The paper is organized as follows: section II presents stylized facts; section III presents STP's human capital and infrastructure financing needs based on the authorities' current policies; section IV estimates how active policies—improved domestic revenue mobilization, enhanced spending efficiency, and efforts to attract private investment—could reduce the financing gap, Section V

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[1] Prepared by Koffie Nassar. The author would like to thank Laurent Kemoe and David Baldini for their guidance and Chie Aoyagi and Victor Duarte Lledo for constructive comments.

[2] Building infrastructure is a key strategic priority of STP's National Development Plan (NDP) 2020-24. The COVID-19 pandemic has caused delays in implementing the NDP. As a result, an interim NDP has been prepared to address the COVID-19 pandemic during 2020-2022.

[3] The IMF's Fiscal Monitor (October 2021) demonstrates that medium-term framework credibility can lower financing costs for countries and increase fiscal space in the near term.

presents simulation results to determine the residual financing to be sought from STP's development partners in the form of grants, and Section VI discusses policy implications.

4. **We use the dynamic macroeconomic SDG financing framework developed by Benedek et al. (2021) to estimate the infrastructure financing gap** (see Annex 1). It is a long-term, macroeconomically consistent, dynamic framework in which output growth is driven by investment in physical and human capital. Like Benedek et al. (2021), we use this model to (i) assess the role of the public and private sectors to generate the funding to achieve the SDGs in five sectors: education and health (human capital sectors), and electricity, roads, and water and sanitation (infrastructure sectors); and (ii) assess various financing scenarios to close the SDGs financing gap. In this context, active policies are estimated as follows:

- *Improved domestic revenue mobilization (DRM)*. To assess the extent to which enhanced tax policy and revenue administration measures could increase tax revenues. We estimate STP's tax effort (i.e., the level of tax revenue collected relative to the frontier) and derive the tax potential (i.e., how much more revenue can be collected at full potential), using Stochastic Frontier (SF) models (see Annex 2).

- *Improved public spending efficiency*. We use SF models to estimate the efficiency of public spending in the sectors captured by the SDG financing framework. It estimates models for public spending on health, education, and investment.

- *Leveraging private sector participation*. We assume that the government takes measures to improve the regulatory framework and business environment, leading to one percentage point increase in private sector financing of SDGs.

- *Mobilizing grant financing*. With these active policies, STP would still need additional financial support from its international development partners to close the human capital and infrastructure financing gap.

B. Stylized Facts

5. **São Tomé and Príncipe is a small, remote, island state economy, with a population of about 200,000, of which about a third lives in extreme poverty.** Subsistence agriculture and fisheries are core sectors of the economy. The key exports are cocoa products and tourism services, and the country imports food, fuel, and other essentials. With weak tax revenues, grants remain an important source of financing for economic and social development. Obsolete fossil fuel-based electricity generation and loss-making state-owned energy enterprises (SOEs) hinder the efficient functioning of the economy and pose social challenges.[4] Strong capacity building efforts are critical to strengthen institutions and support reforms.

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[4] See Selected Issues Paper: Assessing Fiscal Risks and Implications for the Energy Sector.

6.   STP's GDP growth rate has declined steadily during the last fifteen years (Figure 1). The growth performance reflects weaker structural and trade policies relative to peer countries. While access to electricity and the quality of trade and transport-related infrastructure in STP is above the SSA average (Figure 2), the quality of education provision is lower with a shortage of trained teachers. Both tax revenue and official development assistance (ODA) have declined steadily over the last decade (Text Figure 1) narrowing the fiscal space for social and development spending.

Text Figure 1. Tax Revenue and ODA Inflows
(In percent of GDP)

Tax revenue has declined over time …   *and so has official development assistance (ODA) inflows.*

Source: STP authorities.

Source : STP authorities.
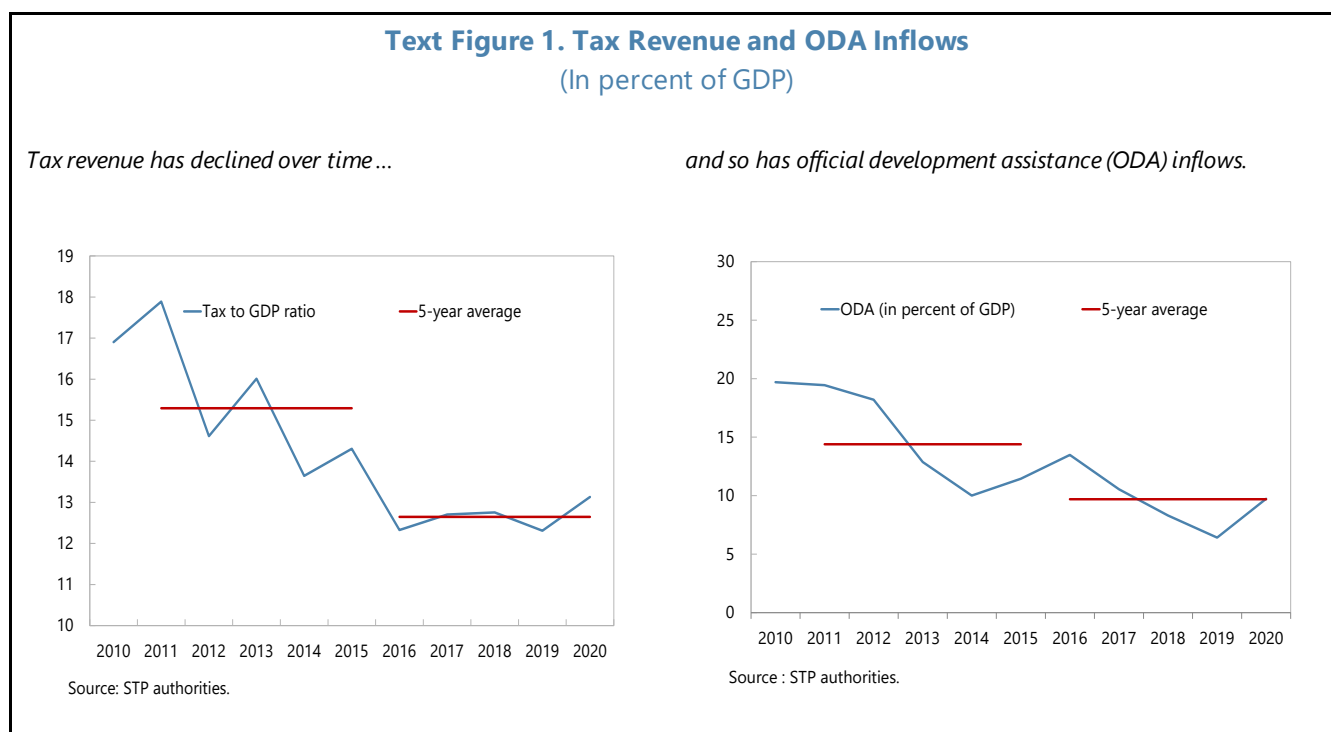
C.   Human Capital and Infrastructure Financing Needs

7.   STP needs about 14 percent of GDP in additional annual investment to achieve the human capital and infrastructure SDGs by 2030. Considering the country's investment spending efficiency, the initial capital stock, and the capital depreciation rate, to meet its SDGs by 2030, STP needs additional annual investment of 2.7 percent of GDP in health, 3.5 percent of GDP in education, 1.3 percent of GDP in electricity, 2.0 percent of GDP in water and sanitation, and 4.7 percent of GDP in infrastructure (e.g., roads).[5]

8.   However, São Tomé and Príncipe's tax revenue performance is not sufficient to meet large social and development needs. To this end, implementing the VAT in 2022 will help to generate domestic resources to support growth-enhancing social and infrastructure development programs. These efforts need to be complemented by other active policies, including improvements in public investment efficiency.

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[5] These estimated costs are based on benchmarking of STP with its comparison group and an extrapolation from exercises conducted in other countries. Estimates are in percent of 2030 GDP.

9.   The authorities recognize the need to mobilize additional domestic revenues to finance STP's social and development goals. Their strategy is guided by IMF Technical Assistance (TA) on tax policies and revenue administration with a focus on: (i) implementing VAT by end 2022 (preparations are at an advanced stage); (ii) improving tax compliance (boosting registration, intensifying the use of technology, and improving management and strategic planning); (iii) adopting modern compliance risk management practices, including audit programs that make use of information from third parties; and (iv) overhauling of the current performance monitoring framework, including key performance indicators and a rewards program.

D.   Scenarios for Financing the Infrastructure Gap

Domestic Revenue Mobilization

10.   STP's estimated tax effort is more than 30 percent below the frontier. To assess the extent to which enhanced tax policy and administration could increase tax revenue, we estimate STP's tax effort (i.e., the gap between the level of tax revenue collected and the frontier) and derive its tax potential (i.e., how much more can be collected if STP reaches its full potential), using Stochastic Frontier (SF) models (Text Table 1).

11.   The tax revenue-to-GDP ratio could increase by up to 6.6 percentage points to reach the frontier. With appropriate tax policy and administration measures, STP can increase its tax revenue-to-GDP ratio from the current level of 13 percent to 19 percent. In the SDG financing simulations, we assess the impact of increasing tax collection between 2023 and 2025 by the maximum tax potential (i.e., 2 percentage points per year). It is expected that the VAT would generate 4 percent of GDP, if implemented with a 15 percent rate and limited exemptions.

Text Table 1. Sao Tome and Principe: Tax Effort and Tax Potential				
	Tax Effort Range (%)		Tax Potential Rang (% of GDP)	
	Min	Max	Min	Max
Total (Model Aggregation)	**65%**	**69%**	**5.6**	**6.6**
Goods and Services Tax Model	34%	38%	3.5	4.1
Trade Tax Model	77%	81%	1.4	1.7
Income Tax Model	85%	87%	0.6	0.8
Sources: STP authorities; and Fund staff estimates.				

Public Spending Efficiency

12.   Improving efficiency of public spending could help to narrow the infrastructure gap. Our analysis uses SF models to estimate the efficiency of public spending in the sectors captured by the SDG financing framework. We estimate three models for public spending on health, education, and investment. The estimated efficiency parameters are fed into the SDG financing model and

simulations are made to assess the impact of increasing public spending efficiency on the SDG financing gap as well as on the timing of achievement of the SDGs.

13.   STP has ample room to improve the efficiency of public spending, especially on investment projects (Text Table 2). STP appears to be close to the frontier when it comes to heath spending efficiency, but educational outcomes could be improved by about 4 percent with the same amount of public education spending, given the country's initial conditions. Furthermore, STP could save about 14 percent of GDP on public investment spending.

Text Table 2. Sao Tome and Principe: Public Spending Efficiency and Potential Savings				
	Efficiency of Public Spending (%)		Potential Savings (% of GDP)	
	Min	Max	Min	Max
Investment	86%	92%	14.0	14.0
Education spending	86%	93%	3.7	3.7
Health spending	97%	97%	2.7	2.7
Sources: STP authorities; and Fund staff estimates.				

Private Sector Participation

14.   Financing could also be leveraged from fostering private sector participation to close the infrastructure gap. This could be done through public private partnerships and/or by enhancing the clarity and transparency of the regulatory and legal frameworks to improve the business environment. To this end, governance would need to be strengthened further to remove bottlenecks that hinder the development of private sector activities. Against this background, we analyze a scenario which assumes that the government takes measures to improve the business environment, leading to an additional one percentage point increase in private sector financing of SDGs.

E.   Simulation Results

15.   Active policies would help narrow the human capital and infrastructure financing gap. In the baseline scenario, without active policies and additional ODA financing, STP would not meet the human capital and infrastructure SDGs before 2051 (Text Table 3). To achieve the MDGs by 2030, STP would need about 14 percent of GDP in additional investment per year:

- On the one hand, taking measures that increase tax collection by 2 percentage points of GDP each year between 2023 and 2025 lowers the additional infrastructure investment need per year to 9.4 percent of GDP to achieve the MDGs by 2030.

- On the other hand, boosting spending efficiency to the frontier for investment, education, and health, lowers the additional investment needs to 13.3 percent of GDP. This scenario leads to a significant improvement in the debt-to-GDP ratio in 2030 (by 3.8 percentage points).

- Together, revenue and spending efficiency measures could cover more than 40 percent of the SDG financing needs.

- Gradually increasing private sector investment by one percentage point by 2023 also helps reduce the human capital and infrastructure financing gap. Under this scenario, the annual investment needs to close the gap by 2030 is lowered by 0.8 percentage points of GDP.

- Altogether, active policies could reduce the additional annual investment needs to 7.7 percent of GDP.

16.   Even with active policies, STP would need support from international development partners to close its human capital and infrastructure financing gap by 2030. Additional grants needed from development partners would amount to 7.7 percent of GDP per year if all active policies are implemented as described above. Without this support and if STP authorities commit to closing the SDG gaps by 2030, the alternative would be incurring public debt to invest in infrastructure. In the extreme scenario in which no policy action is taken, the government would need to increase debt by at least 14 percent of GDP per year between 2022 and 2030, which would lead to a significant increase in public debt, relative to the baseline scenario. However, this option is difficult to envisage given the fact that fiscal space is currently limited and public debt is in distress.

Text Table 3. Sao Tome and Principe: Dynamic Infrastructure Financing Framework Scenarios (in percent of GDP)					
Scenarios	Infrastructure SDG targets met	Additional grants per year	Residual infrastructure gap in 2030	Additional investment need per year	Public debt in 2030
Baseline settings	2051[+]	0.0	62.7	0.0	56.8
Baseline settings	2030	0.0	0.0	14.0	53.2
Domestic revenue mobilizat	2030	0.0	0.0	9.4	53.7
Increased spending efficienc	2030	0.0	0.0	13.3	49.4
Combined active fiscal polic	2030	0.0	0.0	8.6	49.9
Private sector participation	2030	0.0	0.0	13.2	52.9
Active policies without gran	2030	0.0	0.0	7.7	49.8
Active policies plus grants	2030	7.7	0.0	0.0	49.8
Source: Fund staff estimates.					

F.   Policy Implications

17.   STPs SDG financing needs are large. We estimate that, under current policies, the amount of investment spending needed to achieve the human capital and infrastructure SDG targets in 2030 amounts to about 63 percent of GDP. Considering the country's investment spending efficiency, the
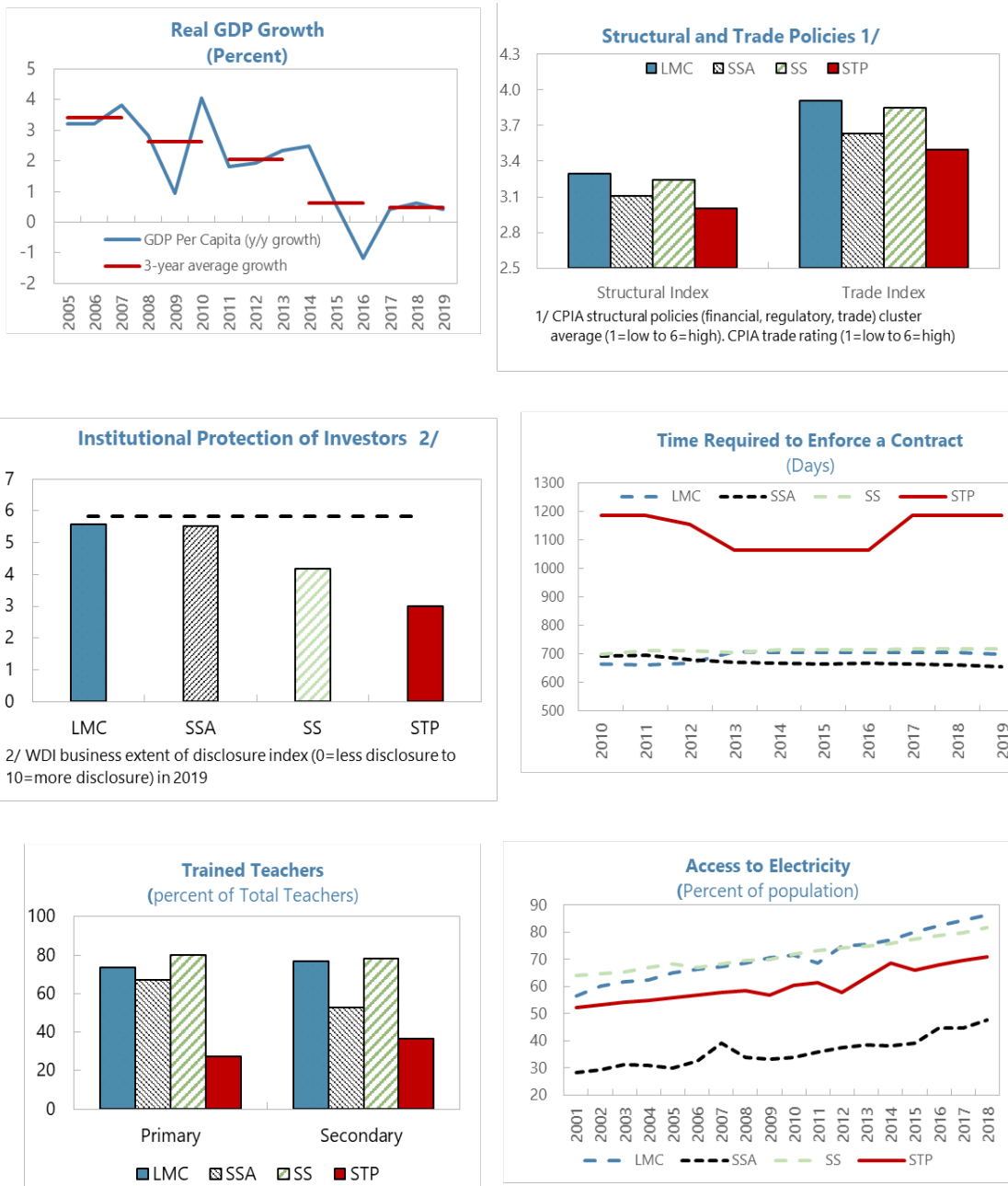
initial capital stock, and the capital depreciation rate, this estimate translates into an average additional annual investment need of about 14 percent of GDP between 2021 and 2030.

18.   STP needs strong policies to meet its SDGs Our estimates suggests that, out of the annual additional infrastructure financing need of 14 percent of GDP, enhancing domestic revenue mobilization could cover 4.6 percent of GDP, and strengthening spending efficiency and private sector involvement could each cover about 1 percent of GDP. Still, STP's SDG needs (14 percent of GDP per year) would far exceed potential domestic public and private resources (6.3 percent of GDP per year), suggesting that development partners may have to contribute to financing the residual human capital and infrastructure investment gap (7.7 percent of GDP).

19.   The authorities' strong efforts could focus on a combination of domestic revenue mobilization, higher public spending efficiency, favorable environment for private sector financing, and collaboration with development partners:

- *Improve revenue mobilization.* Implement the VAT in 2022 as scheduled, with a 15 percent rate and limited exemptions. This would broaden the tax base and achieve a tax-to-GDP ratio of 20 percent, in line with best-performing peer countries. Increasing the tax-to-GDP ratio by 6 percentage points in the medium term is an ambitious but achievable aspiration for STP. In general, an efficient VAT would also boost the buoyancy of other taxes.

- *Improve spending efficiency.* Strengthening institutions governing project appraisal, selection and management would be important to enhance the effectiveness of spending and reduce resources required to achieve the SDGs.

- *Enable private investment.* Strengthen institutional frameworks to enhance the clarity and transparency of the regulatory and legal frameworks. Boosting private finance to bridge the SDG financing gap would increase tax revenues, bring efficiency gains, and enhance risk sharing between the public and private sectors.

- *Seek an increase in ODA financing.* Closing the residual human capital and infrastructure financing gaps would require an increase in ODA from the current level of about 5.5 percent to about 13 percent of GDP per year. This level of grant financing for projects is achievable, given the track record in the early 2010s.

Figure 1. Structural Indicators

Real GDP Growth
(Percent)

Structural and Trade Policies 1/

1/ CPIA structural policies (financial, regulatory, trade) cluster average (1=low to 6=high). CPIA trade rating (1=low to 6=high)

Institutional Protection of Investors 2/

2/ WDI business extent of disclosure index (0=less disclosure to 10=more disclosure) in 2019

Time Required to Enforce a Contract
(Days)

Trained Teachers
(percent of Total Teachers)

Access to Electricity
(Percent of population)

Abbreviations: LMC – Lower-middle income, SSA – Sub-Saharan Africa, SS- Small States (countries with a population of under 1.5 million as classified by the World Bank)

Sources: São Tomé and Príncipe authorities' data, World Economic Outlook and IMF staff estimates

Figure 2. Structural Indicators (concluded)
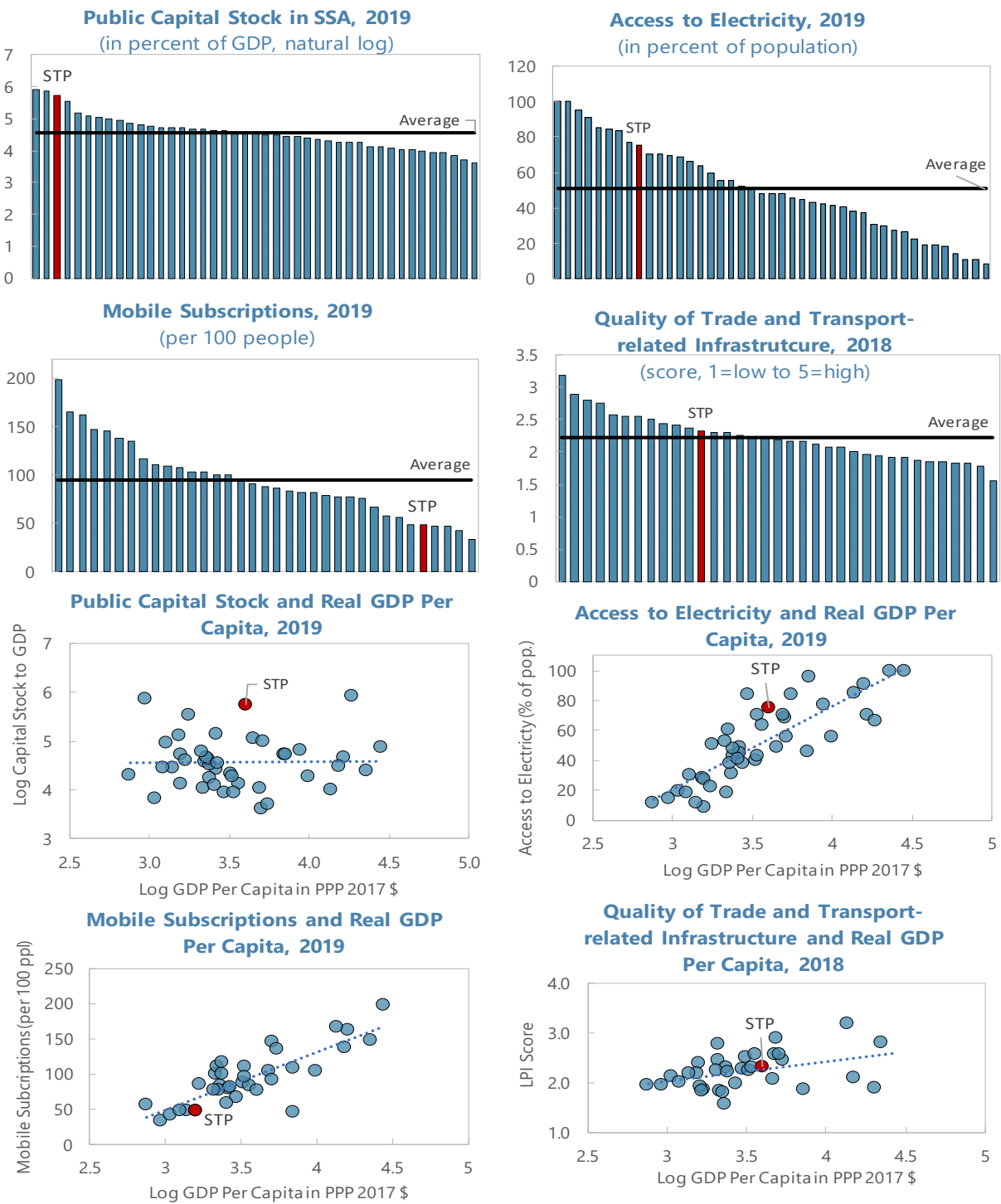
Source: IMF Investment and Capital Stock Database, WB World Development Indicators, WB Logistics Performance Index.

Annex I. A Dynamic Macroeconomic Framework for SDG Financing

1.   The macroeconomic framework developed by Benedek et al. (2021), to evaluate the financing strategies to achieve the SDGs, consists of a set of accounting and behavioral equations covering the real, fiscal and external sectors of the economy, with the overriding objective of ensuring macroeconomic consistency while maintaining flexibility and tractability. The framework focuses on the ability of public and private economic actors to mobilize funding to achieve the SDGs in five key areas, namely education, health, roads, electricity, water and sanitation. The framework ensures that economic growth is consistent with human and physical capital investment and follows demographic developments. The model is used to simulate the effect of policies over the 2020-50 horizon. The main features of the framework are described below (see Benedek et al. 2021 for a detailed description of the model):

2.   On the real side, the model relies on the IMF's Debt, Investment and Growth (DIG) model that addresses the public-investment-growth nexus and fiscal adjustments in low income and emerging economies. The production function is given by:

$$Y = A\left(K_{G,nb} + \theta K_{G,b}\right)^{\beta} K_P^{\alpha} \left[L\left(\frac{H}{L}\right)^{\sigma}\right]^{1-\alpha}$$

3.   Where H is human capital, A is total factor productivity, $K_{G,b}$ and $K_{G,nb}$ are public bankable and public non-bankable (i.e., financed with private resources) capital stocks respectively. K_P is private capital stock. L is the labor force and $\frac{H}{L}$ is the stock of human capital per worker. The elasticities $\alpha, \beta \in (0,1)$ and $\sigma > 0$ are, respectively, the private capital share of output, the output elasticity of public capital, and the parameter that determines how human capital is transformed into effective labor.

4.   Investment $\left(I_{i,t}\right)$ and depreciation $\left(\delta_{i,k}\right)$ determine the dynamics of capital stocks according to the following law of motion:

$$K_{i,t} = \left(1 - \delta_{i,k}\right)K_{i,(t-1)} + \epsilon I_{i,t} \qquad i = G, P$$

5.   Where $0 < \epsilon \leq 1$ is the efficiency with which investment spending is transformed into effective capital.

6.   Similarly, schooling and improvements in health, represented by $\xi > 0$, and depreciation (δ_h) determine the dynamics of human capital according to:

$$H_t = (1 - \delta_h)H_{t-1} + \omega\xi_{t-1} \qquad i = G, P$$

7. Where $\omega \in (0,1)$ is the rate at which human capital increases with the previous period of schooling. Human capital generated through schooling and health accumulates according to this law of motion:

$$\xi_t = (1 - \omega)\xi_{t-1} + \left[(e * h)^\phi * n^\gamma\right]_{t-1}$$

8. Where h is the annual nominal spending on health and education, which translates into new human capital according to an efficiency parameter $e > 0$, with elasticity $\phi > 0$. n is the share of school-age population and $\gamma > 0$ is the elasticity of schooling to n.

9. The fiscal balance determines the amount of resources available for SDGs spending, according the following identity:

$$SDG\ resources = Revenue - NonSDG\ Expenditures - Net\ public\ lending$$

10. In the framework, Gaspar et al. (2019)'s quantification of SDG targets are used to derive the gap between the actual annual investment spending in infrastructure and the spending required to meet the SDG targets. Thus, the framework calculates the amount of additional financing (on top of resources in staff's baseline scenario) needed to reach the SDG goals within a given timeframe.

Annex II. Stochastic Frontier Models for Estimating Tax Potentials and Spending Efficiency

Methodology

1. A stochastic frontier analysis uses econometric models to link measures of input (or resources) with a measure of output, while controlling for determinants of the output variable other than the input variables, with the final goal to assess whether the inputs produce the highest level of output (maximum efficiency). The stochastic frontier model used in this paper (see Greene, W. H., 2008; Parmeter, C. F. and Kumbhakar, S. C.,2014 for more details) specifies a production technology, $f(X_i, \alpha)$ using inputs for country i, $X_i = (x_i^1, X_i^{-1})$, to produce the optimal output: $y_i^* = f(X_i, \alpha)$. The model assumes that the government only achieves a fraction of y_i^*, namely $y_i = f(X_i, \alpha)\varepsilon_i \exp(v_i)$, where $0 < \varepsilon_i \leq 1$ is the level of efficiency, and v_i is a random shock. Assuming k inputs, a log-linear production function, and defining $\varepsilon_i = \exp(-u_i) \leq 1$, the SFA estimates the following econometric model: $\ln(y_i) = \alpha_0 + \sum_{j=1}^{k} \alpha_j \ln(x_i^j) + v_i - u_i$.

Tax Potential Analysis

2. Following the literature in this line of research, economic and socio-political variables are used to explain the behavior of several tax revenue indicators (Total tax, Goods & Services, Income, and Trade) in several sub-group of countries to which STP belongs (Fragile states, Low-income countries, and Sub-Saharan Africa). The estimations use panel datasets with varying numbers of countries depending on the subgroup, over the period of 1996-2019. Specifically, the explanatory variables include the PPP-adjusted real GDP per capita, consumption, CPI inflation, financial deepening index, share of urban population, agricultural value-added, investment, and government effectiveness. Data was obtained from World Economic Outlook, World Development Indicators, International Financial Statistics, and World governance indicators.

3. Estimation results for the total tax revenue model are presented in Annex 2 Table 1.[1] Model results are used to compute the tax effort (TE_i), the tax frontier (TF_i) and the tax potential (TP_i) respectively as: $TE_i = \varepsilon_i$, $TF_i = \frac{y_i}{TE_i}$, and $TP_i = TF_i - y_i$. These calculations are shown in Text Table 1.

Spending Efficiency Analysis

4. The efficiency of public spending is analyzed in three key sectors: education, health, and infrastructure (investment). For the education sector, the outcome indicator combines measures of out-of-school children, mean schooling years, and school enrollment and attainment. For the health sector, the outcome indicator combines measures of life expectancy, infant, child and maternal mortality, and treatment outcomes of tuberculosis, diphtheria and measles. Following IMF (2015), measures of public investment efficiency include measures of coverage (World Development

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[1] Results from the three other models are available from the authors upon request.

indicators' measures of access to electricity, water, telecommunications) and a measure of infrastructure quality (from the World Economic Forum). Explanatory variables for each model include public spending, private spending (where data is available), the level of development measured by real GDP per capita, as well as other relevant determinants of the outcome variable. Data are obtained from the World Economic Outlook, World Development Indicators, International Financial Statistics, World Health Organization, and Unicef.

5.   Estimation results for the Public Investment Spending model are presented in Text Table 2.[2] Model results are used to compute the efficiency of public spending.

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[2] Results from the *Education* and *Health* models are available from the authors upon request.

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ASSESSING FISCAL RISKS AND ITS IMPLICATIONS FOR THE ENERGY SECTOR AND CLIMATE CONSIDERATIONS[1]

1.   São Tomé and Príncipe (STP) is prone to different fiscal risks. Being a small island import-dependent economy where a major part of the annual budget is financed by grants from development partners, the country is affected by changes in international political conditions and commodity prices, particularly fuel and cocoa. In general, fiscal risks could have a significant impact on government finances. As recent experiences show, fiscal risks could originate from a wide range of exogenous sources, including the COVID-19 pandemic, global commodity prices, the Global Financial Crises, etc. The realization of fiscal risks could lead to significant increases in budget deficits and debt liabilities, and a deterioration of public sector net worth.

2.   An inefficient power sector is the main vein for materialization of fiscal risks in STP. The energy sector in STP has a complex institutional arrangement among the government and two of the largest energy SOEs, EMAE (the electricity company) and ENCO (the fuel company). These SOEs have long-standing operational inefficiencies which result in recurrent disruptions of the electricity supply and financial losses. EMAE generates electricity through obsolete and expensive fossil fuel-based power plants and faces significant commercial and technical losses in the distribution grid. ENCO imports fuel for electricity generation. ENCO accumulated losses from below-market fuel pricing and these losses were resolved by implementing the automatic fuel pricing adjustment mechanism. However, delays in implementing price adjustment to reflect increasing international fuel prices may increase losses to ENCO.

3.   The paper is organized as follows: Section A. overviews fiscal risks in STP; Section B. assesses macroeconomic risks in STP; Section C. assesses risks stemming from SOEs; Section D. discusses fiscal risks in the energy sector SOEs; and Section D. discusses climate considerations for the energy sector SOEs. To systematically examine fiscal risks in STP, the paper applies two recently developed IMF tools - the Fiscal Risk Assessment Tool (FRAT) and the SOE Health Check Tool (HCT).

A.   Fiscal Risks

4.   Fiscal risks are possible events that cause unforeseen variations in fiscal aggregates (revenue, expenditures, fiscal balance, debt position). STP is prone to:

- *Macroeconomic risks:* risks related to forecast errors and deviations in the estimations of macroeconomic parameters (GDP growth, interest rate, exchange rates) and fiscal variables such

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as income and expenses, assets and liabilities, and ratios relative to GDP, for example debt to GDP ratio.

- *Fiscal risks stemming from SOEs:* the SOE sector is a significant source of fiscal risks in STP including debt held by insolvency corporations, quasi-fiscal operations, and hidden transactions between corporations and the government. This is particularly relevant in the energy sector where two major SOEs (EMAE and ENCO) operate under monopoly regimes embedded with economic and operational inefficiencies.

5. Macroeconomic risks and risks from public corporations are high priority risks for mitigating the impact on public finances in STP (Figure 1). The FRAT provides a starting point for fiscal risk analysis focusing on qualitative analysis that can also be complemented by some quantitative analysis, depending on data availability. The risk assessment is based on a standard questionnaire which, for the purpose of this paper, was filled out together with the authorities from the Budget Department within the Ministry of Finance (MoF) in STP. However, availability of information to properly identify, monitor, and mitigate risks is a concern. In STP, only 50 percent of the information and data required to support risk quantification and mitigation for the macroeconomic risks is available, and 25 percent is partially available (Figure 2). In the case of risks stemming from SOEs, the information gap is even larger.

Figure 1. Risk Rating and Priority Matrix

FISCAL RISK	SOURCE OF RISK	Fiscal impact	LIKELIHOOD	RISK RATING	MITIGATION STRATEGY	PRIORITY ACTIONS
Macroeconomic risks	Macroeconomic risks	Medium	Probable	High	No	High Priority
Specific risks	Public corporations	High	Probable	Critical	No	Critical

Figure 2. Availability of Information and Data to Support Risk Quantification and Mitigation

Type of fiscal risk	Sources of risks covered in application of tool	YES	PARTIAL	NO	NO RESPONSE
Macroeconomic risks	Macroeconomic risks	50%	25%	25%	0%
Specific risks	Public corporations	0%	14%	86%	0%

Source: Fiscal Risk Assessment Tool (FRAT).

6. Although setting up the macro-fiscal unit is a remarkable enhancement for the macro-fiscal function, dealing with fiscal risks requires more specific and dedicated approach. In STP, a macro-fiscal unit has been created and is being strengthened, in collaboration with the central bank and the statistics agency, to better collect and manage information on macroeconomic parameters and improve methodologies used in macro forecasts and projections of fiscal aggregates, including for the medium-term. The institutional arrangements for managing fiscal risks could also include a coordinating unit—like the macro fiscal unit—to liaise with relevant departments on regular fiscal risk reporting. In many countries the fiscal risk function (identification,

quantification, and mitigation) is devoted to a specific fiscal risks unit well-staffed and trained with the skills needed to manage this topic and STP needs to start moving in this direction. [2]

B. Assessing Macroeconomic Risks

7.   Macroeconomic risks stem from variations in the macroeconomic parameters supporting fiscal projections, which impact fiscal outcomes. Empirical evidence shows a significant impact of macroeconomic shocks on fiscal indicators and targets. Macroeconomic shocks are relatively frequent and have major implications for public debt. According to Bova et al (2016), these shocks typically hit economies every ten-twelve years, with an average cost equivalent to 9 percent of GDP.[3] Different situations may produce the materialization of

Figure 3. Real GDP Growth: Historical Forecast Errors

(Negative values denote overestimation)

Legend: Budget year (in percent); Budget year + 1 (in percent); Budget year + 2 (in percent)

Source: Fiscal Risk Assessment Tool (FRAT).

macroeconomic risks, for example, a slowdown in economic activity, and fluctuations in commodity prices, such as oil, with strong impact in the budget. An initial assessment of macroeconomic risks in STP is performed by examining the forecast errors in recent years in key macroeconomic variables:
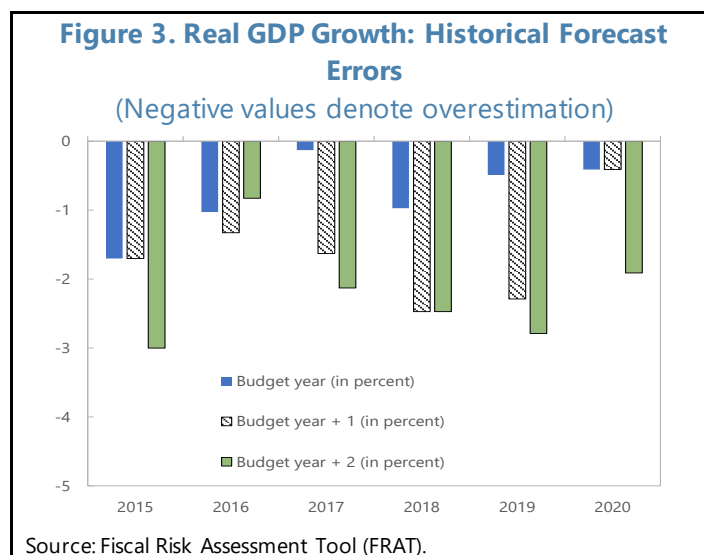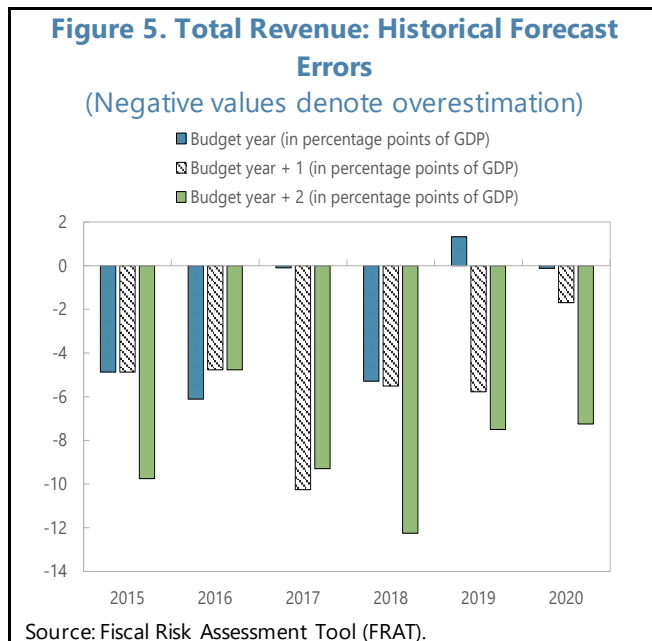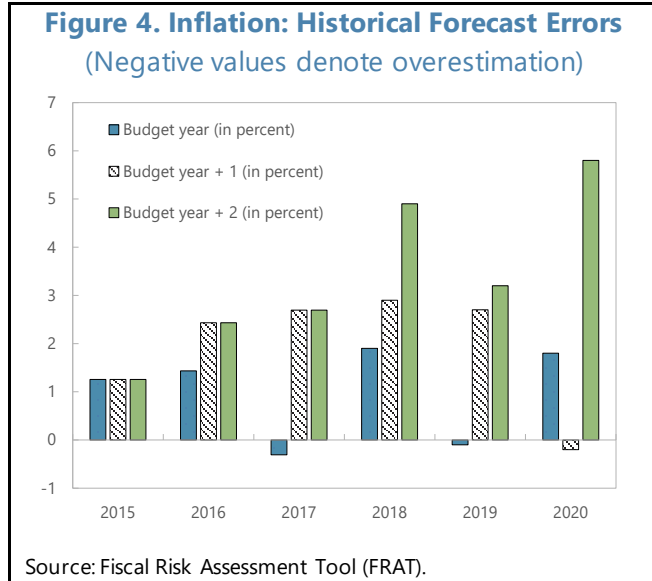
8.   The optimistic bias seems to broadly govern the projection methodologies in STP:

- The real GDP growth has been consistently overestimated in the pre-pandemic period (Figure 3). Two factors explain this outcome: i) an optimistic bias in the current methodology to forecast GDP growth, which should be addressed by the newly created macro-fiscal unit; ii) the materialization of risks which cause unexpected slowdown in economic activity. It is important to note that the 2020 projection was impacted by the COVID-19 pandemic when, at the early stages of the health crisis, the 2020 GDP projection was revised to -6.5 percent due to the pandemic and all emergency measures implemented to contain the spread of the virus. However, given the strong financial support from the international community (international organizations and bilateral donors) implemented during the year, the real GDP actually increased by around 3.0 percent, still a negative gap of 0.5 percentage points relative to the original budget projection.

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[2] The 2019 PEFA assessment also highlighted these vulnerabilities in managing fiscal risks in the country with emphasis on risks stemming from SOEs and contingent liabilities. Reacting from the PEFA assessment the government has established an action plan to improve its processes in several areas, including the preparation of a fiscal risk statement to be incorporated in the budget documents every year. The statement aims to report on the most relevant fiscal risks, but this reform is still in early stages of implementation.
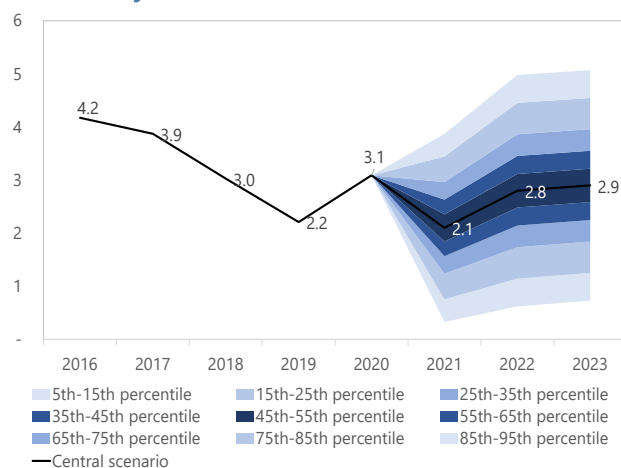
[3] Bova et al, 2016. Analyzing and Managing Fiscal Risks: Best Practices", 2016.

- Inflation is consistently underestimated (Figure 4). This practice can be detrimental for the management of public finances when relevant expenditure items (payroll, social benefits, health services) are directly or indirectly indexed by inflation and the underestimation leads to underbudgeting these expenditures upfront. Therefore, during budget execution the government will have to find additional sources of funds to finance the budget gap or incur in arrears to civil servants or government providers. The underestimation of inflation may also affect the revenue side toward higher revenue collection than budgeted, which can balance out to some extent the deviations in expenditures.

- Fiscal revenues are overestimated (Figure 5). As revenues fall short of budget targets, expenditure envelope is adjusted to meet the fiscal deficit target which undermines proper expenditure planning (see Box 1).

- Given the central projection scenario, there is a higher probability that actual performance will be lower than originally project because of the observed optimistic bias in the historical data. The fan charts for the current projections of real GDP growth show the evolution of the predictive densities for the probabilistic deviations of the central scenario (Figure 6).

Figure 4. Inflation: Historical Forecast Errors
(Negative values denote overestimation)

Source: Fiscal Risk Assessment Tool (FRAT).

Figure 5. Total Revenue: Historical Forecast Errors
(Negative values denote overestimation)

Source: Fiscal Risk Assessment Tool (FRAT).
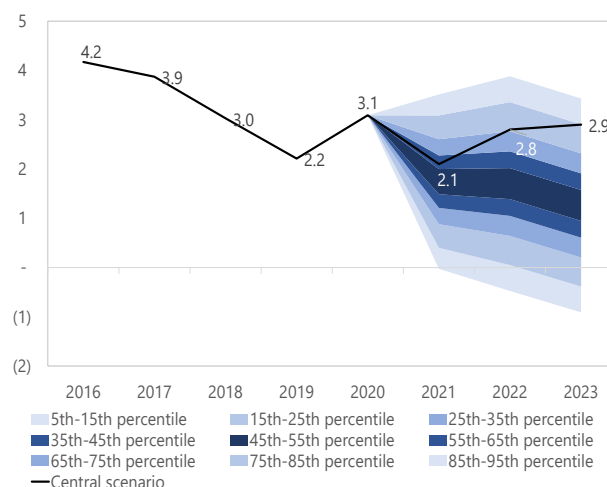
Figure 6. Real GDP Growth: Historical Growth and Uncertainty Around Current Forecasts
(In percent)

Source: Fiscal Risk Assessment Tool (FRAT) using data from the World Economic Outlook (WEO).

9.   Policy priorities should focus on:

- *Strengthening macro-fiscal function.* The recently implemented macro-fiscal unit comprising representatives from the Ministry of Finance, Central Bank and Bureau of Statistics should continue developing processes and methodologies to enhance forecast capacity. The recently developed manual for macro-fiscal projections should be made operational by the agencies involved in projecting macroeconomic parameter and fiscal aggregates. Most importantly, the three-year medium-term framework should be introduced in the budget documentation to allow for scrutiny by the parliament and civil society institutions, generating positive incentives for strengthening the macro-fiscal processes over time.

C. Risks Stemming from SOEs

10.   SOEs pose a high level of fiscal risk to the government. Four SOEs with 100 percent ownership of the government have high risks for profitability, liquidity, and solvency ratios (Table 1). These SOEs are electricity and water supply company (EMAE), the corporation responsible for the port management ENAPORT, the aviation regulation agency ENASA, and the mail company CORREIOS. These risks were already present in the period pre-pandemic and were exacerbated by COVID-19. The SOE Health Check Tool is applied on the financial information reported in audited annual financial statements over the period 2017-2020 (Figure 7 and 8).

Box 1. Volatility of GDP Growth and Revenue Growth, 2000-2019

Macroeconomic volatility driven by exogenous factors tend to make fiscal projections in small and open economies like STP difficult. The significative dependence on external grants to finance the annual budget and the unpredictable disbursements from donors, pose challenges for fiscal forecasting in STP. Although the volatility of nominal GDP growth in STP lays within the average of Sub-Saharan countries, the revenue growth volatility is remarkably high relative to its peers in the region.

Nominal GDP Growth vs Revenue Growth
(In percent)
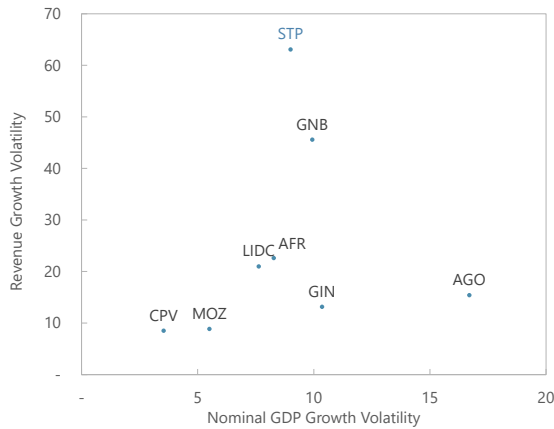
General Government Revenue Growth
(In percent)
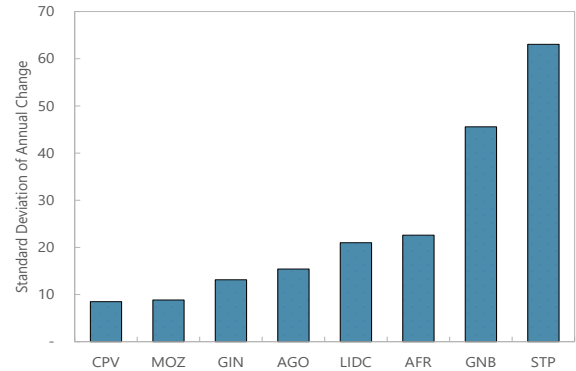
Source: Fiscal Risk Assessment Tool (FRAT) using data from the World Economic Outlook (WEO).
Note: Not all data available. The average for low-income developing countries (LIDC) and the average for Sub-Saharan African countries (AFR). Revenue growth volatility and Nominal GDP growth volatility refer to observed fluctuations in these variables over the period 2000-2019.

Table 1. Sao Tome and Principe: Composition of the SOE Sector in STP

Acronym	Full name of the corporation	Year of creation	Legal form	Government share	Sector
EMAE	*Empresa Nacional de Água e Electricidade*	1979	EP	100	Generation, transmission and distribution of electricity, and provision of water and sanitary services.
ENAPORT	*Empresa Nacional de Portos*	1989	EP	100	Regulation and operation of ports on the islands of São Tomé and Príncipe.
ENASA	*Empresa Nacional de Aeroporto*	1987	EP	100	Operation of the international airport on the island of São Tomé.
Correios	*Empresa dos Correios*	1982	EP	100	Postal services
CST	*Companhia Sãotomense de Telecomunicações*	1989	SARL	49	Terrestrial and wireless access to telephone and internet services
BISTP	*Banco Internacional de São Tomé e Príncipe*	1993	SARL	48	Commercial banking activity
STP Airways	*Transportes Aéreos de São Tomé e Príncipe*	2008	SARL	38	Domestic and international air transport
ENCO	*Empresa Nacional de Combustíveis e Óleos*	1997	SARL	16	Import, wholesale distribution, and retail distribution of gasoline and liquid petroleum gas (LPG)

Source: STP Authorities.

Figure 7. Risk Ratings After COVID-19 Crisis
SOE Risk Ratings (2020)

| | Profitability | | Liquidity | | Solvency | | Overall Risk Rating |
	Cost Recovery	Return on Equity	Current Ratio	Debtor Turnover Days	Debt to Assets	Debt to Equity	
EMAE	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk
ENASA	Very High Risk	Very High Risk	Low Risk	Very High Risk	High Risk	Very High Risk	High Risk
ENAPORT	High Risk	Very High Risk	High Risk	Very High Risk	Moderate Risk	Very High Risk	High Risk
CORREIOS	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk

Figure 8. Risk Ratings Before COVID-19 Crisis
SOE Risk Ratings (2019)

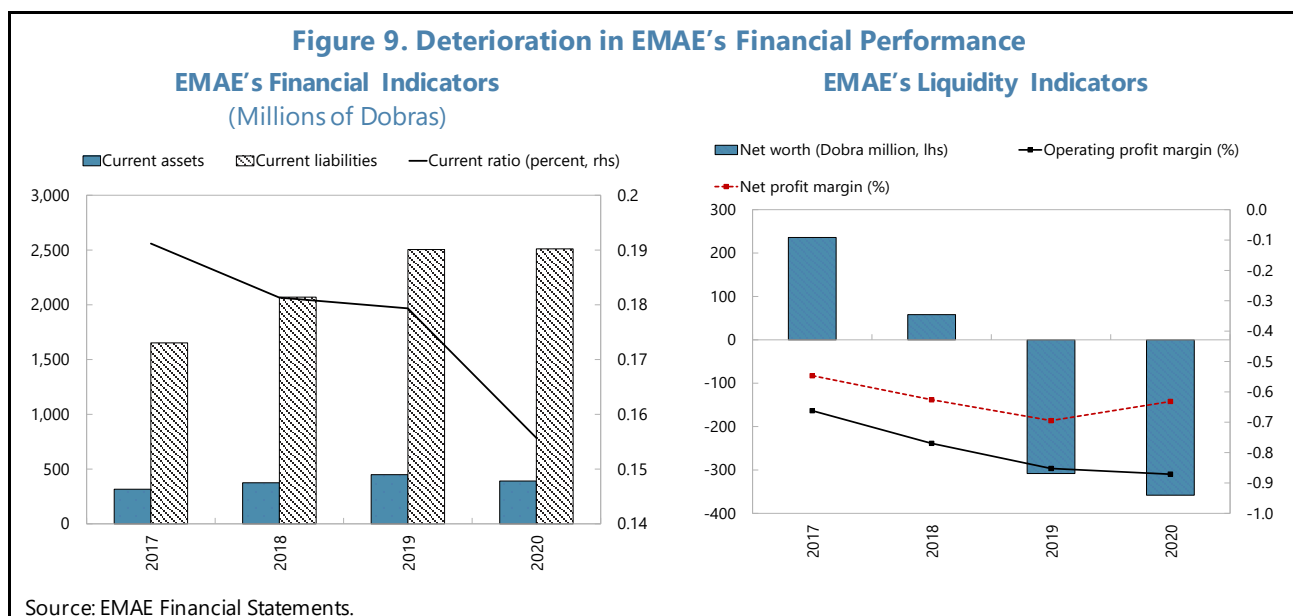| | Profitability | | Liquidity | | Solvency | | Overall Risk Rating |
	Cost Recovery	Return on Equity	Current Ratio	Debtor Turnover Days	Debt to Assets	Debt to Equity	
EMAE	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk
ENASA	Moderate Risk	Moderate Risk	Very Low Risk	Very High Risk	Moderate Risk	Moderate Risk	Moderate Risk
ENAPORT	Moderate Risk	Low Risk	High Risk	Very High Risk	Moderate Risk	High Risk	High Risk
CORREIOS	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk

Source: SOE Health Check Tool (SOEHCT).

EMAE – Already in Trouble Pre-COVID-19

11.   EMAE is facing severe operational and technical difficulties that undermine its financial performance (Figure 9). High operational (commercial and technical) losses, electricity generation matrix mostly based on inefficient and obsolete heavy-oil-based generators, and internal management deficiencies are among key factors contributing to the company's weak financial position.

Figure 9. Deterioration in EMAE's Financial Performance

EMAE's Financial Indicators (Millions of Dobras)

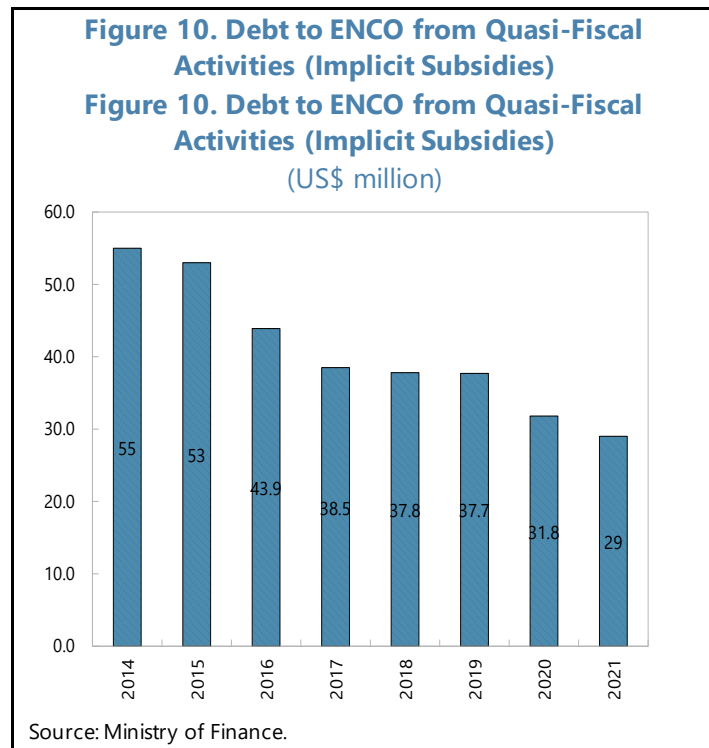EMAE's Liquidity Indicators

Source: EMAE Financial Statements.

12.   EMEA is currently insolvent, and its liabilities exceed its assets by around 16 percent. The government has been providing capital transfers on a regular basis to cover the systematic

operating losses and keep the company operational in supplying electricity and water services throughout the country. For example, a Dbs 33 million cash transfer in 2019 to support the cash flow of the company and around Dbs 60 million cash payment in 2020 undertaking in the context of clearance of arrears that was used to repair some of the non-operational oil generators and water supply system.

ENCO – Harmed by Quasi-Fiscal Activities (Box 2) and Hidden Subsidies

13.   **ENCO's quasi-fiscal activities (implicit subsidies) from below-market pricing of oil products have been very detrimental to the company's financial position.** [4] In 2015 the government estimated the accumulated losses incurred by ENCO resulting from below-market prices in place in the period 2006-2014 to have reached around US$ 55 million (approximately Dbs 1.1 billion) by end-2015. This stock was recognized by the government to be paid during 50 years at a pace of US$ 1 million per year. Furthermore, to prevent new accumulation of implicit subsidies, the old fuel price policy was replaced by an automatic fuel price adjustment mechanism.

14.   **The automatic fuel price mechanism introduced in 2017 prevented the further incurrence of losses and reduced the accumulated stock by 47 percent.** Under the mechanism, retail prices for all fuel products (gasoline, diesel and kerosene) are set administratively, using pricing formulas based on import CIF prices, applicable taxes, margins and other costs (Box 3). Furthermore, during the historically low international prices in recent years the government has taken the decision to keep administrated prices unchanged, which surpassed the formula prices and generated positive differentials used to reduce the debt stock (Figure 10).

Figure 10. Debt to ENCO from Quasi-Fiscal Activities (Implicit Subsidies)
Figure 10. Debt to ENCO from Quasi-Fiscal Activities (Implicit Subsidies)
(US$ million)

Source: Ministry of Finance.

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[4] Throughout this paper we are labeling "implicit subsidies to ENCO" the losses the company incur because of below-market administrated prices for fuel, which is a quasi-fiscal activity (Box 2). It does not include losses resulting from operational inefficiencies. The final beneficiaries of such policy are the end consumers who pay a below-market price on fuel. However, we are labeling implicit subsidies to ENCO due to fact the government accumulates a debt and makes payments to ENCO to compensate the company for those losses.

Box 2. Quasi-Fiscal Activities

Quasi-Fiscal Activities (QFAs) are another important source of risks from SOEs in STP. A QFA is an operation that is undertaken by an SOE in pursuit of a public policy objective and that is not strictly commercial in nature. For example, the publicly owned company ENCO had accumulate huge losses in the past because of below-market administrated prices for fuel. QFAs weaken SOEs' performance and accountability, increase the likelihood of fiscal risks materializing and reduce fiscal transparency. As an SOE is unable to fully recover the costs of the QFA in revenue from customers or compensation from the government, it results in their financial performance and position being worse than would otherwise have been the case and consequently increases the likelihood of fiscal risks materializing (e.g., through the government having to provide a bailout to the SOE). QFAs reduce the ability of the government to hold SOEs accountable: poor SOE performance may be attributed to the QFAs the government requires the company to perform, rather than SOE inefficiency or the poor commercial decisions made by management. The costs of these activities that are essentially fiscal in nature are not disclosed or are masked when support is provided to the SOEs in the form of instruments like capitalizations, guarantees and loans.

Good practice is for governments to expense and fully fund the net costs of QFAs in the budget and for the costs to be disclosed in the financial statements of the government and SOEs. This enables the government to optimally allocate public resources, by ensuring that QFAs compete alongside other public policy priorities for funding. SOE performance can be evaluated against private sector peers and, in addition, the SOE's efficiency and effectiveness in delivering the QFA can be assessed. The information to be disclosed should describe the type of activity; the rationale for performing it through the state budget; the opportunity cost of the activity and the mechanism designed to compensate the SOE for the negative impact on its financial position.

ENASA – The Airport Company

15.   **ENASA had been generating profits pre-pandemic, but with some liquidity challenges.** The company's liquidity position was comfortable as its current assets were sufficient to meet its current liabilities, and its debt dynamic showed a sustainable path relative to its assets (Figure 11). Net worth was positive and overall fiscal risk level was moderate. However, there were already concerns related to liquidity turnover indicators, which measures the speed with which an SOE pays its suppliers (debtor turnover days) and, on the other side, the speed with which a company is paid by its customers. Despite the positive profits, ENASE had been accumulating arrears to suppliers and had not been able to timely collect amounts owed by its customers.

Figure 11. ENASA's Financial Performance

Source: SOE Health Check Tool (SOEHCT).
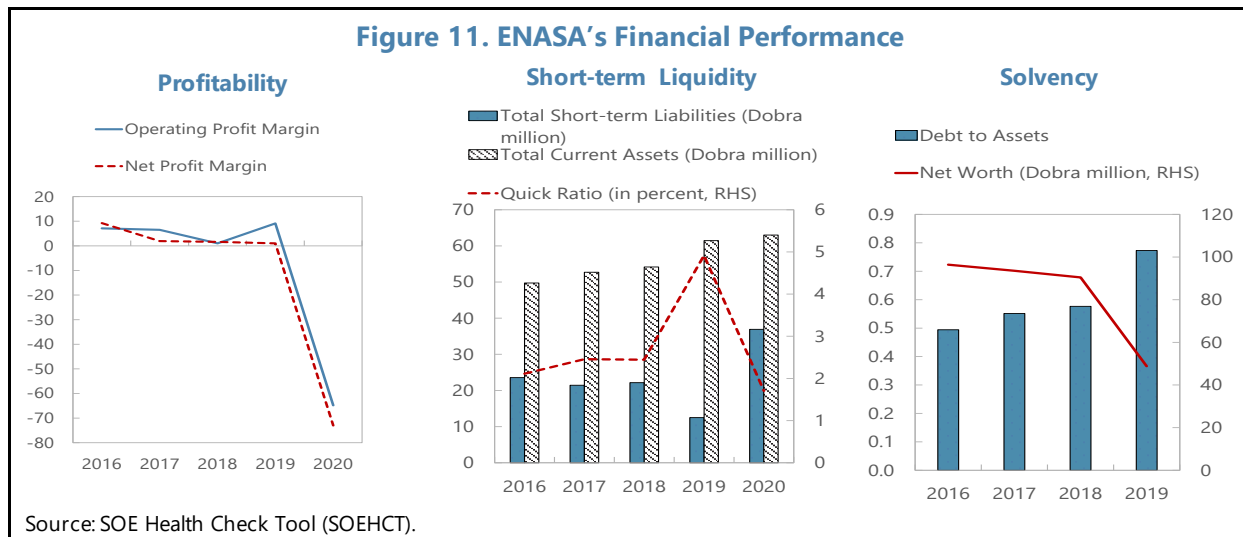
16. **The pandemic shock and the associated emergency measures to contain the spread of the virus have severely affected the company's financial position.** Closure of borders, banning of international and domestic flights, and complete suspension of operations in the São Tomé international airport hit hard the companies' activities and the impact of the shock was absorbed by depleting its cash resources and eroding of the company's equity. There has been no additional government support in 2020; however, the continued business impact of the pandemic may require the company to request government support, for example, in the form of capital transfers or guarantees. Figure 12 illustrates the significant impact of the pandemic on ENASA's risk rating, which has been downgraded to high risk in 2020 from moderate risk over the period 2017-2019.

Figure 12. ENASA's Risk Ratings, 2017–2019

	2016	2017	2018	2019	2020
Profitability					
Return on Assets	Very Low Risk	Moderate Risk	Moderate Risk	Moderate Risk	Very High Risk
Return on Equity	Very High Risk	Moderate Risk	Moderate Risk	Moderate Risk	Very High Risk
Cost Recovery	Moderate Risk	Moderate Risk	Moderate Risk	Moderate Risk	Very High Risk
Liquidity					
Current Ratio	Very Low Risk	Very Low Risk	Very Low Risk	Very Low Risk	Low Risk
Quick Ratio					
Debtor Turnover Days	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk
Creditor Turnover Days	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk
Solvency					
Debt to Assets	Very High Risk	Low Risk	Moderate Risk	Moderate Risk	High Risk
Debt to Equity	Very High Risk	Low Risk	Moderate Risk	Moderate Risk	Very High Risk
Debt to EBITDA	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk
Interest Coverage	Very Low Risk	Very Low Risk	Very Low Risk	Very Low Risk	Very High Risk
Cash Interest Coverage	Very Low Risk	Very Low Risk	Very Low Risk	Very Low Risk	Very High Risk
Debt Coverage	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk
Government Relationship					
Government Transfers to Tota	Very Low Risk	Very Low Risk	Very Low Risk	Very Low Risk	Very Low Risk
50% Test	Very High Risk	Very High Risk	Very High Risk	Very High Risk	Very High Risk
Overall Risk Rating					
Simple Average*	High Risk	Moderate Risk	Moderate Risk	Moderate Risk	High Risk

Source: SOE Health Check Tool (SOEHCT).

Impact Of COVID-19 Crises on Soes

17. **SOEs tax debt to the government increased during the pandemic.** The main policy measure that the government implemented to support companies during the pandemic was temporary suspension of tax payments, including social security contributions. A set of measures provided temporary tax accommodation to businesses directly affected by the crisis through tax moratoria and deferred payments,

Table 2. Sao Tome and Principe: Tax Debt from SOEs to the Government

	2019	2020
Taxes/Customs	**48.8**	**61.5**
EMAE	11.3	12.7
ENASA	5.2	9.4
ENAPORT	27.4	34.3
CORREIOS	4.9	5.1
Social Security	**13.2**	**19.3**
EMAE	0.9	1.0
ENASA	1.2	4.0
ENAPORT	10.1	13.0
CORREIOS	1.0	1.3
TOTAL	**62.0**	**80.8**

Source: SOE's financial statements.

notably (i) exemptions from interest and additional penalties on tax arrears accumulated during the state of emergency; (ii) moratoria without penalties on non-complying with tax payment plans

established on previous years; and (iii) suspension of tax foreclosures. Under this policy, the tax debt from SOEs to the government increased by about 30 percent (Table 2).

18.   Policy priorities should focus on:

* *Restructuring SOEs that were already in trouble pre-COVID and that are strategic or systemically important.* This will require proper restructuring plans to be executed, such as the Management Improvement Plan for EMAE. Restructuring plans should be informed by a clear understanding of the drivers of the losses pre- and post-COVID. In addition, the corresponding fiscal costs should be explicitly recognized by the state (e.g., assumption of debt or employment-related liabilities). It is important to be cognizant that it will likely take time for such reforms to yield results. SOEs that are not viable and do not have a critical policy mandate should be sold or closed (e.g. CORREIOS).

* *Providing temporary support to SOEs that, prior to the COVID-19 pandemic, were healthy and whose performance is expected to recover once the crisis subsides.* These SOEs that are facing difficulties now should first exhaust other means of managing the turbulence, (e.g., using their own balances sheet to absorb the effects of the pandemic as in the case of ENASA) and receive temporary support from government only where required. Such support should ideally be provided in a form that limits the immediate impact on the budget (e.g., temporary guarantees).

* *Strengthening capacity and mandate within the MoF for financial oversight of SOEs.* There is currently a unit within the Treasury Directorate in charge of overseeing SOEs. However, the legal mandate should be enhanced and overseeing processes improved. For example, the unit should be empowered to regularly collect financial information from SOEs on a timely and standardized manner in order to regularly analyze the financial performance of the corporations and provide timely advise to the minister. Strategic plans, investment plans and budget documents for the SOEs should be made available and require prior option from the oversight unit before being operationalized by the corporations.

D.   Addressing Fiscal Risks from the Energy Sector in STP

19.   The inefficient energy sector set up is the main driver linking macroeconomic risks with specific fiscal risks stemming from SOEs in STP. Inefficiencies in this sector resulted in two major energy crises that hit the Santomean economy in recent years[5]: i) in 2019 the Angolan company Sonangol decided unilaterally to reduce the supply of fuel to STP by one third, in reaction to economic circumstances in Angola, but also taking into account the large stock of arrears owed by STP to its main supplier; ii) in 2021 the country has been facing shortages in electricity supply caused by the depreciation and lack of maintenance in oil-based electricity generators which became non-operational.

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[5] These shocks are listed in question 4 of the FRAT identification questionnaire in Annex I.

20.   There is a complex interconnection between macroeconomic factors and operational factors governing the materialization of fiscal risks in the context of the energy sector in STP (Figure 16). On macroeconomic factors, international political and economic circumstances in Angola drives the supply of oil to the company through the Angolan state-owned Sonangol. Price of oil in international markets also plays a relevant role in determining the impacts on fiscal aggregates. Finally, the constant instability in electricity supply is very detrimental to economic activity which ultimately impacts GDP growth and, consequently, revenue collection.

21.   On the operational factors, the challenges are two-fold: i) a long-standing stock of arrears from the government to EMAE and ENCO, from EMAE to ENCO, and from ENCO to Sonangol undermines proper functioning of the entire sector; ii) EMAE's operational difficulties, namely, technical and operational losses, management deficiencies, major dependence on expensive thermal electricity generation, prevent the electricity supply to be stable and sustain economic growth.

22.   To overcome these challenges the STP authorities established in 2018, with support from the World Bank, a comprehensive reform agenda to modernize the entire Energy Sector. The reform agenda aims to overcome operational and economic inefficiencies, modify the electricity generation mix away from thermo plants towards renewable and eco-friendly sources, such as hydroelectric and photovoltaic power plants, and provide lower-cost and reliable electricity to support sustainable economic growth in the country.

23.   The reform agenda comprised a five-year timeline for implementation of coordinated actions centered around four clear objectives: i) Reduce cost of electricity generation and change the generation mix towards renewable sources; ii) Reduce peak electricity demand and lower overall electricity consumption; iii) Improve management of electricity distribution by EMAE to reduce losses and improve collection rates; iv) Reform tariff structure and strengthen regulatory framework.

24.   The first objective was designed to be achieved through the implementation of a detailed action plan named Least Cost Development Plan (LCDP). The LCDP comprises the rehabilitation and expansion of the only operating hydropower plant on the São Tomé Island, and further developing other locations with hydropower potential in the country, and the implementation of photovoltaic solar plants, among other initiatives. The full implementation of this plan would increase the share of renewable source in the electricity generation mix from 5 to 45% by 2024 and lead to a reduction in the average cost of energy in STP by around 40 per cent (from 0.25 to 0.14 USD/kWh), in line with the production cost in the Sub-Saharan region (Figure 13).

Figure 13. Envisaged Change in the Generation Mix and Cost of Energy

The cost of energy produced in STP fell above average of SSA, even when filtering for primarily thermal generation countries.

*Changing the generation mix towards renewable sources is key to reduce energy costs.*
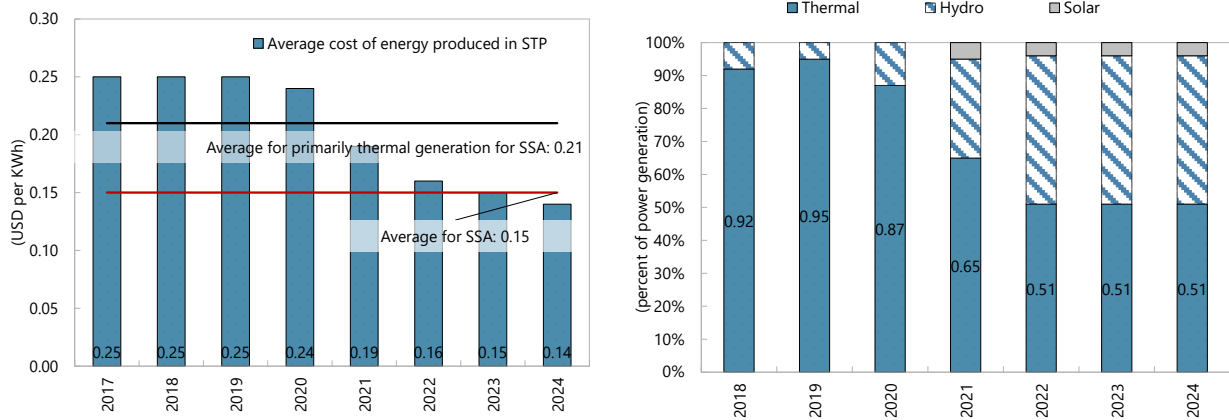
Source: Least Cost Development Plan (LCDP).

25.   The third objective is entirely focused in resolving EMAE's operational and managerial bottlenecks. A Management Improvement Plan (MIP) was set up aiming to reduce grid losses and raise collection rates from costumers, besides reorganizing the institutional arrangement within the corporation to modernize management processes and capacities. The MIP implementation would potentially reduce commercial and technical losses from 33 to 23 percent and raise collection rates from 85 to 95 percent (Figure 14), enabling EMAE to achieve cost recovery in the medium-term.

Figure 14. Envisaged Improvement in Operational Indicators

The total losses (technical + commercial) reach over 30% of the energy injected to the grid...
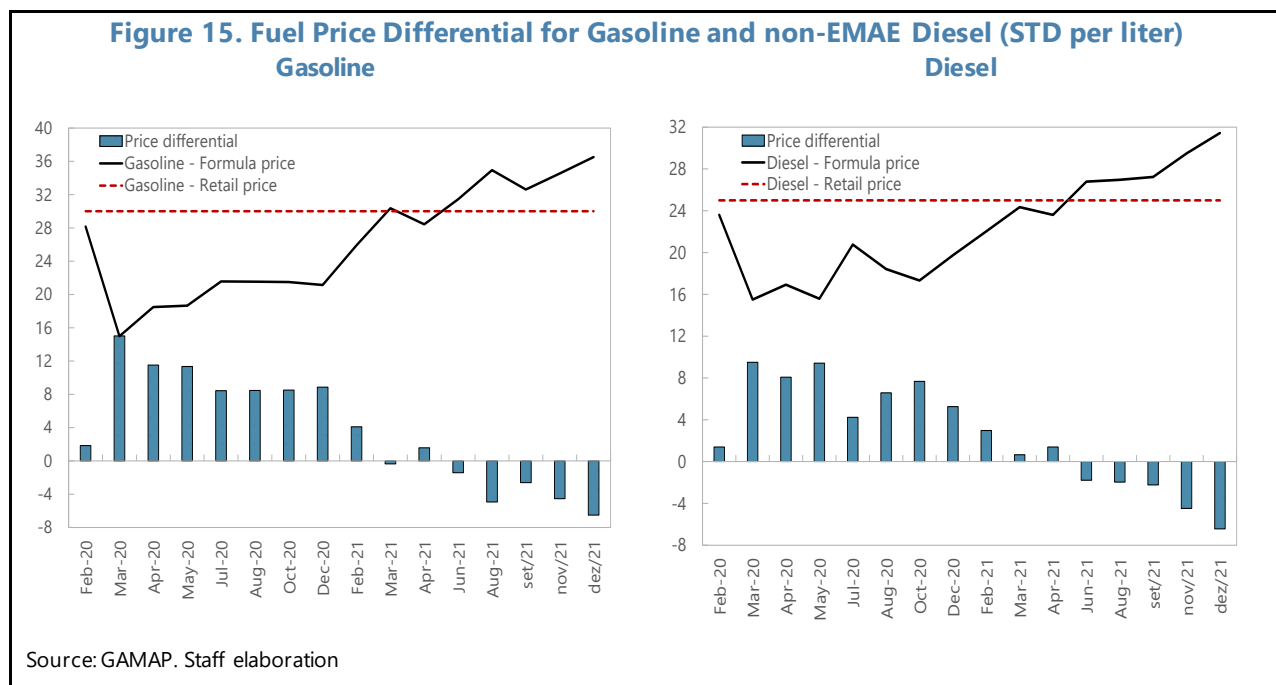
...and collection rate falls below average for SSA. Improving EMAE´s management is critical to achieve cost recovery in the medium-term.
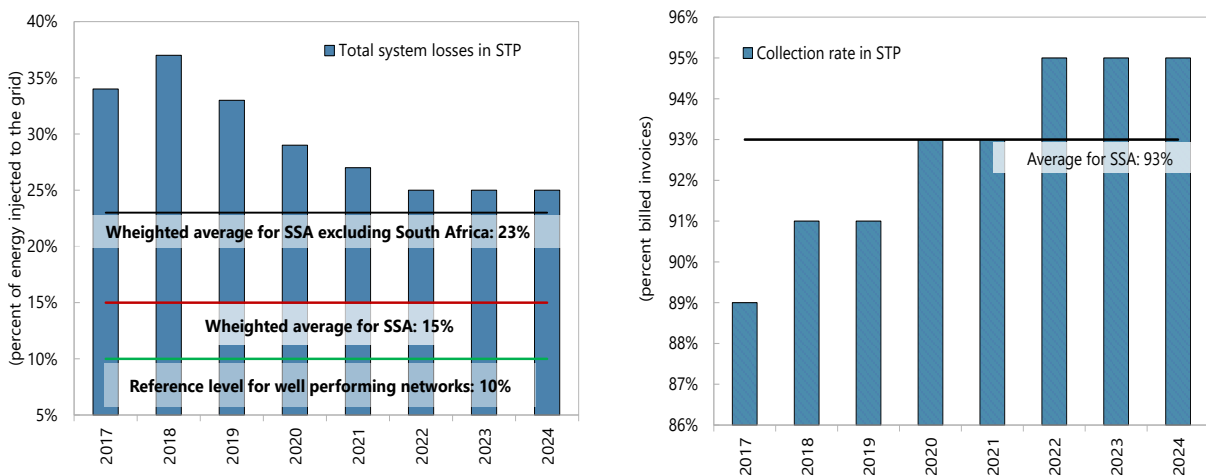
Source: Management Improvement Plan (MIP).

26.   However, the complexity of this overarching reform agenda, which involves multiple pillars and weak leadership led to systematic delays in action implementation. For example, the MIP implementation has been delayed because of, among other reasons, capacity constraints at EMAE and the authorities' internal discussions on possible restructuring of the production, transmission, and distribution frameworks, which was originally not envisaged (nor necessary) under the sector reform strategy.

27.   The policy governing domestic prices for fuel plays a significant role in the energy sector. Besides the reform measures in the electricity generation and distribution fronts, another key element in addressing fiscal risks from the energy sector is the policy governing the administrative domestic prices for fuel products in the country, specifically aimed to prevent implicit subsidies to ENCO.

Figure 15. Fuel Price Differential for Gasoline and non-EMAE Diesel (STD per liter)

Source: GAMAP. Staff elaboration

28.   In this context, raising international fuel prices require domestic price adjustments to mitigate implicit subsidies and increasing fiscal losses to ENCO. Beginning in August 2021 the difference between administered retail prices for fuel products, namely gasoline, diesel and kerosene, and the import prices have become negative after STP had been benefiting from positive price differentials since early 2020 (Figure 15). The cumulative balance for the year of revenue inflows from price differentials were positive reaching Dbs 57.5 million by August 2021; however, such balance was reduced to around Dbs 36 million by end-December. Should the negative price differential persist throughout 2022 it will generate a cost (implicit subsidy) of around Dbs 70 million to the oil company ENCO.


Box 3. Fuel Price Mechanism and Formula Components

An automatic fuel price mechanism, introduced in 2017, operationalizes a full pass-through of changes in international fuel prices to domestic retail prices, preventing implicit subsidies from below cost retail pricing and build-up of payment arrears to the oil company ENCO. Under the mechanism, retail prices for all fuel products (gasoline, diesel and kerosene) are set administratively, using pricing formulas based on import CIF prices, applicable taxes, margins and other costs:

- Total applicable taxes levied on the import CIF price: a 5 percent duty charged on gasoline, EMAE and non-EMAE diesel and kerosene and surcharges of 106 percent on gasoline, 66 percent on non-EMAE diesel, and 15 percent on EMAE diesel.
- Road fund: a fixed fee of 0.35 dobra per liter of gasoline, 0.40 dobra per liter of non-EMAE diesel, and 0.20 dobra per liter of EMAE diesel is earmarked for road maintenance.
- Margins and other costs: (i) cost associated with the clearance of products through the customs, assessed as a percentage of the import CIF price; (ii) distribution charges differentiated per product; and (iii) wholesale and retail margins.
- ENCO Surcharge: effective from 2019, a surcharge has been introduced in the pricing formulas to pay the long-lasting accumulated debt to ENCO. Currently, the surcharge is set at 2.50 dobras per liter for gasoline and EMAE and non-EMAE diesel, and 0.50 dobra per liter of kerosene.

The government complied with the pricing mechanism and maintained retail fuel prices aligned to international markets to prevent fuel subsidies and contain fiscal risks. Moreover, retail prices have been kept fixed throughout 2020 and 2021 enabling the government to benefit from the large price differential generated by the lower prices at international markets, particularly in 2020.

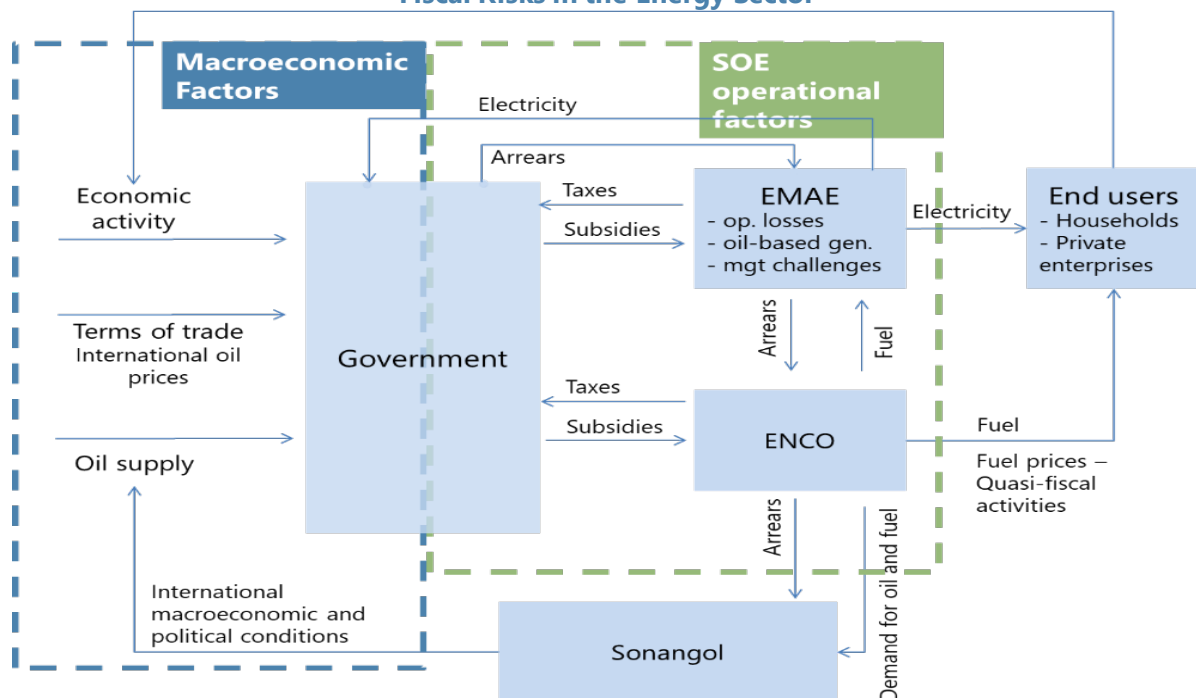**Components of Fuel Price Formula and Retail Prices, (STD/liter)**
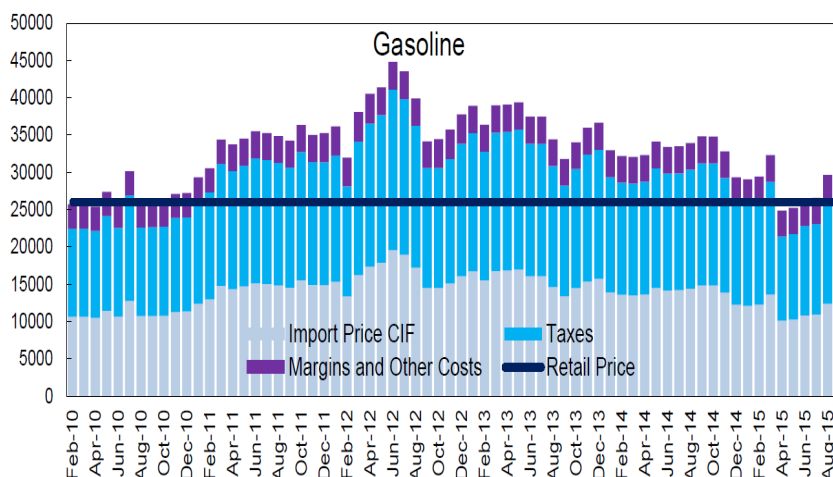
Source: IMF 2015, "Adopting and Implementing an Automatic Fuel Pricing Mechanism".

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29.   The government should take action to prevent implicit subsidies to ENCO. In order to prevent the negative price differential and the resulting implicit subsidy to ENCO and considering the current policy in place to align domestic prices to international market through the automated mechanism, the government should ideally increase retail prices as indicated by the underlining formula (Figure 17).
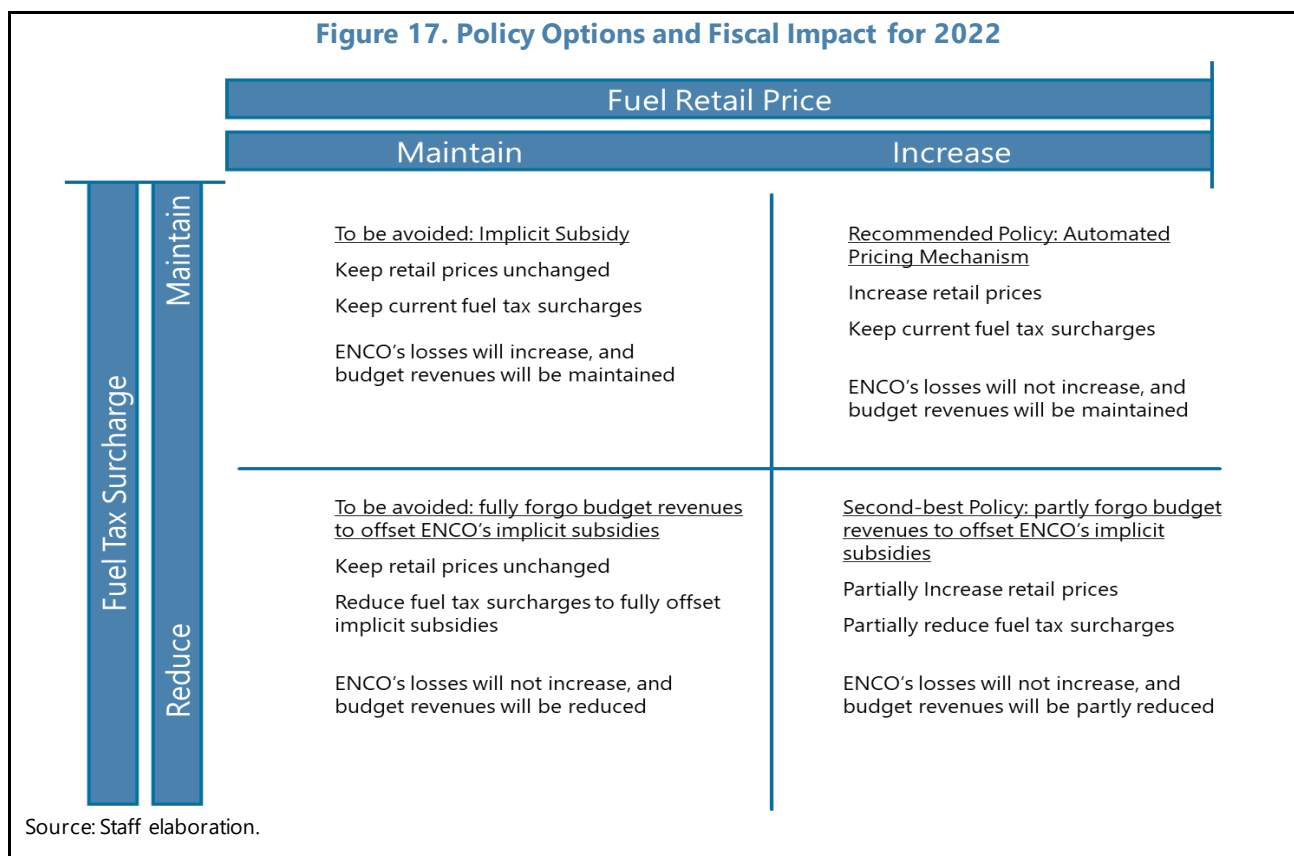
30.   Policy priorities should focus on:

- *Continue relying on the automatic fuel price adjustment mechanism* and maintaining retail prices aligned to international markets (continuous SB) to prevent implicit fuel subsidies and contain fiscal risks. Ideally, the government should increase retail prices to ensure full pass-through of international price changes to domestic prices. Under this option, government will not incur implicit subsidies to ENCO (Figure 17)

- *In case social considerations (amid the pandemic, power outages, and rising inflation) do not allow for implementing full pass-through of international prices,* the policy alternative would be to consider partially increasing retail prices and reducing fuel tax surcharges within the formula to offset the negative price differential and prevent implicit fuel subsidies to ENCO. Under this option, staff estimates the government will forgo around 60 to 80 million dobras in tax surcharges in 2022, which would be equivalent to the budget costing of preventing implicit subsidies to the oil company ENCO throughout the year.

- *Another to be avoided alternative* is maintaining retail fuel prices unchanged and reducing fuel tax surcharges within the formula to offset the negative price differential and prevent implicit fuel subsidies to ENCO (Figure 17). Under this option, the government will need to forgo higher portion of tax revenues than in the second-best option, to offset implicit subsidies to the oil company ENCO in 2022.

Figure 16. Macroeconomic Factors and Operational Factors Governing the Materialization of Fiscal Risks in the Energy Sector

Source: Staff.

Figure 17. Policy Options and Fiscal Impact for 2022

		Fuel Retail Price	
		Maintain	Increase
Fuel Tax Surcharge	Maintain	To be avoided: Implicit Subsidy Keep retail prices unchanged Keep current fuel tax surcharges ENCO's losses will increase, and budget revenues will be maintained	Recommended Policy: Automated Pricing Mechanism Increase retail prices Keep current fuel tax surcharges ENCO's losses will not increase, and budget revenues will be maintained
	Reduce	To be avoided: fully forgo budget revenues to offset ENCO's implicit subsidies Keep retail prices unchanged Reduce fuel tax surcharges to fully offset implicit subsidies ENCO's losses will not increase, and budget revenues will be reduced	Second-best Policy: partly forgo budget revenues to offset ENCO's implicit subsidies Partially Increase retail prices Partially reduce fuel tax surcharges ENCO's losses will not increase, and budget revenues will be partly reduced

Source: Staff elaboration.

E.   Climate Considerations on Addressing Fiscal Risks from the Energy Sector in STP

31.   Considering a climate change perspective for the overarching energy sector reform and fuel pricing policy, STP is contributing to the global effort of reducing emissions.[6] Indeed, changing the electricity generation matrix towards renewable sources, preventing implicitly (and explicit) subsidies to the oil company ENCO, and modernizing EMAE to achieve cost-recovery are measures that provides positive incentives towards reducing emissions of CO_2 and other pollutants. An interesting metric about these incentives relies on incorporating environmental costs, including carbon dioxide (CO_2) emissions, local air pollution, and broader externalities associated with fuel use (e.g., road congestion), to achieve the socially efficient price for fossil fuel and electricity. Parry and others 2021[7] define the socially efficient price by reflecting the full societal costs of fuel use: the supply costs (e.g., labor, capital, and raw materials), general taxes applied to household products, and the environmental costs of pollution and associated externalities.
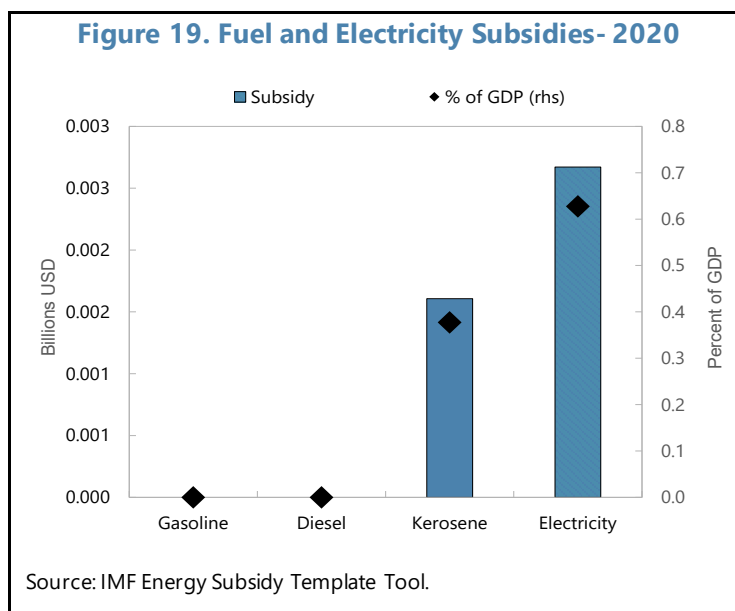
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[6] Paris Agreement and subsequent annual Convention of Parties (COP) meetings in the context of the United Nations Framework Convention on Climate Change (UNFCCC).

[7] IMF Working Paper: Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies, by Ian Parry, Simon Black, and Nate Vernon, September 2021.

32.   **A series of IMF reports (e.g., Parry and others 2014, Coady and others 2015 and 2019) presented and expanded a methodology to calculate environmental costs associated with CO2 emissions.** This is based on a diverse range of parameters including global climate and local outdoor ('ambient') air pollution damages, and local externalities such as congestion and road accidents. Parry and others 2021 updated the methodology with more country-based granular data and showed that fossil fuel and electricity is broadly underpriced worldwide when taking into considerations environmental costs and underpricing for local air pollution and climate damages are the two biggest sources of subsidies in the industry.

33.   **The current automatic fuel price formula broadly covers environmental costs, but it can be strengthened.** The automatic fuel price mechanism in STP, particularly the tax surcharge component, is sufficient to cover the costs associated with global warming and local pollution and externalities in the case of gasoline and diesel (Figure 18). This is not the case for kerosene and electricity, for which the current consumer prices fall below cost. On kerosene current retail prices cover supply costs and an adjustment to the surcharge component of the price formula would suffice to offset the environmental costs. On the other hand, prices of electricity are already relatively high in STP and the comprehensive energy sector reform agenda aims to address it by reducing the supply cost over the medium-term. Figure 19 shows the magnitude of the subsidies incurred by government on kerosene and electricity.

Figure 18. Fuel and Electricity Pricing- 2020

Source: IMF Energy Subsidy Template Tool.

Figure 19. Fuel and Electricity Subsidies - 2020

Source: IMF Energy Subsidy Template Tool.
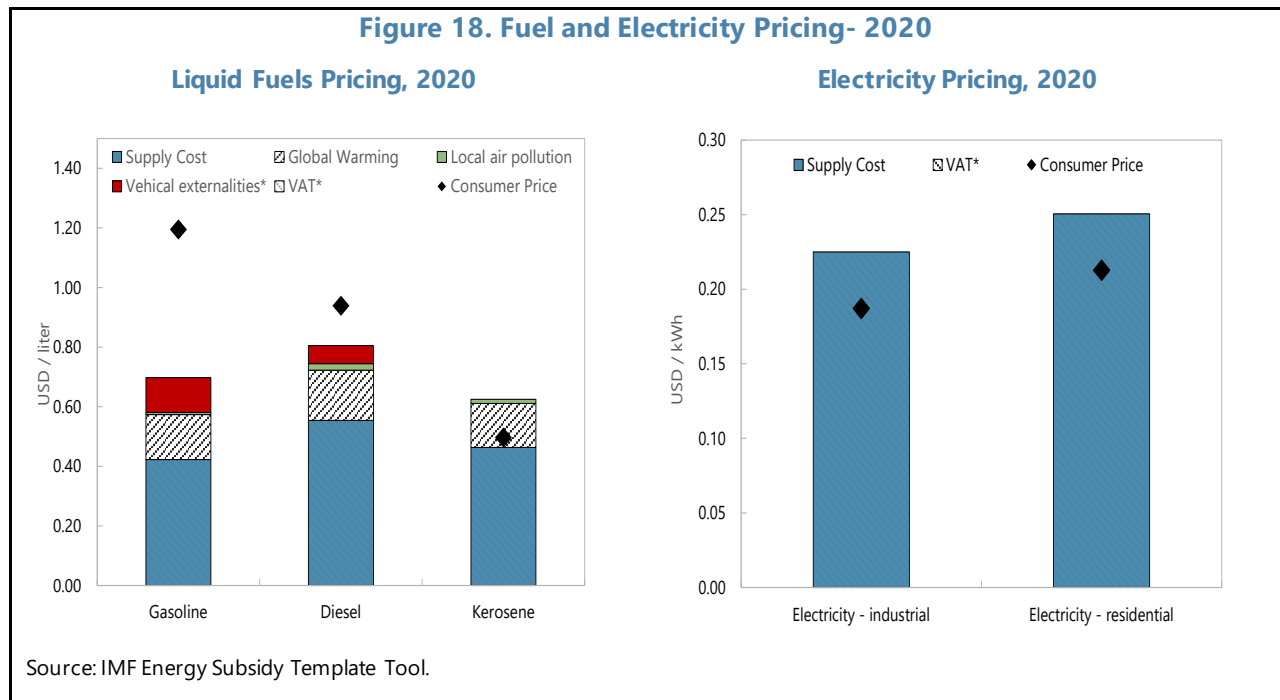
34.   Besides successfully functioning to prevent subsidies, even when accounting for environmental costs, the automatic fuel price mechanism generates tax revenues and can be better adjusted once revenue mobilization capacity is strengthened. The fuel pricing formula (Box 3) has been successfully preventing incurrence of implicit subsidies to the oil company ENCO, even when accounting for environmental costs (except in the case of kerosene), but also represents an important instrument to raise budget revenues given the current weak revenue mobilization capacity in the country. However, a medium-term action plan to strengthen revenue mobilization is currently in place and comprises the effective implementation of a value-added tax (VAT) in 2022 (which will also be levied over fuel products) and the modernization of tax administration services which include the: (i) reorganization of the Tax Authority (*Direção dos Impostos* - DI) to improve management and strategic planning focused on tax compliance; (ii) adoption of modern compliance risk management practices, including audit programs that make use of information from third parties; and (iii) overhaul of the current performance monitoring framework including key performance indicators and a rewards program.

35.   Once the revenue mobilization package has been fully implemented and the stock of arrears to ENCO has been cleared, authorities could gradually adjust the price formula. The applicable tax components (duty charge + tax surcharge) of the pricing formula can be adjusted to reflect VAT and other applicable taxes and the corresponding environmental cost (global and local pollution costs and externalities). Moving into this direction in the medium-term will enable STP to achieve the socially efficient price for fossil fuel and electricity without forgoing budget revenues.

36.   Policy priorities should focus on:

- *Continue relying on the automatic fuel price adjustment mechanism and maintaining retail fuel prices aligned to international markets (continuous SB) to prevent implicit fuel subsidies and contain fiscal risks.* In the medium-term and making sure the total revenue mobilization is not

reduced, the applicable taxes component (duty charge + surcharge) of the pricing formula could be gradually adjusted to reflect VAT and other applicable taxes and the corresponding environmental cost (global and local pollution costs and externalities). Moving into this direction will enable STP to achieve the socially efficient price for fossil fuel and electricity without forgoing budget revenues.

References

International Monetary Fund (2021): "Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies." Ian Parry, Simon Black, and Nate Vernon. IMF Working Paper 21/236. https://www.imf.org/en/Publications/WP/Issues/2021/09/23/Still-Not-Getting-Energy-Prices-Right-A-Global-and-Country-Update-of-Fossil-Fuel-Subsidies-466004

International Monetary Fund (2019): "Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates." Coady, David, Ian Parry, Nghia-Piotr Le, and Baoping Shang. Working Paper 19/89. https://www.imf.org/en/Publications/WP/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509

International Monetary Fund (2015): "The unequal benefits of fuel subsidies revisited: evidence for developing countries." Coady, David, Valentina Flamini, and Louis Sears. IMF Working Paper 15/250. https://www.imf.org/external/pubs/ft/wp/2015/wp15250.pdf

International Monetary Fund (2015): "How Large Are Global Energy Subsidies?" David Coady, Ian W.H. Parry, Louis Sears and Baoping Shang. IMF Working Paper 15/105. http://www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf

International Monetary Fund (2015): "Adopting and Implementing an Automatic Fuel Pricing Mechanism." Mark De Broeck, Dalmacio Benicio, Emine Hanedar. TA Report.

International Monetary Fund (2013): "Energy Subsidy Reform in Sub-Saharan Africa: Experiences and Lessons." IMF African Departmental Paper 13/01 http://www.imf.org/external/pubs/ft/dp/2013/afr1302.pdf

EMAE, ENASA, ENAPORT, CORREIOS Annual Financial Statements 2017 to 2020 https://www.financas.gov.st/index.php/publicacoes/documentos/category/147-publicacoes

EMAE Management Improvement Plan (MIP).

EMAE Least Cost Development Plan (LCDP).

Annex I. Frat Questionnaire

RISK-BY-RISK REPORT - MACROECONOMIC RISKS SPECIFIC TO SÃO TOMÉ AND PRÍNCIPE	⌂

FISCAL RISK IDENTIFICATION

Description

Macroeconomic volatility tends to make it difficult to work with fiscal projections, especially in small and open economies like ours, where the dynamics of most macroeconomic variables, including the prices of the raw materials we export, are determined by external factors.

Probable channels for the realization of the fiscal risks

■	Growth	■	Exchange rate
■	Inflation	■	Terms of trade (incl. commodity prices)
☐	Global interest rates	☐	Remittances
☐	Domestic interest rates	☐	Others (please specify)

Underlying risk drivers

■	Domestic economic conditions	■	Environmental conditions
■	International macroeconomic and political conditions	☐	Operational risks
■	Financial market conditions	☐	Others (please specify)

Historical fiscal risk realizations

Historical fiscal risk realizations		
Year	Fiscal impact	Comments on realized fiscal risk impact
2020	High	*Fuel supply has been unilaterally reduced by Sonangol.*
2019	High	*Instability in the supply of electricity due to technical problems in thermal generators.*
2018		
2017		
2016		
2015		
2014		
2013		
2012		
2011		

Historical frequency of annual risk realization

Fiscal aggregates affected when fiscal risks are realized

Flow measures		*Stock measures*	
☐	Tax Revenues	☐	Financial assets
☐	Non-tax revenues	☐	Non-financial assets
■	Capital expenditures	■	Debt liabilities
■	Recurrent expenditures	☐	Other liabilities

Institution responsible for managing the risks

- ■ Ministry of finance
  - ■ └ Macro-fiscal unit
  - □ └ Fiscal risk unit
  - ■ └ Budget office
  - □ └ Debt management office
  - □ └ Others (please specify)

- ■ Central bank
- □ Other independent body
- □ Other ministry/government agency (please specify)

Interactions with other sources of risks

- ■ Macroeconomic risks

- ■ Specific revenues
- □ Government assets and liabilities
- ■ Public corporations
- □ Government guarantees
- ■ Public investment
- □ Public private partnerships
- ■ Financial sector
- □ Environmental risks
- □ Legal claims against the state
- □ Lower-level governments
- □ Natural resources

- □ Policy implementation
- □ Governance and capacity

FISCAL RISK QUANTIFICATION

Availability of information and data to support risk quantification

YES	Historical series (10 years or more) of major macroeconomic aggregates (real/nominal GDP growth, inflation, interest rates, exchange rate, commodity prices)	
YES	Historical series (10 years or more) of major fiscal aggregates (revenue, expenditure, fiscal balance, debt)	
NO	Historical series (10 years or more) of estimates of the impact of large fiscal policy changes	
PARTIAL	Historical series of macroeconomic forecast vintages (over at least five budget years)	Thsi data monitoring process will be organized by the macro-fiscal unit UMF.
YES	Historical series of fiscal forecast vintages (over at least five budget years)	
YES	Multiyear forecasts of major macroeconomic aggregates (real/nominal GDP growth, inflation, interest rates, exchange rate, oil prices)	
YES	Multiyear forecasts of major fiscal aggregates (revenue, expenditure, fiscal balance, debt)	
NO	Long-term trends (10 to 50 years ahead) of real/nominal GDP growth and identification of key drivers (demographics, productivity, etc.)	

Note:

■ YES ■ PARTIAL ■ NO

Analyses conducted

NO	Historical volatility of macroeconomic indicators	
YES	Estimates for elasticities of revenue/expenditure to GDP	
NO	Sensitivity analyses	
NO	Alternative scenario analyses	
NO	Probabilistic analyses (fan charts, etc.)	
NO	Fiscal forecast error analysis	
NO	Long-term fiscal sustainability analyses (e.g. using the IMF debt sustainability framework, or IMF demographics tool)	

Note:

■ YES ■ PARTIAL ■ NO

Institutions retaining information and data, and conducting analyses

	Information and data	Analyses
Ministry of finance	■	■
Line ministry(ies)		
Statistical agency		
Central bank	■	■
Private sector organizations		
International organizations	■	■
Others (please specify)		

RISK ASSESSMENT AND PRIORITIZATION

Impact-likelihood matrix

Rationale for assessment

Potential fiscal impact	If macroeconomic risks materialize the impact on revenues are important and the state will face challenges to maintain spending.
Likelihood of realization	It is likely that risks affecting fiscal aggreagtes materializes within 3-5 years.

Risk prioritization

Source of risk	Fiscal impact	Likelihood	Risk rating	Mitigation strategy	Priority actions
Macroeconomic	Medium	Probable	High	No	High priority

Risk mitigation and provisioning

Mitigation strategies	*Description*
Structural reforms	
Direct controls	
Indirect tools (regulations and charges)	
Risk transfer instruments	

Provisioning	*Description*
Expense	
Contingencies	
Buffer funds	

RISK-BY-RISK REPORT - PUBLIC CORPORATIONS SPECIFIC TO SÃO TOMÉ AND PRÍNCIPE ⌂

FISCAL RISK IDENTIFICATION

Description

The government has a strong interest in supporting public corporations because they account for a large share of public investment and employ many people. Hence, the implicit support provided by government is significant and the government's willingness to bail out public corporations not performing well is high.

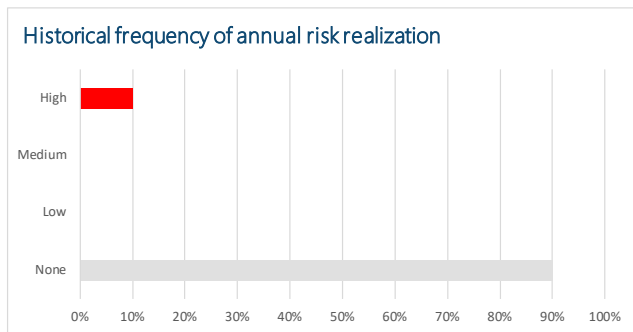Probable channels for the realization of the fiscal risks

☐ Dividends, taxes, and royalties
☐ Repayment of government (on-lent) loans
☑ Current transfers (e.g., subsidies)
☑ Calls on implicitly guaranteed debt
☑ Capital injections
☐ Valuation changes in government's equity position
☐ Calls on government guarantees
☑ Arrears from the government to the corporations

Underlying risk drivers

☑ Domestic economic conditions
☐ Environmental conditions
☑ International macroeconomic and political conditions
☑ Operational risks
☑ Financial market conditions
☐ Others (please specify)

Historical fiscal risk realizations

Year	Fiscal impact	Comments on realized fiscal risk impact
2020	High	*Payment of arrears*
2019		
2018		
2017		
2016		
2015		
2014		
2013		
2012		
2011		

Historical frequency of annual risk realization

Fiscal aggregates affected when fiscal risks are realized

Flow measures

- ☐ Tax Revenues
- ☐ Non-tax revenues
- ■ Capital expenditures
- ■ Recurrent expenditures

Stock measures

- ☐ Financial assets
- ☐ Non-financial assets
- ■ Debt liabilities
- ☐ Other liabilities

Institution responsible for managing the risks

- ■ Ministry of finance
  - ☐ └ Macro-fiscal unit
  - ☐ └ Fiscal risk unit
  - ☐ └ Budget office
  - ☐ └ Debt management office
  - ■ └ Others (please specify)

- ■ Central bank
- ☐ Other independent body
- ■ Other ministry/government agency (please specify)
  - ■ └ *Ministry of Energy and Infrastructure*

Interactions with other sources of risks

- ■ Macroeconomic risks

- ☐ Specific revenues
- ☐ Government assets and liabilities
- ■ Public corporations
- ☐ Government guarantees
- ☐ Public investment
- ☐ Public private partnerships
- ☐ Financial sector
- ☐ Environmental risks
- ☐ Legal claims against the state
- ☐ Lower-level governments
- ☐ Natural resources

- ☐ Policy implementation
- ☐ Governance and capacity

FISCAL RISK QUANTIFICATION

Availability of information and data to support risk quantification

Historical series (at least five years) of transfers between the government and public corporations	The information is not explicilty informed in the fiscal reports.
Audited financial statements of major public corporations (at least five years) - income statement, cash flow statement, balance sheet	Audited statements are available with long delay.
Ownership policy / strategy	
Information / estimates of indirect support provided to public corporations	
Quasi-fiscal activities performed by public corporations	
Corporate plans of major public corporations	
Records of individual bailout episodes	

Note:

YES	PARTIAL	NO

Analyses conducted

🟧	Summary information on the financial performance and position of the public corporations sector	The Treasury prepares some reports on performance of SOEs but not on a regular basis.
🟥	Analysis of financial ratios of SOEs	
🟥	Stress test of public corporations	

Note:

🟩 YES   🟧 PARTIAL   🟥 NO

Institutions retaining information and data, and conducting analyses

Information and data	Analyses	
■		Ministry of finance
■		Line ministry(ies)
		Statistical agency
	■	Central bank
		Private sector organizations
		International organizations
		Others (please specify)

RISK ASSESSMENT AND PRIORITIZATION

Impact-likelihood matrix

Rationale for assessment

Potential fiscal impact	Government will have to step in to maintain operations of EMAE and ENCO. The current electricity shortage crisis is still unresolved.
Likelihood of realization	Some SOEs have suffered hardships in revenue collection and decreased demand as a result of the COVID pandemic. They may require additional government support in the short-term.

Risk prioritization

Source of risk	Fiscal impact	Likelihood	Risk rating	Mitigation strategy	Priority actions
Public corporations	High	Probable	Critical	No	Critical

List Of Documents Used in Compiling the Questionnaire

Budget documents 2012-2022.
https://www.financas.gov.st/index.php/publicacoes/documentos/category/101-oge 21/236
Report on Macroeconomic Forecasts.
https://bcstp.st/Container_plus.aspx?y=RH24LUpWR/2gEEo/z1Ffmw==
SOEs Financial Statements 2015-2020.
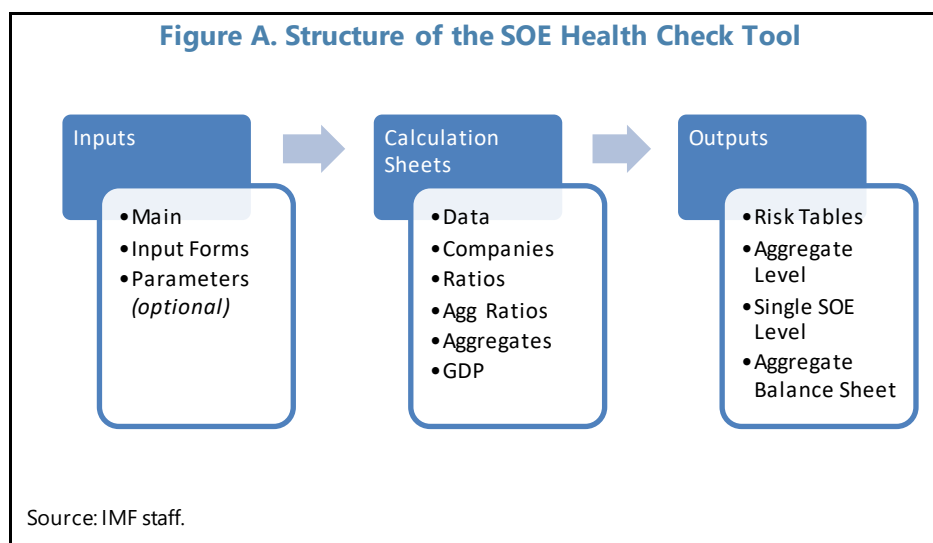https://www.financas.gov.st/index.php/publicacoes/documentos/category/147-publicacoes
Fiscal Reports. https://bcstp.st/Banco-
Central?x=wOgqPO8BlRrdHdPOd1%2BEuA==&&z=xeXdw3gLrGHyaVGvvB5nEA==

Annex II. SOE Health Check Tool

The IMF's SOE Health Check Tool offers a standardized methodology to assess risks from SOEs. FAD developed the tool to offer authorities and IMF staff a way of monitoring their portfolio of SOEs with the goal of improving oversight and fiscal risk management. The tool standardizes inputs, calculations and outputs (Figure A). Key outputs include a risk rating[1] of SOEs based on financial ratios for profitability, solvency, and liquidity; financial information and ratios of individual SOEs and the SOE sector in aggregate; as well as inputs for the compilation of a public sector balance sheet. The tool requires the following inputs:

- General information (country, currency, number of SOEs, years of analysis);

- Key information about the SOEs (name, sector, type, ownership structure);

- Abridged financial statements (balance sheet and income statement);

- Transactions between government and SOEs (guarantees, on-lending, subsidies, capital injections); and

- A choice of financial ratios and risk rating thresholds.[2]

Figure A. Structure of the SOE Health Check Tool

Inputs	Calculation Sheets	Outputs
• Main • Input Forms • Parameters *(optional)*	• Data • Companies • Ratios • Agg Ratios • Aggregates • GDP	• Risk Tables • Aggregate Level • Single SOE Level • Aggregate Balance Sheet

Source: IMF staff.

Adoption of the SOE Health Check Tool by the Ministry of Finance would streamline and strengthen the analysis of SOEs and the assessment its fiscal risks. MOF could use the tool to standardize the calculation of financial ratios, their conversion into risk ratings using consistent risk rating thresholds, as well as the illustration of outputs for internal and external reporting across SOEs, and

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[1] Very low risk, low risk, moderate risk, high risk, and very high risk. Risk ratings are rankings. Overall risk ratings are arrived at by taking the arithmetic average of risk ratings of individual financial ratios.

[2] The tool is pre-set with a choice of financial ratios and risk rating thresholds. However, users can adapt these to the country-specific context.

for the SOE sector in aggregate. The use of the tool could foster discussions and peer learning; save time; and facilitate the communication of MoF's work, including to a non-technical audience through the use of risk ratings and heatmaps that are intuitive and easily visually comprehensible.

Adopting the SOE Health Check Tool requires several steps to be taken by MoF, including:

- Adopting a matching table between SOE financial statements and the abridged balance sheet and income statement in the SOE Health Check Tool. Staff developed a matching table mapping items included in the SOE's chart of accounts as well as additional items found in one or more of the SOEs' 2020 financial statements with the line items included in the SOE Health Check Tool. MoF could update this table based on an audit of the line items used by all SOEs under its remit and automating the matching using LOOKUP and SUMIF formulas in Excel.

- Collect and input information from SOE financial statements. Information ideally includes the historical audited financial statements for the last five to ten years, as well as provisional data for 2021 and budget information for 2021.[3]

- Collect and input information on financial transactions between SOEs and the government on an SOE-level. Assessing fiscal risks from individual SOEs and their ability to operate on an arms-length relationship with the government requires this information to be input to the SOE Health Check Tool for individual SOEs to complement the analysis of financial ratios for profitability, solvency, and liquidity.

- Review the tool's default settings for financial ratios used and risk thresholds. Based on international experience and available data, staff used cost recovery and return on equity to assess profitability; the current ratio and debt turnover days to assess liquidity; and debt to assets and debt to equity to assess solvency. However, the tool allows users to choose from a set of 13 indicators. Furthermore, the tool contains preset risk rating thresholds for each ratio.[4] While the choice of thresholds is based on international experience and standards[5] they do not take into account the STP context.

- Ensure the use of a common methodology across SOEs. Initially, MoF may use a commonly agreed upon version of the SOE Health Check Tool. This requires a discussion and agreement on the choice of ratios and the respective thresholds, as well as version control. Over time, MoF may consider adapting the tool to sector-specific factors.

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[3] As new information becomes available (e.g., from quarterly budget execution reports or the submission of audited financial statements), data in the SOE Health Check Tool should be updated.

[4] Under worksheet "Parameters". For example, for the return on equity, a ratio of more than 15 percent corresponds to a very low risk rating; between 8 and 15 percent corresponds to a low risk rating; 0 to 8 percent to a moderate risk rating; -10 to 0 percent to a high risk rating; and anything worse than -10 percent to a very high risk rating.

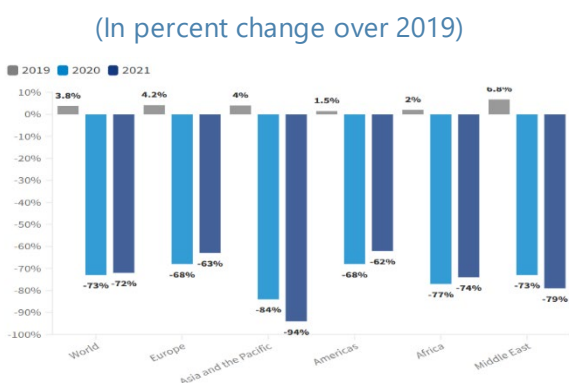[5] E.g., those set by credit rating agencies, such as Standard & Poor's in its "Corporate Methodology" available at https://www.spratings.com/scenario-builder-portlet/pdfs/CorporateMethodology.pdf.

THE TOURISM SECTOR IN SÃO TOMÉ AND PRÍNCIPE[1]

The global pandemic shock has caused an unprecedented shock to the tourism industry, severely impacting tourism-dependent economies such as São Tomé and Príncipe. This chapter seeks to examine the recent developments in the tourism sector in São Tomé and Príncipe. It further examines the outlook for recovery prospects and outlines some policy priorities given the economic vulnerability to the tourism shock and the need to minimize scarring and protect the vulnerable workers.

A.   Recent Trends in the Tourism Sector

1.   Global tourism has suffered the worst year on record in 2020 following the unprecedented fall in demand and widespread travel restrictions, and recovery remained slow in 2021. According to UNWTO (2021) and UNWTO (2022), international arrivals dropped by 73 percent in 2020 (1 billion fewer arrivals) than in 2019. The collapse in international travel represented an estimated loss of USD 1.3 trillion in export revenues, more than 11 times the loss recorded during the 2009 global economic crisis. Africa recorded a 77 percent drop in tourist arrivals in 2020. In 2021, international travel is still suffering from the pandemic. International tourist arrivals (overnight visitors) in 2021 were 72 percent down when compared to the same period of pre-pandemic year 2019. The pace of recovery remained slow. After a weak start of the year, international tourism saw a modest improvement during the months of June and July 2021, driven mainly by vaccinations and the reopening of many destinations to international travel, mostly in Europe and the Americas. In Africa, international travel dropped by 77 percent in the first seven months of 2021 compared to the same period of 2019. While the annual arrivals to Africa showed a 12 percent increase in 2021 compared to 2020.

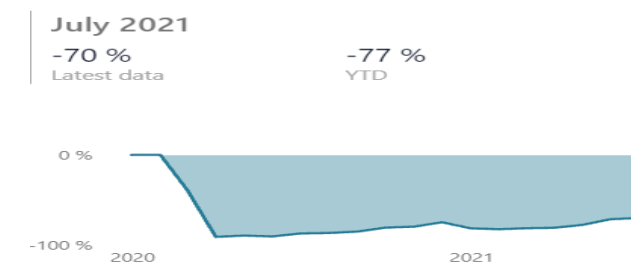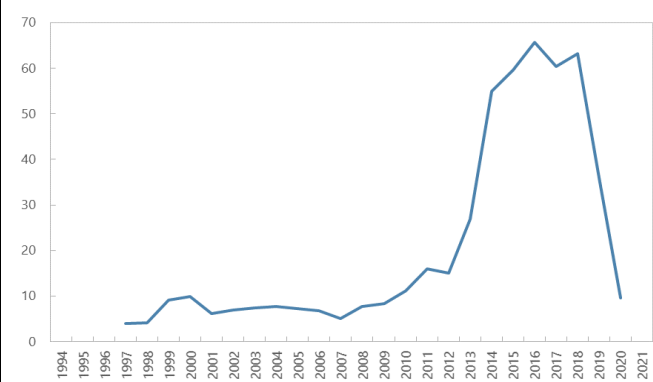| Figure 1. International Tourist Arrivals, by region, 2019-2021	Figure 2. International Tourist Arrivals, Africa, 2020-July 2021
(In percent change over 2019)	Source: UNWTO
Source: UNWTO. Note: Change over 2019 (provisional data).	

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2.   **Tourism in São Tomé and Príncipe has been hard hit by the Covid-19 shock, as other tourism-dependent countries in Africa.** Tourist arrivals experienced an unprecedented collapse since the pandemic. In 2020, tourist arrivals decreased by 70 percent, while tourism revenue decreased by 74 percent, compared to 2019. Travel restrictions led to a significant decrease in tourist demand from the major markets both from Africa and from other regions. Tourist arrivals and tourism receipts declined to the levels of around ten years ago. In 2021, tourist arrivals have made steady recovery, with total number of travelers reached to 15,100 compared to the low level of 10,786 in 2020.

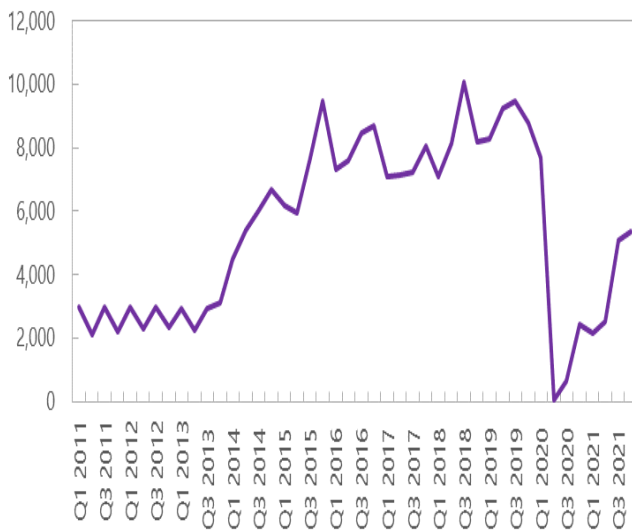| Figure 3. Total Number of Travelers, STP, Annual,1994–2021	Figure 4. International Tourism Receipts, STP, Annual,1994–2020 (In millions of USD)
Source: BCSTP; IMF staff calculation	Source: BCSTP; IMF staff calculation
Figure 5. Total Number of Travelers, STP, 2001Q1-2021Q4	Figure 6. International Tourism Receipts, STP, 2001Q1-2021Q2 (In millions of USD)
Source: BCSTP; IMF staff calculation	Source: BCSTP; IMF staff calculation
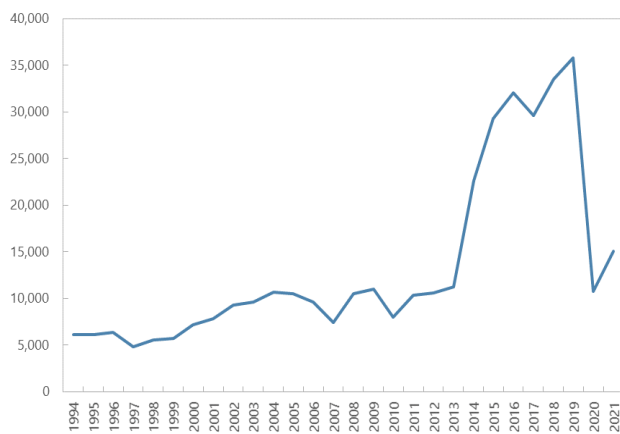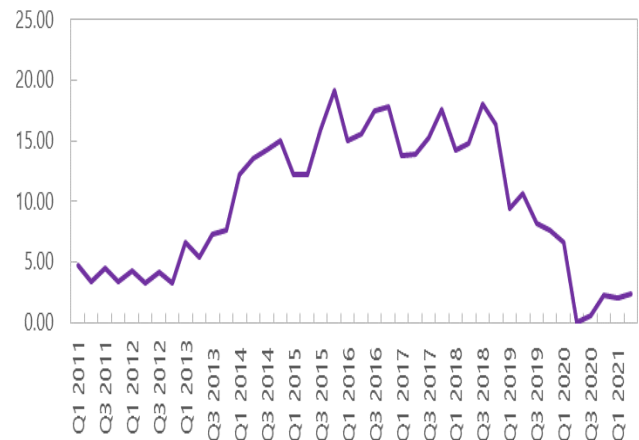
3.   Travel and tourism made important contribution to employment and GDP in São Tomé and Príncipe, while the pandemic shock has had a significant negative impact. Travel and Tourism has made substantial direct contribution to employment, which increased steadily since 2012 to account for more than 10 percent of total employment, and the levels are higher than the SSA average. Travel and tourism contributed to 13.8 percent of total employment in 2019, and it suffered a 36 percent decline with around a loss of more than five thousand jobs. The pandemic is expected to have lasting impact on the employment in tourism sector and it will take time to recover. The pandemic shock has adverse impact on exports of services and on GDP growth. The adverse impact on the economy was large since tourism is a key sector for São Tomé and Príncipe. Economy Services exports decreased by around 46 percent in the second to fourth quarters of 2020 compared to the same periods of 2019, mainly reflecting the fall in demand for tourism. The overall economy was also impacted negatively, but the growth was protected mainly by the external support from donors including the support from the IMF. Based on the forecast of World Travel & Tourism Council, the travel and tourism direct contribution to GDP[2] is expected to gradually recover in São Tomé and Príncipe in the next few years.

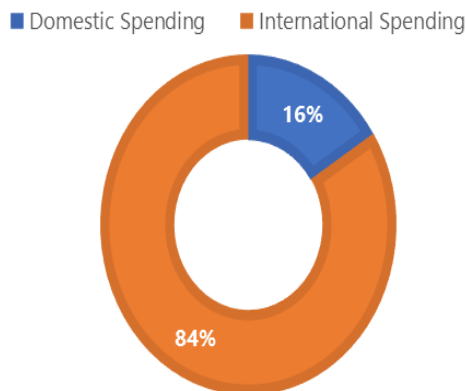| **Figure 7. Travel and Tourism Direct Contribution to Employment** (In percent)	**Figure 8. Travel and Tourism Direct Contribution to GDP** (In billions of USD)
 Source: World Travel & Tourism Council	 Source: World Travel & Tourism Council
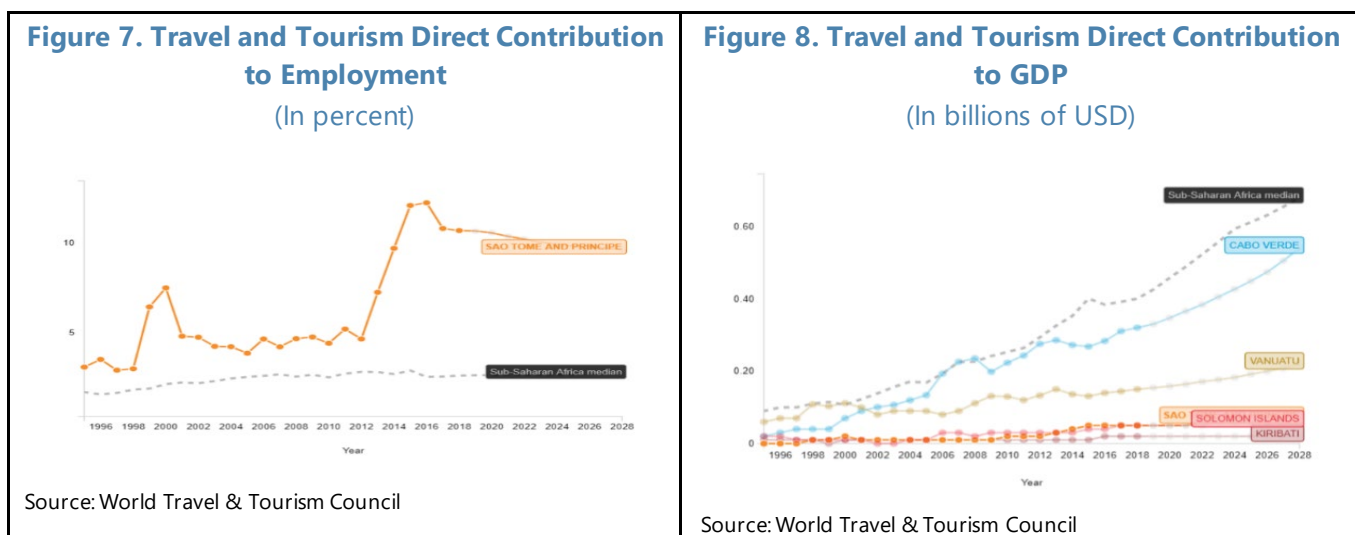
B.   Characteristics and Recovery Prospects of the Tourism Sector

4.   The economy of São Tomé and Príncipe has a high dependence on tourism, which makes it more vulnerable to the impact of the Covid-19 shock. Tourism receipts accounted for more than 70 percent of total service exports in 2019. Tourism also has large spillover effects to related industries, including hotels, restaurants, retail, transport, construction, and other services. São Tomé and Príncipe's economy has a very high dependence on tourism related industries. In 2019, total contribution of travel and tourism to GDP for São Tomé and Príncipe was 14.7 percent of total economy in 2019 using WWTC data, and it declined to 6.1 percent of total in 2020.

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[2] Based on the World Travel and Tourism (WWTC) database, the direct contribution of travel & tourism to GDP is calculated to be consistent with the output of tourism-characteristic sectors such as hotels, airlines, airports, travel agents and leisure & recreation services that deal directly with tourists (WTTC/Oxford Economics 2020).
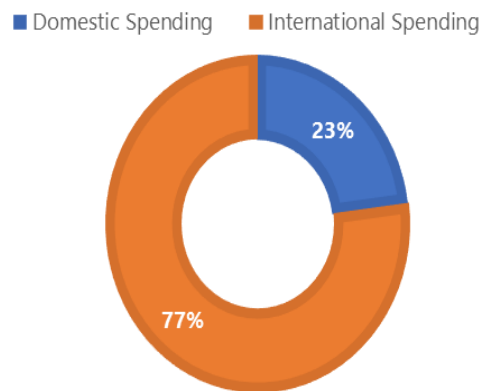
5.   **The tourism sector in São Tomé and Príncipe is highly reliant on foreign/inbound tourism, which makes it a less favorable position regarding the prospects for a near-term recovery.** Based on data from the WWTC annual research country highlights, international spending accounted for 84 percent of total travel spending in 2019, while domestic spending was only 16 percent of total spending. In 2020, international spending continued to dominant which accounted for 77 percent of total travel spending. The high reliance of São Tomé and Príncipe's tourism on international arrivals indicates a slower near-term recovery prospect as international travel restrictions will be eased at a slower pace than domestic tourism. The smaller share of domestic tourism also reflects its relatively minor contribution from its rebound to offset the drop in international arrivals. In addition, the full dependence on air travel also makes it highly susceptible to travel restrictions.

Figure 9. Domestic Spending and International Spending on Travel, STP, 2019	Figure 10. Domestic Spending and International Spending on Travel, STP, 2020
Source: World Travel & Tourism Council	Source: World Travel & Tourism Council

6.   **São Tomé and Príncipe's lower dependency on business travel is more favorable for recovery prospects.** When evaluating travel exports by type, São Tomé and Príncipe has a high ratio of personal travel and low reliance on business travel, official mission, and other trips. As shown in the charts, both the increases in number of travelers and the travel exports in the last two decade are mainly driven by tourism (personal travel). In 2019, personal tourism contributed to 70 percent of total number of travelers, and 73 percent of total travel exports. In 2020, the relative small declines in business travel and official mission helped to complement the big decline in personal travel. These trends of overall lower dependency on business travel could suggest a quicker rebound of tourism in São Tomé and Príncipe, since business tourism may be more severely affected post-Covid-19.

Figure 11. Number of Travelers by Type, STP, 2010-2020
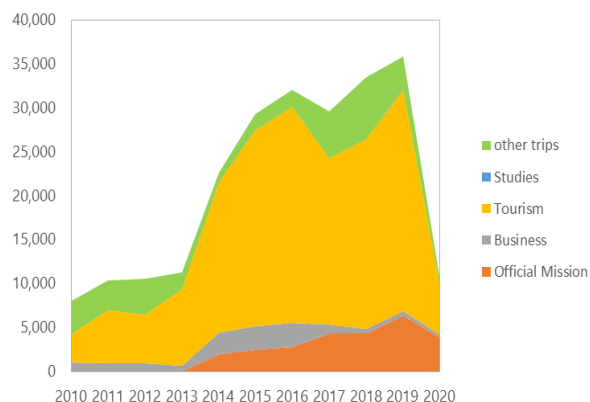
Source: BCSTP; IMF staff calculations.

Figure 12. Travel Exports by Type, STP, 2010-2020

(In millions of USD)
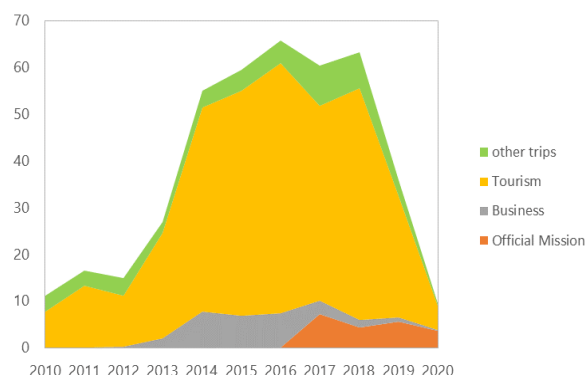
Source: BCSTP; IMF staff calculations.

7.   In addition, progress on vaccination in source countries and growth recovery in source markets are important for recovery prospects. As regard to the vaccination progress among the top source market countries, Portugal has reached a very high vaccination rate with around 90 percent of population fully vaccinated by February 2022. France is also very advanced in vaccinating their population, with 77 percent of population having already completed full vaccinations. Angola has around 32 percent of population completed at least one dose

Figure 13. Travelers by Source Markets

Source: BCSTP; IMF staff calculations.

and 16 percent of population who are fully vaccinated as of February 2021. The faster recovery to pre-pandemic growth rates of source markets would also help to the tourism recovery in São Tomé and Príncipe. According to the Oct 2021 WEO, the Euro area is expected to have a real GDP growth rate of 5 percent in 2021 and 4.3 percent in 2022.
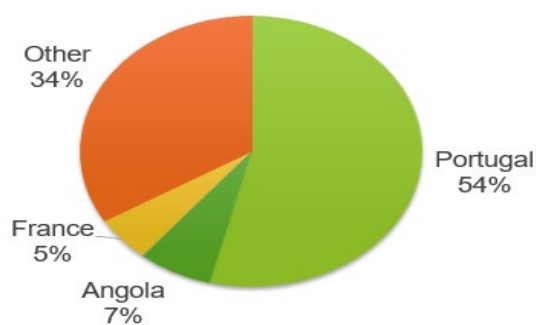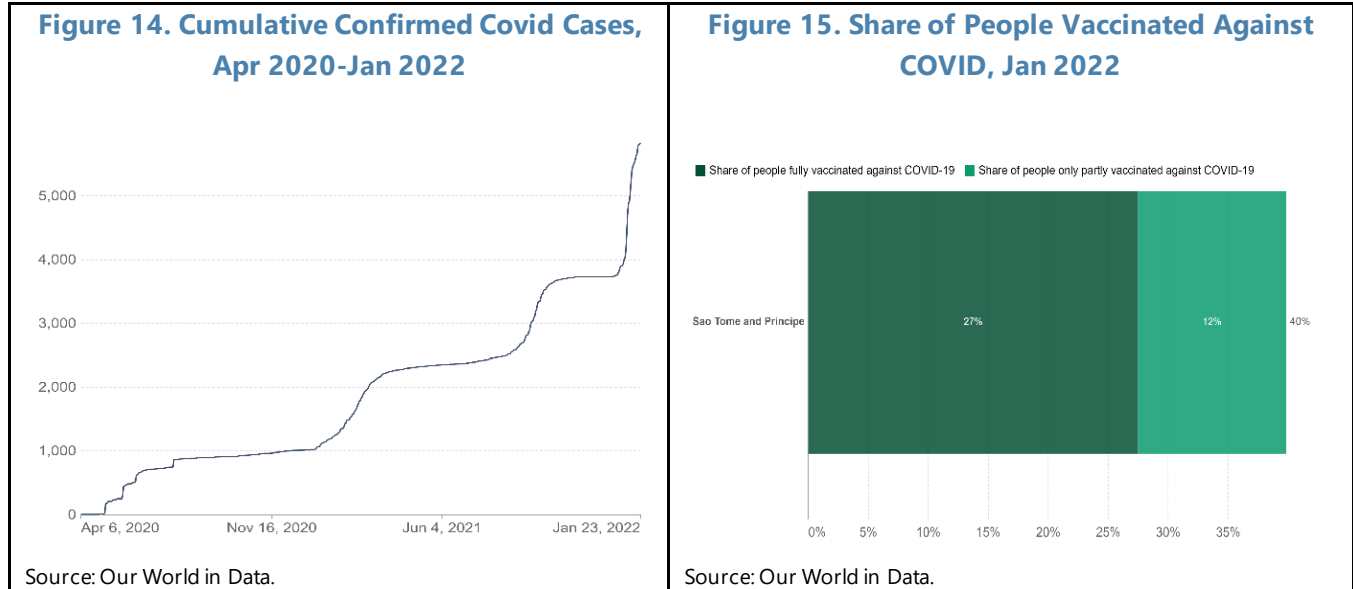
8.   Furthermore, the development of health conditions and progress of vaccinations in São Tomé and Príncipe are essential for the speed of recovery. Good health conditions would help to attract tourists once travel restrictions are lifted. In São Tomé and Príncipe, from January 2020 to February 2022, there have been 5,932 confirmed cases of COVID-19 with 72 deaths, reported to WHO. The Covid Case ratio in total population in São Tomé and Príncipe is relatively low compared to other regions such as Europe, North America, and South America. São Tomé and Príncipe also made a good progress in vaccination. As of February 2022, a total of 182,000 vaccine doses have been administered, with around 28 percent of total population fully vaccinated.

Figure 14. Cumulative Confirmed Covid Cases, Apr 2020-Jan 2022

Source: Our World in Data.

Figure 15. Share of People Vaccinated Against COVID, Jan 2022

Source: Our World in Data.

C.   Outlook for Tourism

9.   Research has suggested some recovery in international tourism in 2021 over the low levels of 2020, but international tourism remained well below 2019 levels. Based on the UNWTO World Tourism Barometer and Statistical Annex (Sep 2021, and Jan 2022), international tourism saw a modest improvement in 2021 with 15 million more international tourist arrivals (4 percent increase) compared to 2020. The increase was mainly driven by increased traveler confidence, progress on vaccinations, and border reopening of many destinations to international travel, mostly in Europe and the Americas. However, international tourist arrivals were still 72 percent lower than the pre-pandemic year of 2019. In addition, the pace of recovery was uneven across regions. According to the UNWTO report, small islands in the Caribbean, Southern Mediterranean Europe, and Central America recorded the best performance in 2021 with quicker recovery than other regions.

10.   A full recovery to pre-pandemic levels is expected only in the medium term. The Oct 2021 WEO points out that trade volumes are expected to grow almost 10 percent in 2021, moderating to about 7 percent in 2022 and 3.5 percent in medium term, in line with the projected broader global recovery. Countries which are more tourism dependent are projected to suffer larger declines in activity compared to the pre–COVID-19 forecasts. Travel restrictions and lingering fears of contagion are likely to weigh on cross-border tourist activity until virus transmission declines durably. According to the Nov 2021 and the Jan 2022 UNWTO reports, more than half of the experts continue to expect a rebound in 2022, driven by unleashed pent-up demand, mostly during the third quarter of 2022. Nearly forty percent of the respondents expect a potential rebound in 2023. A majority of experts now expect a return of international arrivals to 2019 levels only in 2024 or later. The UNWTO Confidence Index shows a slight decline in January to April 2022, mainly due to the recent rise in COVID-19 cases and the Omicron variant. The ETC (2021Q3) report indicated according to Tourism Economics' latest baseline, European international arrivals are forecast to be 60 percent below 2019 levels in 2021. European travel demand is poised for a major recovery with

the highest vaccination rate among the world regions, but volumes are still far from the pre-pandemic days which are not expected to return until 2024. The recent Eurocontrol forecasts (Oct 2021) expects that air traffic in Europe would return to 2019 levels by end of 2023 in the baseline scenario, with the assumptions of vaccine roll-out reaching herd immunity levels within Europe with reliable vaccine in 2021, limited travel restriction, and coordinated European approach.

11.   The recovery of tourism in São Tomé and Príncipe will be impacted by the pace of the vaccination rollout, the coordination among countries on travel procedures, and the economic situation of source markets. Vaccine developments help to shift the balance of risks and elevate the upside potential, while infection waves and protracted containment measures could further delay the recovery of tourism sector. Tourist arrivals data shows a recovery of 42 percent of the 2019 level in 2021. The authorities shared their views of a full recovery in travel exports to pre-pandemic level expected to take place by 2023 or 2024.

12.   The outlook of international travel and tourism also implies shifts in characteristics and provides new opportunities. As pointed out by the report of WTTC (2021), challenges in the tourism recovery can be converted into opportunities and make the sector adapt to ultimately return stronger. From a demand perspective, COVID-19 is transforming tourist behaviors toward the familiar, predictable, trusted, and even low risk. Domestic and regional vacations, extensive research and planning, and the outdoors will reign in the short term, with tourism businesses and destinations already adapting accordingly. Health and safety will be important. Travel regulations and flexible polices will guide consumer behavior in short to medium term. Collaboration of business with their extended value chains, especially employees and suppliers, to ensure implement protocols is important. Innovation and the integration of new technologies are helpful to provide safe and seamless travel experiences. Tourism sector needs to make meaningful changes to adapt to the needs of social, environmental, and institutional sustainability. Government support, regional and international coordination are crucial for the swift recovery of the tourism sector.

D.   Policy Priorities

13.   São Tomé and Príncipe has adopted various measures to support the economy and tourism sector. Main policy measures[3] include: 1) Fiscal measures to increase spending on epidemic prevention and readiness, provide social assistance and protect small businesses; 2) Monetary policies to ease pressure on the banks and increase liquidity; 3) External support from international communities including the World Bank and the IMF; 4) The authorities declared a state of emergency in March 2020 including the suspension of all international passenger flights. The government moved to the three phases of reopening started from June 2020. The country has reopened hotels, restaurants, commercial flights, and extended the operation of commerce and public service to normal hours and started in-person classes at universities. All air passengers arriving in São Tomé and Principe are required to have proof of a negative coronavirus PCR test taken in the 72 hours prior to their arrival; 5) On jobs and skills, measures include expansion of social

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[3] Summarized based on UNWTO compilation of country policy measures to support travel and tourism.

assistance to the most vulnerable and increased support to the disadvantaged, protecting small businesses and employment in particular through salary contributions and state-guaranteed loans, and financial assistance to workers who lost their jobs in both the formal or informal sectors.

14.   Continued targeted support measures to the tourism sector are warranted in the short term given their systemic importance to the economy. Policy priorities could focus on facilitating travel, such as rolling out vaccinations swiftly, travel policies to facilitate transport and boarder entry, and promoting marketing for tourism to boost tourism revenues. Other important policy measures include providing liquidity for business, protecting jobs, recovering confidence through safety and security, public and private sector collaboration, harmonizing and coordinating protocols and procedures, adding value jobs through new technologies, and encouraging innovation and sustainability as the new normal.

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