DEMOCRATIC REPUBLIC OF SÃO TOMÉ AND PRÍNCIPE

SELECTED ISSUES

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INTERNATIONAL MONETARY FUND

DEMOCRATIC REPUBLIC OF SÃO TOMÉ AND PRÍNCIPE

SELECTED ISSUES

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PROSPECTS OF GROWTH IN SÃO TOMÉ AND PRÍNCIPE. A COMPARATIVE CASE STUDY[1]

A.   Introduction

1.   Economic performance in São Tomé and Príncipe(STP) has lagged behind other small island-states in Africa.[2] STP has many historical and socio-economic features in common with the other small island-states in Africa—Cabo Verde, Mauritius, and Seychelles. Yet, its economic growth since independence has significantly lagged behind (Chart). GDP per capita has essentially stagnated in STP, whereas it has tripled or quadrupled in the other islands.[3]

2.   This case study seeks explanations for STP's relative under-performance and draws lessons for the future. It compares past economic developments in the islands and recommends policies that could most effectively foster future growth in STP. The paper is organized as follows. Section 2 provides a brief historical background; Sections 3 and 4 describe the conditions prevailing at independence and developments since then; Section 5 draws lessons from the past and Section 6 concludes.

Text Figure 1. Small Island States in Africa. Real GDP per Capita in Constant 2000 USD, 1960-2017

Sources: WEO, IMF; and IMF staff calculations.
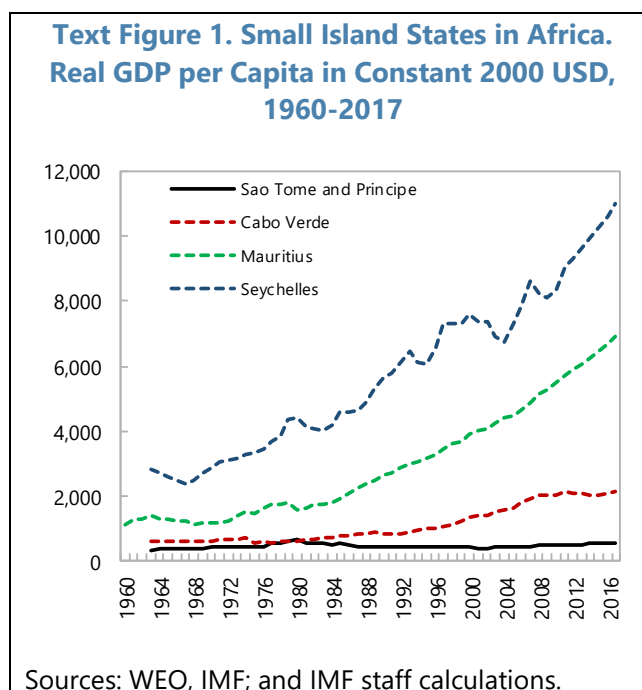
B.   Background

3.   STP shares a similar history with Cabo Verde, Mauritius, and Seychelles. All four islands were settled by European countries between the fifteenth and eighteenth century and initially prospered as a stopover for intercontinental commerce, including the slave trade. They subsequently evolved into plantation economies, except for Cabo Verde which has an arid climate. Mauritius and Seychelles were transferred from French to British control in the early nineteenth century, but the

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[1] Prepared by Gabriel Srour.

[2] The "small" island-states are those with a population of less than 1.5 million, and they consist of Cabo Verde, Comoros, Mauritius, São Tomé and Príncipe, and Seychelles. However, Comoros is excluded from this study because its economic development was largely dictated by political conflicts.

[3] Other indicators, such as GDP per capita in PPP terms, GNI per capita, etc. show similar results.

French plantation owners stayed and dominated the economy. Cabo Verde and STP were ruled by the Portuguese uninterrupted from the fifteenth century until independence.

4.   **Independence came relatively peacefully in all four countries:** in 1968 for Mauritius, followed by Cabo Verde and STP in 1975, and Seychelles in 1976. However, Mauritius and Seychelles had earlier earned some political and economic autonomy which gave them experience in government and enabled the establishment of a middle class with vested interests in private property, whereas the transition in Cabo Verde and STP took place with little advance preparation or experience in self-rule, and no market foundations.

5.   **Although the political regimes differed, in all cases the government played a central role in the economy.** Immediately after independence, Mauritius remained in the British Commonwealth and adopted the democratic values of the British system. Cabo Verde, Seychelles and STP turned into single-party socialist regimes with centralized planning and administered prices.[4] However, in all the islands, the government played a central role in the economy's development, and initially pursued a protectionist inward-oriented system, which proved inefficient and eventually forced some re-orientation and liberalization of the economy. For Cabo Verde, Seychelles and STP, this also involved a switch to a multi-party democratic regime at the turn of the 1990s.

C. Conditions at Independence

6.   **The four islands faced considerable challenges at independence, and were viewed by some as economically unviable.**[5] They were small, remote, undeveloped and with limited resources. Their economies were essentially agriculture-based with few export goods, and highly dependent on imports.[6] In the case of STP, the large cocoa plantations accounted for 90 percent of the farmed land and 2/3 of employment.

7.   **The consequences of small size are worth singling out in STP.** It is generally recognized that small size, especially when combined with remoteness, limits market and production capacity, and hence reduces competitiveness and growth due to diseconomies of scale and higher costs of production and trade.[7] A less noted, but perhaps equally important phenomenon is that small size, especially micro size whereby people closely know each other, can foster a political and institutional system based on personal connections and favors, at the expense of the rule of law and good

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[4] For Seychelles, this followed a bloodless coup in 1977.

[5] For example, by Nobel Prize recipient James Meade regarding Mauritius in 1961.

[6] For Cabo Verde, services accounted for the larger part of GDP, but most of the population was employed in agriculture.

[7] See for instance Armstrong and Read (2003) and Yang et al. (2013).

governance. As we shall see, STP's development suffered dearly from this problem, while the other islands appear to have somehow mitigated it.[8]

8.   **Initial conditions did not favor STP.** Table 1 sums up the relative conditions that prevailed in the four countries in 1975 along a number of indicators of growth found to be significant in the literature.[9] The islands are ranked from 1 to 4, 4 being the most favorable for growth. The footnotes explain the bases for the ranking. Thus, at independence, STP had a priori the most to grow, given its lowest starting level of income per capita. However other factors, particularly human capital and natural resources, favored the other islands.

9.   **In particular, STP was at a relative disadvantage in terms of natural resources**. While STP enjoyed an unsullied and attractive environment favorable for tourism, and a rich soil and fish stock, Seychelles was more favored for tourism, and Mauritius benefited in addition from ethnic diversity which helped establish trade relations with and attract foreign investment from broader markets.[10] Cabo Verde was inauspicious for agriculture due to a Sahelian climate and recurring droughts, but it enjoyed a strategic position between three continents, which supported its trade and service industry.

10.   **Lack of capital, broadly defined, was another key disadvantage**. By the time of independence, most of the Portuguese, and with them most skilled workers, managers and financial capital, had left STP, and the infrastructure was rudimentary. In contrast, Mauritius, and to a lesser extent Seychelles, retained technical know-how and institutional capacity after independence as both the descendants of the early French plantation owners and the new middle class stayed. Seychelles also benefited from the construction of an international airport in 1971, which jump-started its tourism. Cabo Verde had long experience as a service hub, supported by a deep-water port and international airport,[11] skilled mid-level administrators and labor force trained by Portugal during its colonizing era, and the backing of an accomplished diaspora whose remittances accounted for about 15-20 percent of GDP.

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[8] See Seibert (2006) for a comprehensive account of the socio-political conditions in STP before and after independence.

[9] See for example Sachs and Warner on the determinants of growth (1997).

[10] See Subramanian (2009).

[11] In 1980, the airport served about 50 flights a week including jumbo jets.

Table 1. Small Island States in Africa: Initial Conditions at Independence				
	Cabo Verde	**Mauritius**	**Seychelles**	**STP**
Size[1]	3	4	1	2
Remoteness[2]	4	1	1	3
Natural resources[3]	2	3	4	1
Income per capita[4]	3	2	1	4
Life expectancy[5]	1	4	4	1
Human capital[6]	2	4	3	1
Physical and financ. capital	2	3	3	1
Democratic values[7]	1	4	1	1

[1] Based on population size.
[2] Based on the distance to the islands' main trade partners which at that time was Europe.
3 Distinguishing features were Seychelles' natural attraction for tourism at the time (as suggested for instance by the average number of hours of sun in a year and the number of top beaches); Mauritius's ethnic diversity which enabled reaching different markets; Cabo Verde's strategic position and accomplished diaspora.
[4] The ranking in this case is inversely related to an island's income per capita, on account that the lower the initial income is (everything else being equal), the higher the growth potential (see Barro, 1991).
[5] Life expectancy for Seychelles is not available prior to 1982, at which time it was about the same as in Mauritius; Cabo Verde and STP were about the same in 1975 and both were systematically lower than in Mauritius and Seychelles since 1982.
[6] Partly based on the prevailing level of education. Cabo Verde is ranked higher than STP on account of available skilled workers/managers.
[7] Seychelles' rating is based on the situation after Rene took power.

11.   STP also suffered at independence from weak or absent institutions. With the departure of the Portuguese and a lack of preparation for the transition of power, the country needed to develop its institutions across sectors from the scratch. Quantitative measures of governance going back to 1975 are unavailable, however, historical reports document the prevalence of poor governance at the time,[12] and measures starting in 1996 (such as the Worldwide Governance Indicator or the Ibrahim Index of African Governance) systematically give STP the lowest score among the four islands.

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[12] See for instance Seibert (2006).

D.   Developments Since Independence[13]

12.   Immediately after independence, STP's economy suffered from a lack of effective institutions, a shortage of cadres and skilled labor, including farmers, and macro-economic imbalances. Much of the economy was nationalized in the first few years, including the former Portuguese-owned and -run plantations, and brought under centralized planning with wide-ranging price control and subsidies. Weak institutions, combined with a small communal environment where kinship played a strong role, led to widespread nepotism, with key positions in the new state allotted to well-connected individuals with very little experience. Production in the plantations dropped by almost half due to mismanagement, and state-owned enterprises (SOEs) registered large losses, while commerce and services suffered as Portuguese companies exited.[14] Some reforms were launched in the second half of the 1980s, but implementation was very slow. In the meantime, lax fiscal policy financed by external and domestic credit (including by the central bank), combined with connected bank lending to the private sector, led to large imbalances, reflected in rising inflation, deficit and debt, which ultimately forced a political and economic re-orientation (Figure 1).[15]

13.   In the 1990s, economic growth in STP was hindered by political and macroeconomic instability, and weak private investment and social spending. The political regime shifted to a multi-party democratic system in 1991, but the root causes of the economic imbalances observed earlier, specifically low capacity, clientelism and poor governance, remained and were exacerbated by political instability. The country saw 17 changes in government between 1991 and 2014, compared to 3 in Cabo Verde, 5 in Mauritius, and 3 in Seychelles,[16] while various indicators of governance regularly placed STP significantly below the other three islands.[17] The period was characterized by stop-and-go adjustment policies and lack of ownership of reforms and donor-financed public investment projects. Reform programs were initiated periodically with substantial technical and financial assistance from development partners, but were similarly stymied by weak institutions as in the earlier period and frequent changes in government. The period also featured expansionary fiscal and monetary policies, notably in the run-up to elections and in anticipation, or at receipt, of oil-related revenue.[18] Consequently, inflation soared and public debt spiked in the mid-1990s following a sharp depreciation of the dobra (Figure 1). Despite substantial external financial assistance, income per capita during 1990-2000 actually declined in STP.

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[13] This section focuses on developments in STP.

[14] Difficulties at the utility SOE, EMAE, and cross-subsidies between EMAE, treasury, and the oil importer ENCO, can be traced back to this period.

[15] See São Tomé and Príncipe IMF staff reports, 1978-1991.

[16] Based on changes in prime ministers in Cabo Verde, Mauritius and STP, and changes in presidents in Seychelles.

[17] See for instance World Bank "World Governance Indicators" and the Index of African Governance on 'rule of law, transparency, and corruption'.

[18] See São Tomé and Príncipe IMF staff reports, 1992-2001. The prospect of finding oil began in the mid-1990s, raising expectations of large receipts by 2005-6.

14.   The poor performance in the 1990s also reflected weak private investment and social spending. All indications are that private investment was sparse during this period, including in the tourism sector, as further evidenced by the absence of measurable tourism activity during that time. In contrast, substantial private investment in the tourism sector in the case of Cabo Verde and Seychelles and in the textile manufacturing sector in the case of Mauritius, promoted by more favorable macroeconomic and political conditions, helped income per capita grow annually between 3 and 4½ percent in these islands (Figure 1). Meanwhile, tax revenue in STP remained meagre and cyclical, with bouts of increases driven by expansionary fiscal policies or international oil price increases which raised import tax revenue. The low and cyclical tax revenue perpetuated dependence on external aid and fiscal imbalances, and prevented domestic spending on priority social programs, hindering poverty reduction and the buildup of human and physical capital.

15.   Reforms implemented since the 2000s improved macroeconomic stability and boosted economic performance (Figure 1).[19] Faced with an economic crisis and cases of fraud,[20] and spurred by the HIPC initiative, the authorities took some steps towards reforms in the early 2000s, albeit implementation was slow.[21] The exchange rate was stabilized and inflation brought down from its peak in the 90s (although it reemerged in the wake of the global financial crisis). Growth surged in the mid-2000s, driven by government expansion, financed by oil exploration bonuses, and foreign direct investment in the tourism and banking sectors. Investors were attracted by the country's prospects of finding oil and the expected HIPC-related debt forgiveness, which eventually cut debt to about 60 percent of GDP in 2007. Thereafter, improved macroeconomic conditions and structural reforms supported by substantial donor-financed programs have helped STP maintain robust growth, including significant growth in tourism, even though the prospects for finding oil have dimmed. Yet, growth in STP, and private investment, never reached or sustained the levels experienced by the other islands in the past.

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[19] See São Tomé and Príncipe IMF staff reports, 2002-2017.

[20] See for instance IMF Article IV Consultation staff reports (1999, 2001) and Seibert (2006).

[21] For instance, a new anti-corruption law was not approved until 2012

Figure 1. Small Island States in Africa: Selected Indicators, 1964-2017
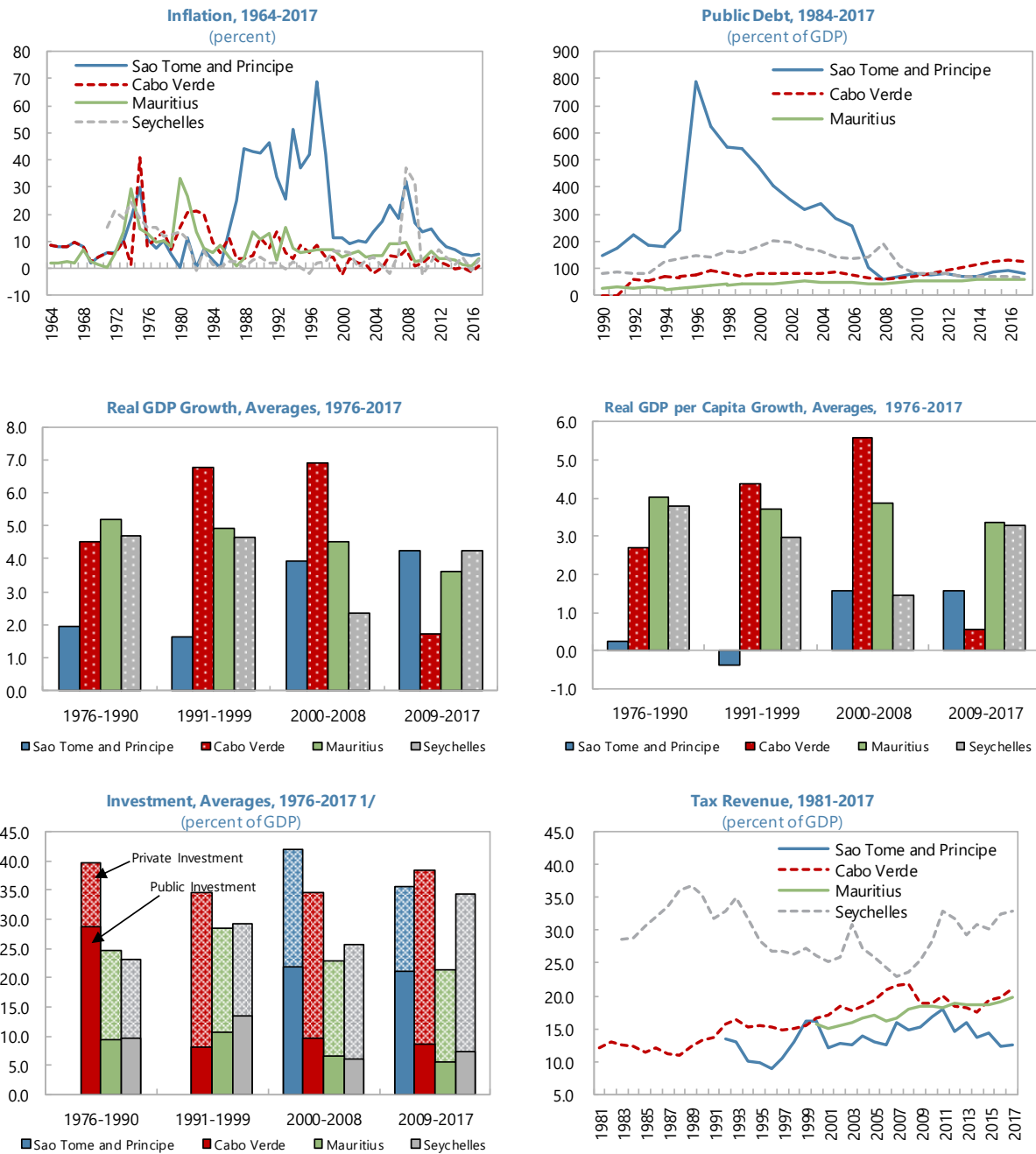
Sources: World Economic Outlook, IMF; and IMF staff calculations.
1/ Investment data is not available for STP prior to 2000.

E. Current Conditions and Policy Recommendations

A few lessons stand out from STP's own past and the other three islands' experience (diagram below).

Figure 2. Small Island States in Africa: Determinants of Growth
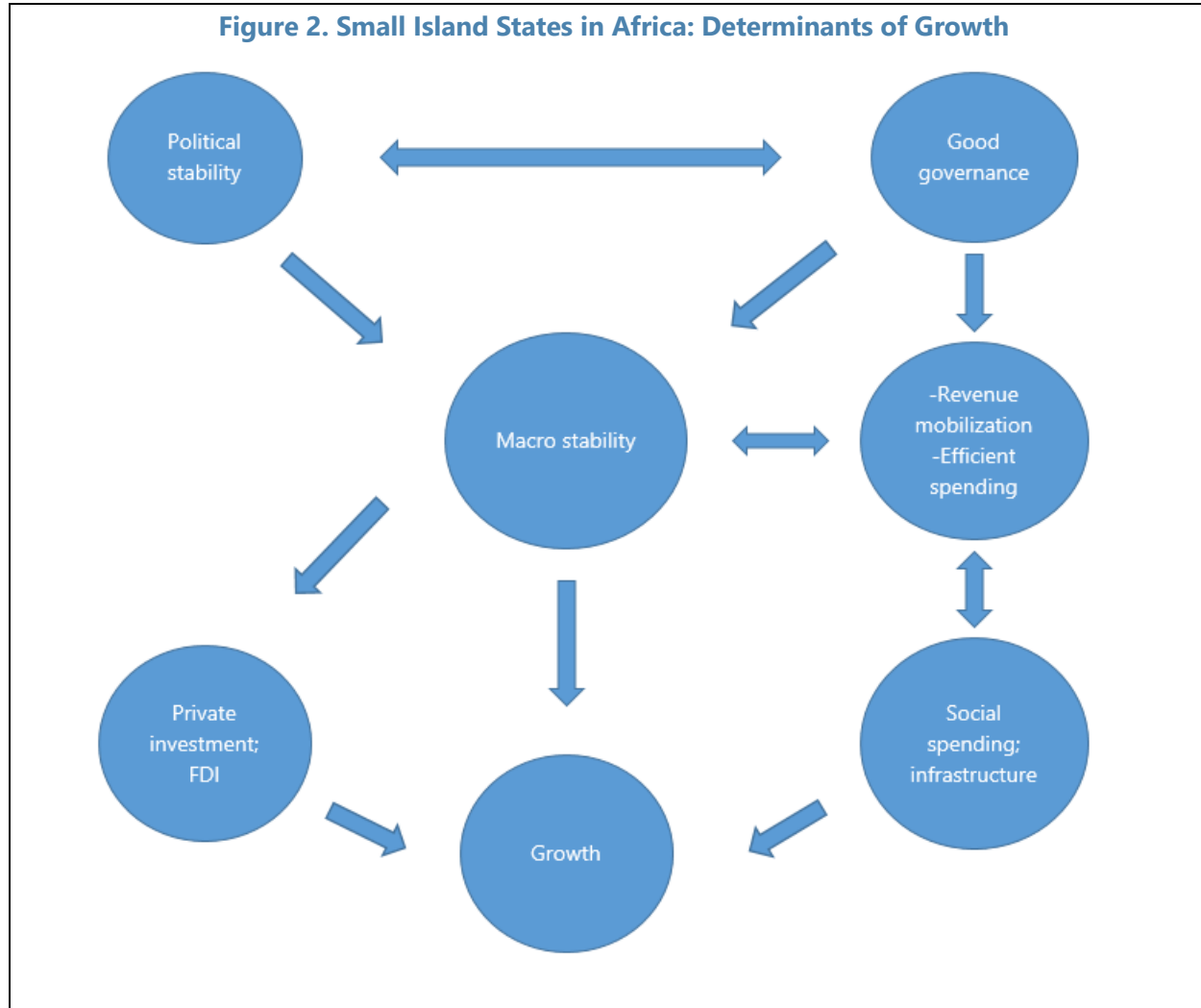
16.   Past experience in the four islands underscored that macroeconomic stability, supported by political continuity and good governance, is a prerequisite for robust growth. Macroeconomic imbalances, combined with poor governance and political instability, undermined growth in STP through the 90s, while more stable conditions promoted private investment and faster growth in the other three islands. It wasn't until the 2000s, when macroeconomic conditions improved, that STP began growing at a steady pace. Macroeconomic conditions continued to strengthen in recent years—GDP growth has been steady around 4 percent, inflation declined to about 5 percent, anchored by the dobra peg to the euro since 2010, and the domestic primary deficit has been brought close to 2 percent of GDP. However, macroeconomic stability remains vulnerable to fiscal slippages at the central government, particularly in the runup to elections, and large contingent liabilities from SOEs. The risk is accentuated by weak public financial management, large cross-arrears in the economy (at 60 percent of GDP in unconsolidated terms), and high public debt (at 70 percent of GDP).

Text Figure 2. STP: Domestic Primary Balance, 2001-2017
(percent of GDP)

Sources: WEO, IMF; and IMF staff calculations.
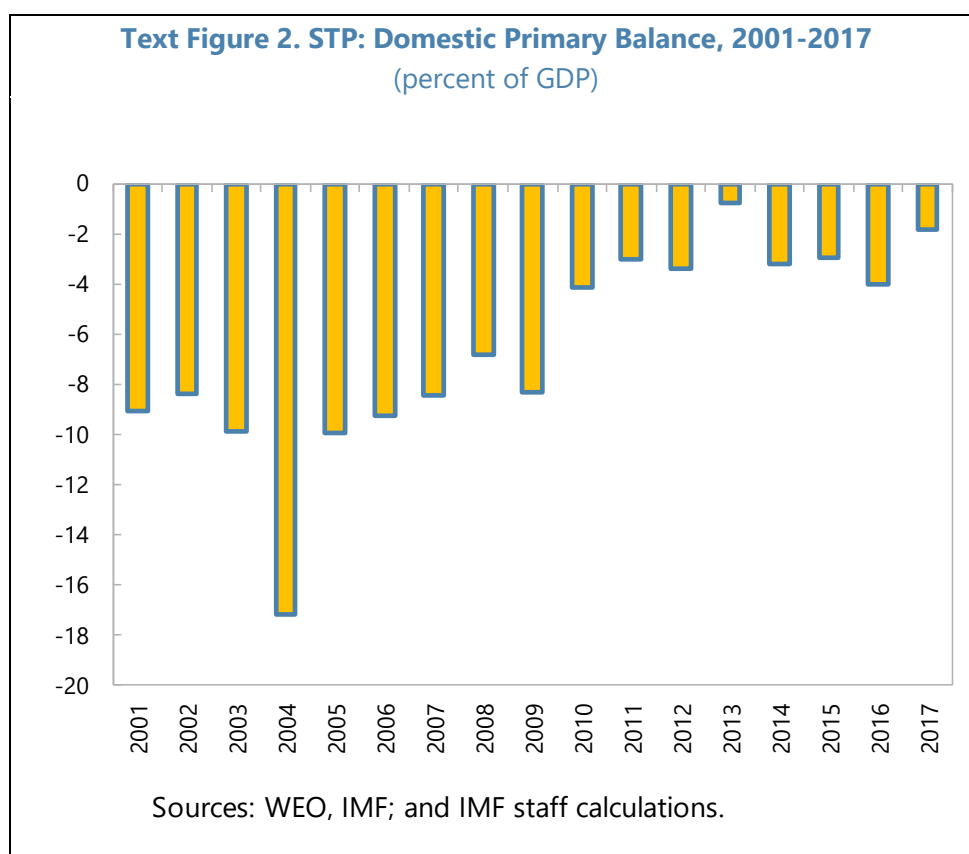
17.   Past economic developments also show that steady and sufficient revenue is needed to invest in social programs to reduce poverty and build capital. The other three islands have brought tax revenue to over 15 percent of GDP since the early 1990s, enabling them to finance priority social programs and infrastructure, and gain public support for reforms (Figure 1). In contrast, tax revenue in STP remained on average around 13.5 percent of GDP, supported by bouts of high international oil prices. It is currently around 12 percent of GDP, as oil prices are in a down

cycle, significantly lower than in the other islands, or the median (15 percent) in Sub-Saharan Africa, and lower than the minimum threshold (close to 13 percent) that recent empirical literature estimated to be necessary to support growth and development (Table 2).[22] STP's weak revenue is most evident in the consumption tax revenue, which falls between 5½ and 9 percent of GDP below the other three islands.[23]

Table 2. Small Island States in Africa: Financial Operation of the Government in 2016
(Percentage of GDP)

	STP	Cabo Verde	Mauritius 1/	Seychelles
Total revenue and grants	27.7	27.0	21.1	37.9
Total revenue	14.4	24.2	20.5	36.6
Tax revenue, of which:	12.1	19.8	18.9	32.5
Consumption taxes	1.2	9.1	6.8	10.5
Import taxes 2/	4.7	4.2	4.1	7.9
Taxes on income, profits, and capital gains	4.7	6.2	4.6	10.4
Profit taxes	1.3	2.3	2.7	5.5
Personal income taxes	3.4	3.9	1.9	4.9
Other taxes	1.5	0.3	3.4	3.1
Nontax revenue 3/	2.3	4.5	1.6	4.1
Grants	13.3	2.8	0.7	1.3
Total expenditure and net lending	31.6	30.1	24.7	38.2
Current expenditure	17.0	26.7	23.1	33.1
Primary current expenditure	16.6	24.1	20.7	29.3
Personnel costs	8.7	11.2	6.4	10.5
Goods and services	3.2	4.6	2.0	13.1
Interest	0.4	2.6	2.5	3.8
Transfers, subsidies	3.6	3.1	5.2	1.1
Social benefits 5/	0.2	3.2	6.2	4.5
Other	1.1	2.0	0.9	0.1
Capital expenditure 4/	14.6	3.4	1.6	4.8
Primary balance	-3.5	-0.5	-1.1	3.4
Overall fiscal balance	-4.2	-3.1	-3.6	-0.4

Sources: IMF calculations and authorities' data

1/ Refers to fiscal year 2016/17

2/ Includes excise duty

3/ Includes social contributions

4/ For STP, 13.9 percent of GDP in capital expenditure are financed by grants or concessional loans

5/ For STP includes HIPC-related social expenditures equal to 0.24

[22] See Gaspar et al. (2016).

[23] Some consumption taxes in STP are collected by customs, and recorded as import taxes. However, the size of the latter is comparable to the other islands.

18.   In addition, the private sector, and particularly foreign capital and knowhow, is key to developing the economy. As noted earlier, the small size, remoteness, and limited capacity and capital of the islands hindered their growth at independence. To mitigate these barriers and propel their economies, Cabo Verde and Seychelles promoted their tourism sector by improving infrastructure and logistics and attracting foreign direct investment, while at the same time protecting the still developing local agricultural and fishing sector.[24] STP has taken steps along the same path and has made some progress towards developing its tourism sector, starting with foreign investment in the mid-2000s. Tourism receipts rose almost fivefold since 2010 from $11 million to about $66 million in 2017 (or from $60 per capita to slightly over $300). Nevertheless, there is still considerable room to grow (Text Figure 3). In absolute terms, STP tourism receipts remain significantly behind the other islands (Cabo Verde and Seychelles's close to $400 million in 2017, and Mauritius close to $1 billion), and in per capita terms it pales compared to Seychelles' almost $4,500.

Text Figure 3. Small Island States in Africa: Tourism Receipts, 1998-2017

Tourism Receipts, 1998-2017
(Millions of USD)

Sources: WEO, IMF; and IMF staff calculations.

Tourism Receipts per Capita, 1998-2017
(USD)

Sources: WEO, IMF; and IMF staff calculations.
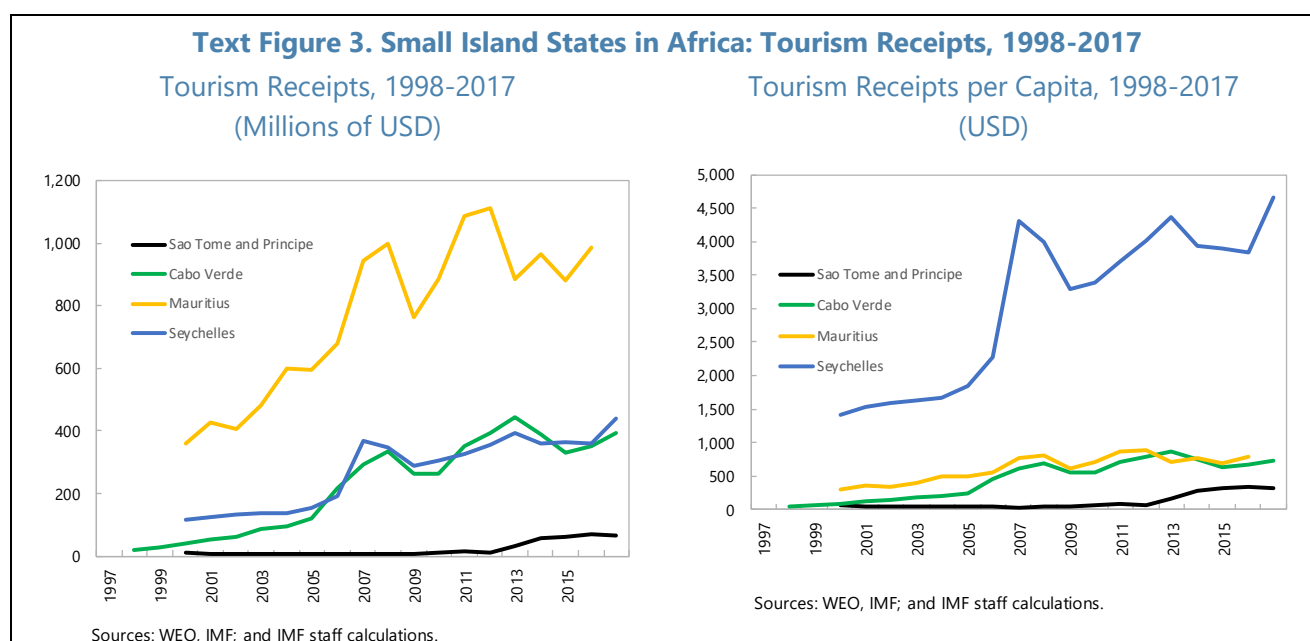
Recommendations

19.   Consolidate macroeconomic stability by strengthening fiscal discipline at the central government and containing vulnerability from public debt and losses from SOEs. For a small country like STP, where the government plays a central role in the economy, fiscal imbalance has wide-ranging negative spillovers, and credibility of fiscal policy is essential to promote the private sector. Accordingly, it is critical to contain the fiscal deficit at a sustainable level, instill financial discipline and clear arrears, and reduce the public debt. In view of the recurrent fiscal slippages in

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[24] Mauritius was able to diversify into textiles and other small manufacturing, but this benefited from circumstances, including highly preferential trade agreements, very special to Mauritius.

the past, particularly during election periods, STP could anchor fiscal policy around a medium- to long-term fiscal deficit target, to restrain political interference.

20.   Strengthen revenue through implementing the planned transition to a VAT regime in 2019 and improving tax compliance. The introduction of the VAT will be an important accomplishment. Nonetheless, the expected gain from the VAT of about 2 percent of GDP in additional revenue over the medium term will not be enough to bridge the revenue gap, particularly in the short run. More efforts are needed to improve tax administration, broaden the tax base and improve tax collection.[25] The strategy to clear the pervasive cross-arrears in the economy, which in 2017 amounted to about 60 percent of GDP (in unconsolidated terms), including tax arrears amounting to 3.5 percent of GDP, also needs to be accelerated to enhance the credibility of the tax system and discourage tax evasion. Relatedly, government services should be improved to encourage tax compliance and reduce the informal economy.

21.   Continue efforts to expand STP's market and attract private investment, and implement a holistic strategy to develop the tourism sector. The authorities' plans to improve infrastructure, including the airport and seaport, will help alleviate logistical barriers and reduce costs of trade, although financial sustainability should be a prerequisite for undertaking such projects given the potentially large fiscal liabilities.[26] The recently-elaborated tourism strategy also provides good foundations to market tourism in STP.[27] But more efforts are needed to better integrate the private sector and foreign capital and knowhow in the strategy, which will be critical to tap the potential in the tourism sector.

F. Conclusion

22.   Country-specific characteristics as well as weak institutions contributed to STP's relative underperformance since independence. Initial conditions, particularly regarding human capital and natural resources, contributed to STP's relative underperformance, especially in the first decade after independence. However, political instability and weak institutions contributed to inefficient use of resources, delaying reforms, and causing large macroeconomic imbalances, which hindered growth and wasted opportunities in the 90s and in the 2000s.

23.   Nonetheless, the times could be propitious for a turning point. Macroeconomic conditions have improved, while institutions have been strengthened and human capital has been rising, as evidenced by various governance and development indicators.[28] Furthermore, a number of important infrastructure projects are ongoing or close to being launched,[29] while STP has

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[25] See Pecho and dos Santos (2017).

[26] See STP National Development Plan 2017-21.

[27] See "Plano Estratégico e de Marketing para o Turismo de São Tomé e Príncipe" (2018), Ministério das Finanças, Comércio e da Economia Azul / Direção Geral do Turismo e da Hotelaria.

[28] See for instance Worldwide Governance Indicators and World Development Indicators.

[29] This includes the rehabilitation of roads and energy sector with World Bank support and expansion of the airport with China's support.

experienced more continuity in policy in recent years. The rise in popularity of eco-tourism globally also provides STP with an opportunity to expand the tourism sector.

24.   Past experience in the four island-states suggests that fiscal discipline, revenue mobilization, and a more active private sector, particularly in the tourism sector, may be key to tap STP's growth potential. Fiscal discipline is needed to contain the fiscal deficit and bring the debt to a sustainable level. Continuing to strengthen public financial management, including implementing multi-annual fiscal framework as recommended by the IMF technical assistance, would help.[30] In particular, maintaining a medium- to long-term fiscal deficit target as under the program with the IMF would help to anchor fiscal policy and restrain political interference. Improved tax administration and tax compliance are needed in addition to the VAT introduction to mobilize revenue and finance priority social programs and infrastructure. At the same time, a holistic tourism strategy that attracts private investment in this sector would be critical to unlock growth potential.

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[30] See Una (2017).

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INFLATION DYNAMICS IN SÃO TOMÉ AND PRÍNCIPE[1]

The note examines the dynamics and determinants of inflation in São Tomé and Príncipe from 2002 to 2017, a period during which the exchange regime was switched from a flexible one to a fixed peg with the euro. It shows that both supply-side factors, such as international food and oil prices as well as weather conditions, and demand-side factors, such as government spending and tourist arrivals, influenced inflation. The peg has helped stabilize inflation.

A. Introduction

1.   The Democratic Republic of São Tomé and Príncipe is a micro-state with the classic characteristics that challenge such countries. Located in the Gulf of Guinea, São Tomé and Príncipe is sub-Saharan Africa's smallest country by land surface (<1,000km^2) and second smallest by population (<200,000). It shares many of the defining characteristics of micro-states, including remoteness, fragility, limited resources, susceptibility to climate and external shocks, and aid dependency. For instance, fluctuating weather patterns (especially rainfall) has a non-negligible impact on agriculture and food prices; in particularly fresh vegetables, such as tomato, are more sensitive to flooding than other crops.

2.   The dual-island economy has been largely based on subsistence agriculture. The dense mountainous country is full of fruits and the ocean has plentiful fish. Before independence, Portuguese-owned plantations occupied 90 percent of the cultivated area. After independence, control of these plantations passed to various state-owned agricultural enterprises. The main crop on São Tomé is cocoa, representing about 95 percent of agricultural exports. Other export crops include copra, palm kernels, and coffee. Staple foods include fish, seafood, rice, wheat, beans, maize, and breadfruit. Tropical fruits, such as pineapple, avocado and bananas, are a significant component of the cuisine. The country imports most of its main food items such as rice, wheat, beans, and maize. It has been making inroads into tourism development but needs to upgrade key infrastructure to support the industry. The government is the main formal employer for the population, which has a substantial proportion of young people (>60 percent under 25 years). External assistance drives the formal economy and the country imports most of its consumption and investment goods.

3.   The country had steady growth and decelerating inflation in recent years. During 2002-2017, growth averaged 4.7 percent (Table 1). While growth has slowed somewhat from an average of 5.2 percent during 2002-2009 to 4.3 percent during 2010-2017, one key benefit of the euro peg adoption since January 2010 has been the reduced growth volatility. The standard deviation fell from 2.8 (pre-peg) to 0.3 (post-peg). Meanwhile, annual inflation has moderated significantly from an average of 20.8 percent during 2004-2008. Supported by the peg, inflation has fallen sharply from the historic high of 28 percent in 2007 down to 4.6 percent in 2016, the lowest in the past two decades.

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[1] Prepared by Marlon Francisco, Jehann Jack and Yunhui Zhao.

Table 1. São Tomé and Príncipe: Real Gross Domestic Product and Consumer Prices (Annual Percent Change, 2002-17)				
	2002-17			
	Real GDP		**Inflation**	
	Average	Median	Average	Median
São Tomé and Príncipe	**4.7**	**...**	**13.6**	**...**
Sub-Saharan Africa	**4.3**	**4.2**	**9.5**	**6.8**
Low-income countries	4.1	4.4	10.9	7.7
Fragile	2.9	3.2	12.5	9.0
Small states	*3.3*	*3.1*	*7.0*	*6.8*
Currency unions	4.0	4.0	2.6	2.4
WAEMU	*4.2*	*4.0*	*2.3*	*2.2*
CEMAC	*3.7*	*3.9*	*3.0*	*2.8*
Memorandum item:				
Portugal	0.4	...	1.9	...
All low-income countries in the world	4.0	4.2	10.4	7.7
All fragile states in the world	3.3	3.2	10.1	6.8

Sources: IMF, World Economic Outlook database; and IMF staff calculations.

Notes: For country groups, the methodology was 1) first calculate the average value for each country for the period in question; 2) then calculate either the average or the median of the group of countries in question, using the values obtained in the previous step. Data may not be available for all countries, for the whole time period. Averages for each country are computed using the earliest possible data.

4.   However, inflation in São Tomé and Príncipe has been relatively high compared with the euro area and its main trading partners. The annual inflation in São Tomé and Príncipe between 2010 and 2017 was 8 percent, almost 7 times as high as that in the euro area during the same period (1.2 percent). This could be partially attributed to the "Balassa-Samuelson Effect," that is, countries experiencing faster growth tend to experience real exchange rate appreciation, which would manifest itself in higher inflation under a pegged exchange rate regime. Nevertheless, the real appreciation associated with this relatively large inflation gap could erode the competitiveness of the economy. Indeed, the External Balance Assessment (attached to the staff report) finds the real exchange rate in São Tomé and Príncipe to be moderately overvalued. An examination of the drivers and evolution of the inflation dynamics could help guide polices towards achieving the external balance.

B.   Background

5.   The consumer price index (CPI) has been strengthened recently. Even though it is compiled using data only from the Agua Grande district—which contains the capital city of the country, it represents well the market prices in the country, because trading in the main island, São Tomé, takes place mostly in Agua Grande. The CPI basket was expanded, rebased and reweighted as of December 2015, with the support of IMF technical assistance. There are 423 products in the index across 12 categories in the following order of importance by relative weight: food and non-alcoholic beverages (hereafter called 'food'); housing, water, electricity, gas etc.; transportation; clothing and footwear; alcoholic beverages and tobacco; furnishing and household equipment; health; recreation and culture; communication; restaurants and hotels; miscellaneous goods and services; and education.

6.   Imported food prices have contributed the lion's share to inflation from December 2016 to June 2017, after which locally-produced food prices became a more important contributor due to unusual rainfall patterns. For instance, annual inflation spiked unexpectedly to 7.7 percent at end-2017, driven by increased import taxes on alcoholic drinks and meat as well as a temporary shortage of locally produced foods. In particular, more-than-usual rain during the dry seasons damaged vegetable crops and impeded small boat-based fishing.

7.   Anecdotal information and early data show that the currency redenomination in January 2018 did not have a significant impact on inflation. The central bank redenominated the local currency (dobra) on January 1, 2018 by removing three zeros. The currency is now valued at 24.50 new dobras per euro, maintaining the peg adopted in 2010. Post-redenomination price data points are not yet sufficient to clearly confirm the impact of redenomination.[2]

8.   The inflation in the country is not driven by indexation in the economy, which is confirmed by a January 2018 CPI mission conducted by the IMF's Statistics Department (IMF, 2018). The mission did note that the government takes into account the inflation rate when reviewing certain benefits and administered prices.

C.   Selected Literature Review

9.   A large empirical literature has examined the determinants and dynamic properties of inflation in sub-Saharan Africa. Barnichon and Peiris (2007) study the determinants of inflation by examining the interaction among inflation, output gap, and money gap. Caceres, Poplawski-Ribeiro and Tartari (2011) find that imported commodity prices and governments are two main driving forces of the inflation dynamics in the Central African Economic and Monetary Community (where the latter occurs mainly through controlled prices and the role of capital expenditure in domestic

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[2] Consumer prices inched up consecutively during 2018 Q1 so that cumulative inflation, at 1.1 percent, was noticeably lower (120 basis points) at end-March 2018 compared to the rate reported for the corresponding period last year. The dobra redenomination in January 2018 may not have led to any price gouging effects.

activity).[3] Focusing on the period before Malawi's exchange rate regime switch in 2012, Mangani (2012) finds that cost-push inflation played a more important role than demand-pull inflation. Focusing on the post regime-switch period in Malawi, Wu (2017) examines the role of the pass-through of the exchange rate and policy determinants in driving inflation in Malawi, and finds that after the switch to a floating exchange rate regime in 2012, nonfood prices affects both the headline inflation and the food inflation. Nguyen and others (2015) find that in recent years (since the mid-2000s), the contribution of the supply shocks to inflation has fallen; instead, domestic demand pressures as well as global shocks have played a larger role in driving inflation.

D. Data and Approaches

10.   The analyses use quarterly data from 2002 Q4 to 2017 Q4, which cover both the pre-and post-peg periods. This enables us to examine the potential impact of the structural break (i.e., the introduction of the exchange rate peg in January 2010) on inflation.

11.   Descriptive analysis is conducted to decompose the headline inflation and to understand the contributions of various components. To focus on the recent pick-up in inflation, the decomposition of overall inflation is conducted for January 2015-December 2017, and the decomposition of food inflation is conducted for December 2016-December 2017 (due to data availability).

12.   In addition, time series analysis is conducted to quantify the impacts of the underlying driving factors of inflation, including both supply-side and demand-side factors. This analysis is conducted over the entire sample period based on quarterly data to capture the medium-to-long-term dynamics of inflation, and is done separately for food inflation and non-food inflation to account for the different driving forces of these two. The independent variables are selected based on existing literature, which suggested that inflation is usually affected by characteristics such as the proportion of oil and food imports, vulnerability to weather shocks, economic importance of agriculture, trade openness and policy regime (Wu, 2017). Based on STP data, for *food* inflation, the supply-side factors include the international food price index and local rainfall[4]; the demand-side factors include broad money (M2) growth and domestic primary spending (capturing public demand), as well as the growth in the number of tourist arrivals, which generate demand for local goods and services. For *non-food* inflation, the supply-side factors include international oil price index, given the country's heavy reliance on oil imports for energy, and the demand-side factors are kept the same as in the food inflation analysis. In both food and non-food analyses, a dummy variable to indicate the exchange regime switch is included, so is the nominal effective exchange rate (NEER) that captures the potential substitution effect.

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[3] As explained later, our note has similar findings.

[4] Specifically, it is the percentage deviation of each quarter's rainfall from the long-run quarterly mean since 1901.

E.   Results from Descriptive Analysis: Headline Inflation Decomposition

13.   **The food sub-index has been the biggest contributor to overall inflation** (Figure 1). An analysis of the contributions to year-on-year inflation by category in each month since January 2015 (when the data decomposition first became available) reveals that food prices are by and large the main contributor. This observation is not surprising given the high relative share (73 percent) of food in the consumption basket. Month-to-month changes are volatile but usually positive, with only 4 instances of negative rates during January 2015 to December 2017. Monthly inflation rarely exceeded 1 percent; however, 4 of the 5 such cases were recorded during 2017.

14.   **Food price inflation is affected mostly by locally-produced food items, specifically vegetable and fish.** Within the food sub-index, the product categories with the largest weights (cereals, vegetables and fish) are also the ones that drive food price inflation (year-on-year basis), particularly the latter two in recent time because of unusual rainfall pattern. Looking at the sources of production, we observe that locally-produced food (mainly fish, fresh fruits and vegetables) has been a key driver to food inflation since mid-2017; previously imported food was the driver of inflation in São Tomé and Príncipe.

F.   Results from Time Series Analysis: Drivers of Medium-to-Long-Term Inflation

15.   **The exchange rate peg has lowered both food inflation and non-food inflation, highlighting the important dampening effect of the peg on inflation.** The regression results for food and non-food inflation are shown in Tables 2 and 3, respectively. In each case, the results are presented across three columns, using: (1) the pooled data across the entire sample period; (2) data in the pre-peg period; and (3) data in the post-peg period. The first columns in the two tables show that the peg has lowered inflation significantly: by 7.2 percentage points for food inflation, and by 8.7 percentage points for non-food inflation. This dampening effect is likely to have transmitted both through the discipline imposed by the peg on the central bank's money issuance, and through the signaling effect that has stabilized economic agents' expectations of future inflation.

16.   **Both food inflation and non-food inflation are positively correlated with M2 growth in the post-peg period, suggesting a demand-pulling effect of fiscal spending on inflation.** As the third columns of both tables show, M2 growth is highly significant and positively correlated with both food inflation and non-food inflation. Given the dominant role played by the government in the economy, M2 growth is closely associated with fiscal spending as illustrated in Figure 2. Therefore, this result indicates that fiscal policies play a significant role in the inflation dynamics. In this context, a natural question would be why not include fiscal spending directly as an independent variable in the regression. Because of the close linkage between fiscal spending and M2 growth, including both variables would cause multicollinearity. In addition, the short time series of fiscal spending data makes it difficult to identify the true effect of fiscal spending on inflation.[5] Furthermore, M2 is preferable as a broader measure than fiscal spending, as it captures the effects

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[5] Quarterly fiscal spending data are available only since 2008 Q1.

of grants that are not channeled through the budget. Therefore, the team decided to use M2 growth among the two as an independent variable.

17.   Food inflation is significantly affected by international food prices and weather conditions, highlighting São Tomé and Príncipe's heavy dependence on food imports and its low agricultural productivity. As shown in Table 2, the international food price growth is positively correlated with food inflation across all three columns. This is consistent with the fact that the lion's share of the food that São Toméans consume is imported. In addition, in the post-peg period, local rainfall is found to have pushed up food inflation, by disrupting the production in the fishing and other agricultural sectors. With small-scale production and low technology, the agriculture sector is highly vulnerable to weather conditions. It also partially explains the high inflation in the second half of 2017, since the country had an unusually high rainfall during that period.

	(1) Pooled	(2) Pre-change	(3) Post-change
IntFoodPrice	0.240**	0.560**	0.287***
	(0.032)	(0.014)	(0.000)
Rainfall	0.008	-0.002	0.016**
	(0.493)	(0.952)	(0.045)
M2	-0.000**	-0.000*	0.088***
	(0.045)	(0.056)	(0.005)
NEER	-0.004	0.808	-0.564***
	(0.987)	(0.266)	(0.000)
Peg	-7.240*		
	(0.093)		
Tourist			0.004
			(0.715)
Constant	18.325***	24.499***	6.962***
	(0.000)	(0.003)	(0.000)
Observations	60	29	20

Table 2. São Tomé and Príncipe: Food Inflation Regressions (2002 Q4 – 2017 Q4)

Notes: p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

All results are corrected for autocorrelation (up to 4 lags) and heteroskedasticity using the Newey-West estimator.

Source: IMF staff calculations.

18.   Non-food inflation is positively correlated with growth in tourist arrivals, pointing to bottlenecks in the development of local infrastructure to support the industry. As shown in Table 3, tourist arrivals' growth is positively correlated with non-food inflation (note that the data on

tourist arrivals are only available since 2012 Q1, in the post-peg period). This result is intuitive as a larger number of tourists tends to increase the demand for local services and raise non-food inflation. However, it can also be interpreted as a sign of the country's *supply-side* bottlenecks of local services. This interpretation is consistent with the hotel room shortages during peak times as noted by some hotel managers.

Table 3. São Tomé and Príncipe: Non-Food Inflation Regressions (2002 Q4 – 2017 Q4)			
	(1) Pooled	(2) Pre-change	(3) Post-change
Oil	0.018	0.050	-0.018
	(0.486)	(0.309)	(0.338)
M2	-0.000	-0.000*	0.068**
	(0.239)	(0.092)	(0.025)
NEER	0.049	0.248	-0.270
	(0.677)	(0.291)	(0.290)
Peg	-8.705***		
	(0.000)		
Tourist			0.029***
			(0.000)
Constant	14.779***	16.322***	2.731***
	(0.000)	(0.000)	(0.000)
Observations	64	29	23

Notes: p-values in parentheses. *** p<0.01, ** p<0.05, * p<0.1

All results are corrected for autocorrelation (up to 4 lags) and heteroskedasticity using the Newey-West estimator.

Source: IMF staff calculations.

19.   Graphical analyses confirm the results in the time series analysis. Figure 3 plots some key variables with food and non-food inflation. Figure 3a shows that food inflation broadly follows the trend of M2 growth in the post-peg period. For example, both series experience a decrease around 2011 Q3, and both experience an increase around 2012 Q3. Figure 3b shows that food inflation follows the trend of growth in international food prices relatively closely. Finally, Figure 3c shows that non-food inflation (blue solid line) follows both the trend of M2 growth (orange solid line) and that of growth in tourist arrivals (red dotted line). Note that each of these figures only captures the *univariate* relationship between one factor (e.g., M2 growth) and inflation, therefore a perfect alignment between these series and inflation are not expected.

G. Conclusion

**20.   Our empirical results demonstrate explicit linkages between macroeconomic policies and inflation.** Both supply and demand factors affect the inflation dynamics in São Tomé and Príncipe, and government policy could play a role in influencing inflation and guiding inflation expectations. Specifically, to entrench price stabilization, the following polices could be pursued:

- **Support the pegged exchange rate system with coherent macroeconomic policies.** As the analysis demonstrates that the peg has been beneficial in stabilizing inflation, it is important to support the peg. To do so, the reserves buffer needs to be strengthened. This, in turn, could be achieved through a package of policies, including more closely monitoring the implementation of externally-financed projects to avoid delays in grant disbursements, as well as the demand-side and supply-side policies stated below.

- **Continue fiscal consolidation to manage domestic demand.** The analysis demonstrates that inflation is significantly impacted by M2 growth, which, in turn, is closely associated with the growth of public expenditure. Continued fiscal consolidation would help ease the local demand pressure and support the building of an international reserves buffer.

- **Increase local supply, enhance productivity, and improve infrastructure:**

  - Utilize more local products and decrease the dependence on food imports. This could be achieved by adjusting the consumption habits (e.g., a greater reliance on indigenous staples, such as breadfruit and green banana, instead of imported rice), and by enhancing the processing of local primary agricultural products.
  - Improve agricultural productivity. This could be done by building greenhouses, promoting sustainable agriculture, and making agriculture more robust to weather shocks. The ongoing joint effort in this area by the authorities with other partners, including China and the United Nations, is a positive step.
  - Build infrastructure and increase the capacity of local services to support tourism demand. In this context, the implementation of the tourism development strategy that the authorities launched in January 2018 with the support of the World Bank should help eliminate the supply-side bottlenecks on tourism over time.

Figure 1. São Tomé and Príncipe: Contributions to Overall and Food Inflation

a. Contributions to Overall Inflation (2015:01 – 2017:12, y-o-y, by sub-index)
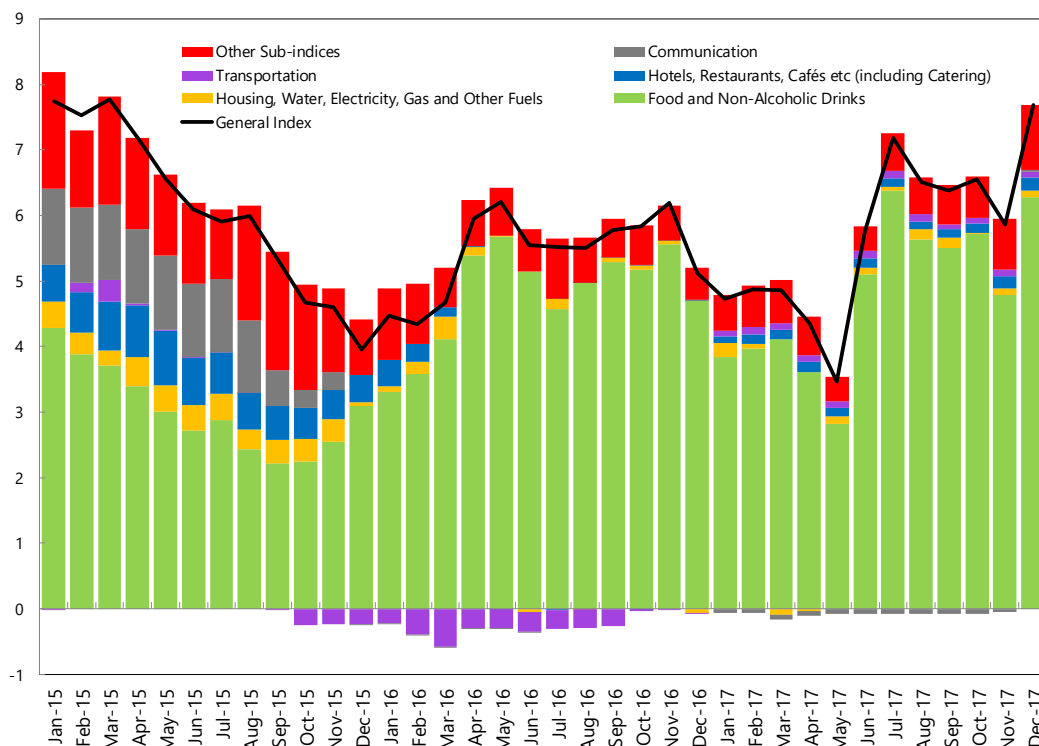
b. Contributions to Food Price Inflation (2015:12 – 2017:12, y-o-y, by product category)
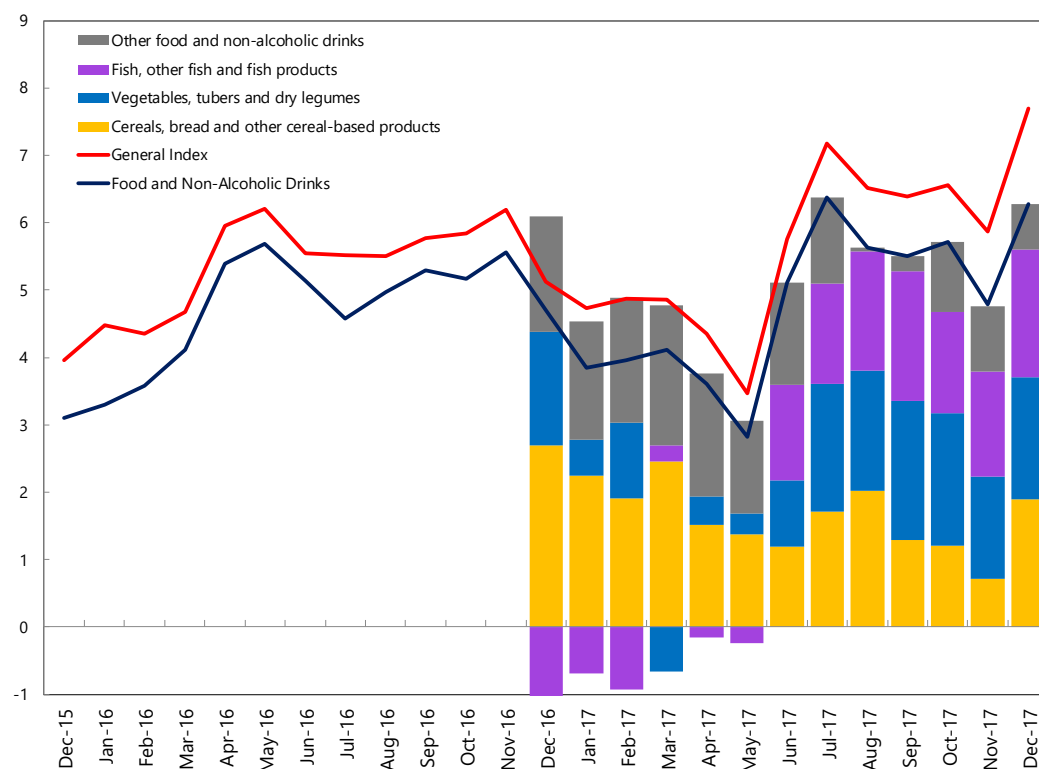
Figure 1. São Tomé and Príncipe: Contributions to Overall and Food Inflation (concluded)

c. Contributions to Food Price Inflation (2015:12 – 2017:12, y-o-y, by source market)
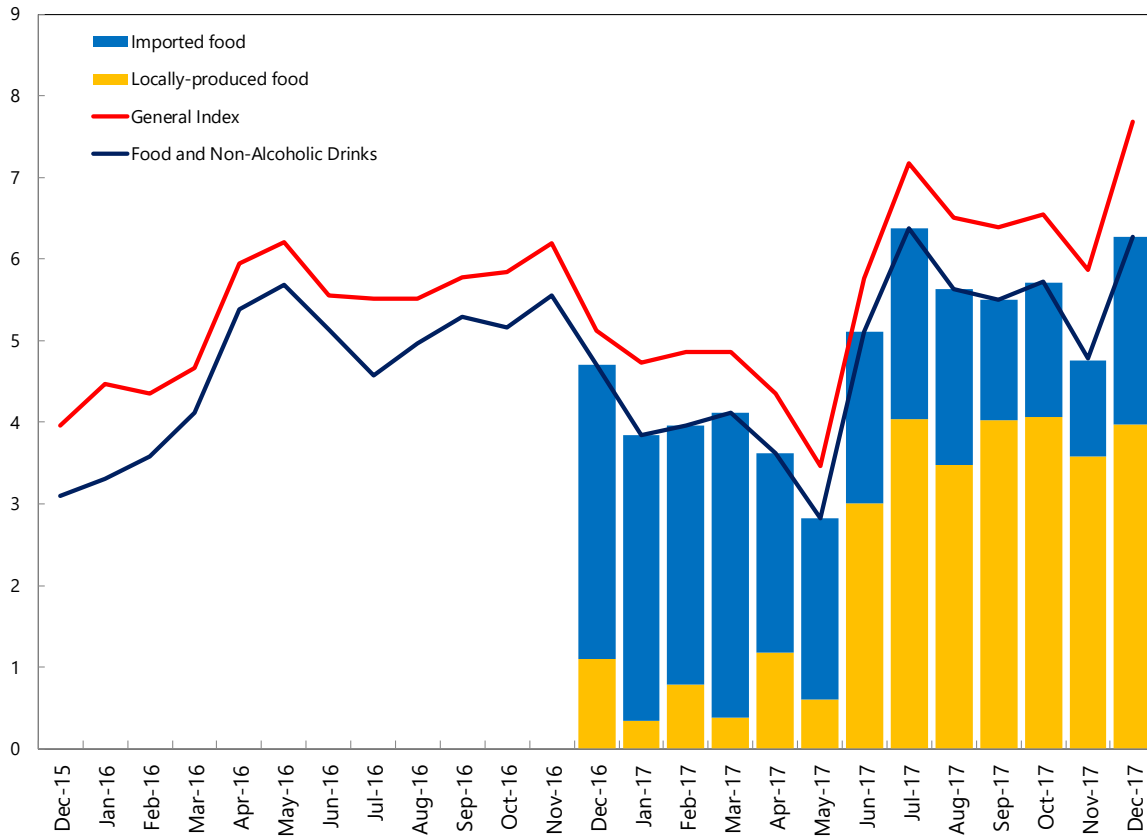
Sources: São Tomé and Príncipe authorities and IMF staff calculations.

Figure 2. São Tomé and Príncipe: M2 Growth and Domestic Primary Spending Growth, 2008 Q1 - 2017 Q4
(Percent)

Sources: São Tomé and Príncipe authorities and IMF staff calculations.

Figure 3. São Tomé and Príncipe: Inflation and Various Factors

a. Food Inflation and M2 Growth, 2002 Q4 - 2017 Q4
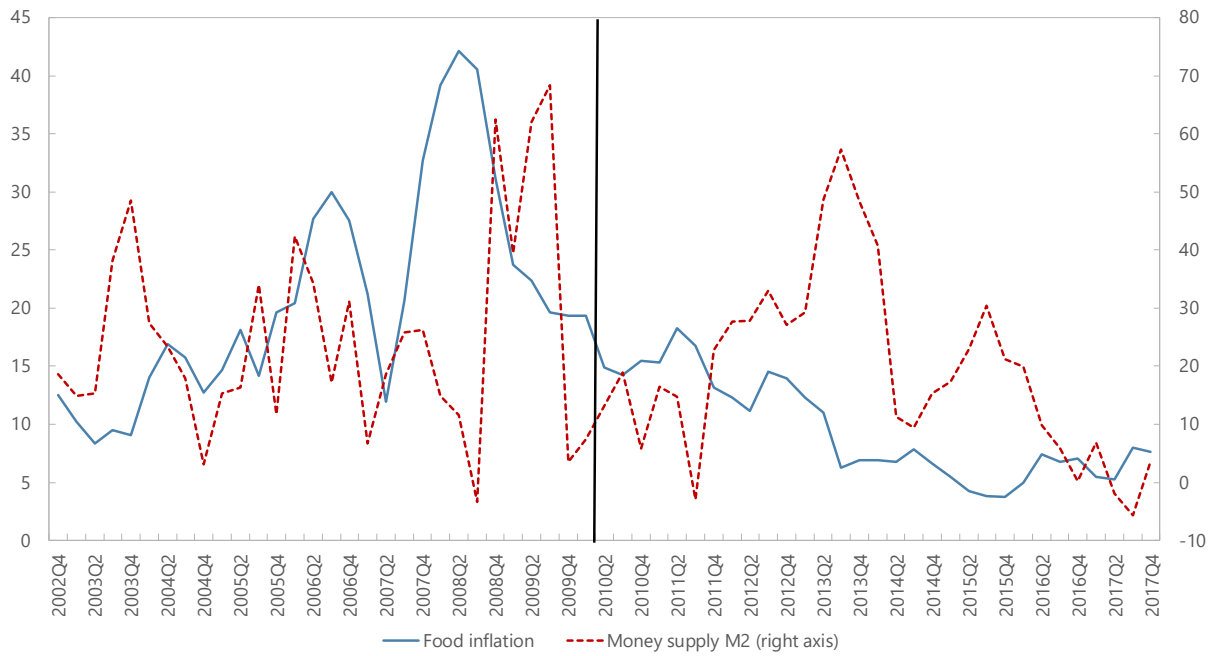
(Percent)

b. Food Inflation and International Food Price Growth, 2002 Q4 - 2017 Q4

(Percent)

Figure 3. São Tomé and Príncipe: Inflation and Various Factors (concluded)

c. Non-food Inflation and Key Factors, 2002 Q4 - 2017 Q4)

(Percent)

Sources: São Tomé and Príncipe authorities and IMF staff calculations.
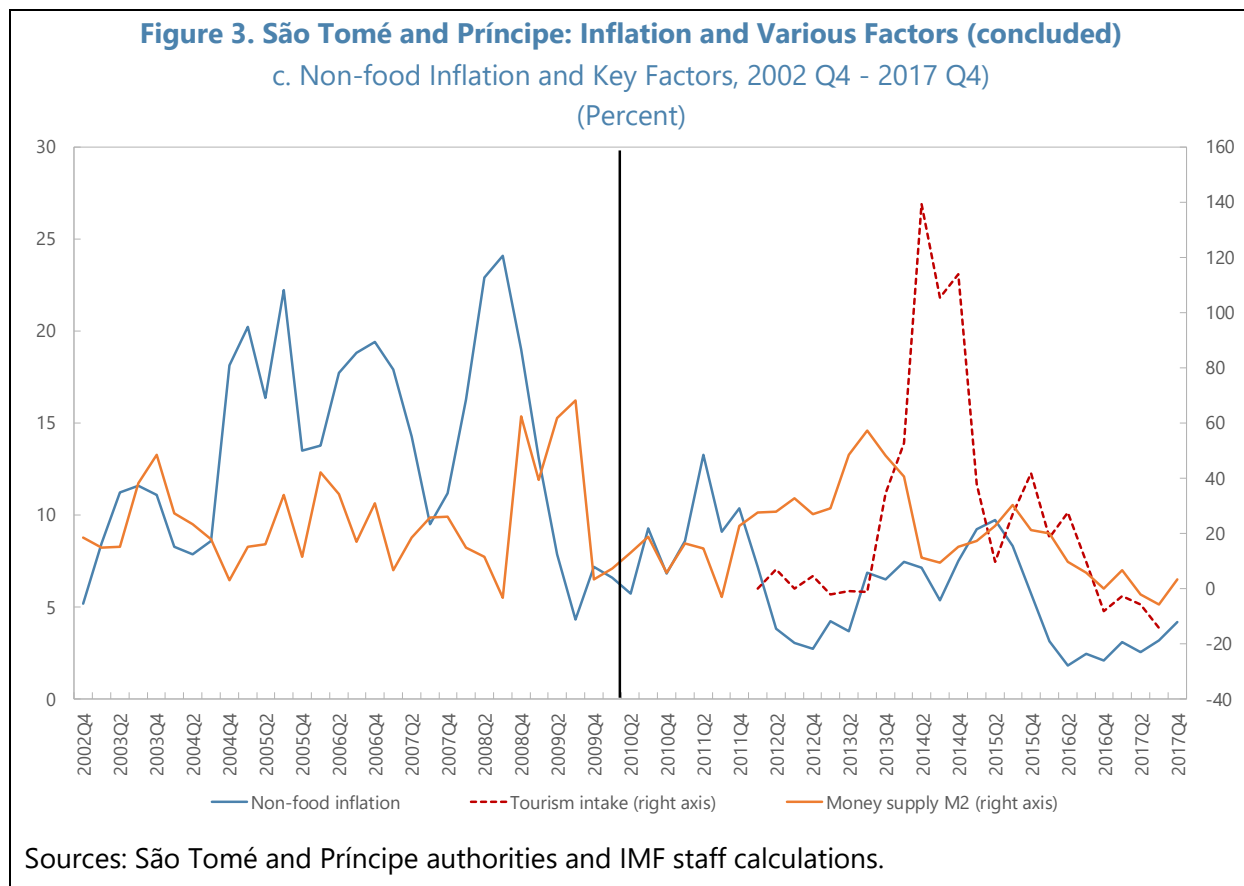
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THE FINANCIAL PERFORMANCE OF STATE OWNED ENTERPRISES AND RISK SPILLOVERS[1]

A. Background

1. The state-owned enterprises (SOEs) in São Tomé and Príncipe have long been a source of concern. Lacking autonomy in key managerial decisions and featuring inefficient production processes, the SOEs were for many years loss-making and therefore a drag on the government accounts. The negative financial results of the SOEs have been caused by low administrated sales prices and elevated operating costs. Specifically, SOEs operate with prices that were set by the government below cost recovery levels without adequate financial compensation, outdated production facilities (particularly for electricity and water), large technical and commercial losses, and other inefficiencies, including elevated personnel costs. They have been caught in a vicious circle where poor financial performance caused delays in much-needed investments, which in turn made the operations less efficient, and even worse financial results (World Bank, 2017). More recently, some SOEs achieved a partial turnaround.

2. There are four fully state-owned firms and another four enterprises with minority government stakes. The four SOEs operate in the provision of electricity and water (EMAE), port (ENAPORT), airport services (ENASA), and postal services (Correios). They are considered strategic to the national development. The government has minority stakes of 16 to 49 percent in the other four enterprises, operating in telecommunications, banking, air transportation, and oil import and distribution.

3. Among the large SOEs, the energy supplier EMAE faces the biggest challenges. EMAE has registered losses since 2011, with operating costs outpacing commercial revenues, despite some subsidies by the government. Its outdated energy production equipment makes energy generation costs exceed the average of Sub-Saharan Africa by far. EMAE's tariff structure has not been revised in years, and the average retail tariff of USD 0.21/KWh does not cover its average cost of service of USD 0.32/KWh, owing to EMAE's heavy reliance on inefficient thermal turbines and costly fuel imports. In addition, energy transmission and distribution losses amount to 43 percent of the energy dispatched, which is well above the SSA average of 15 percent (World Bank, 2017). As a result of the persistent losses, EMAE has accumulated large domestic arrears to its suppliers. The other two large SOEs, ENAPORT and ENASA, also suffer from outdated equipment and a rigid pricing structure, but have managed a partial turnaround in recent years by containing costs and acquiring some efficiency-enhancing equipment.

4. To address the poor operating performance, several medium-term investment projects are being implemented. The World Bank Power Sector Recovery Project supports a long-term structural improvement of the infrastructure and the management and planning capacity at EMAE (World Bank, 2017), with other development partners also contributing to the reform agenda.

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[1] Prepared by Torsten Wezel.

Central to the reform are the development and implementation of a Least Cost Development Plan and a Financial Management Improvement Plan. Specific measures include reducing production costs by rehabilitating hydroelectric plant and reducing losses through large-scale installation of meters. EMAE also expects significant cost savings by purchasing lower-cost electricity from private operators that reportedly plan large investments in solar power and natural gas plants.

5.   With medium-term structural reforms underway, this paper focuses on SOE's financial performance, issues surrounding widespread arrears, and spillover risks to other sectors. The financial performance of the SOEs is assessed using typical performance indicators covering profitability, solvency, liquidity and leverage. The paper then presents the consolidated structure of arrears that have built up between the SOEs and other government entities as well as the private sector. Spillover risks from SOE underperformance and arrears to the fiscal and financial sectors are evaluated as well.

B.   Financial Performance of SOEs

6.   The four SOEs have weaker financial performance than those partially state-owned and are saddled with high debt and arrears (Table 1). As a result of high costs and inadequate pricing of services noted previously, the SOEs not only register depressed profits (ENAPORT, ENASA) or losses (EMAE, Correios) but also low capital and mounting debt, which is composed mainly of arrears to suppliers and the Treasury.

	Table 1. São Tomé and Príncipe: SOE Financial Statement Information (end-2017 or earlier, in EUR million)							
	Fully State-owned				**Minority stakes**			
	EMAE**	ENAPORT	ENASA#	Correios*	CST	BISTP	STP Air*	ENCO*
	(Energy)	(Port)	(Airport)	(Postal)	(Telecom)	(Bank)	(Airline)	(Oil firm)
Revenue	13.1	4.2	3.4	0.2	9.3	9.1	10.5	40.4
Profit	-5.9	0.1	0.1	n/a	1.1	2.0	0.7	1.7
Assets	45.6	3.3	7.6	1.0	18.1	83.5	3.0	159.6
Debt (incl. arrears)	35.2	1.5	3.8	n/a	5.5	70.8	n/a	n/a
Arrears (gross)	30.8	0.4	3.3	n/a	0.0	0.0	0.6	139.6
Equity	10.4	1.8	3.8	-0.4	12.6	12.7	1.9	16.2
Debt-to-Equity	3.4	0.8	1.0	n/a	0.4	5.6	n/a	n/a

* end-2015; ** end-2016; # end-2017 preliminary figures.

Source: SOEs' financial statements; World Bank.

7.   Performance varies across the four SOEs. ENAPORT has a relatively healthy financial situation overall. ENASA has managed a turnaround, posting small profits since 2016, but remains financially vulnerable. Compared with these two overall viable firms, EMAE's financial statements point to an array of operational and financial deficiencies of a firm at pre-insolvency. The postal service provider Correios is also loss-making, but its operations are very small. In the following, the

performance of the large three SOEs[2] is assessed in detail using typical corporate performance indicators relating to profitability, capitalization, working capital/arrears, cash flow, and leverage. Table 2 provides the main financial performance indicators of the three large SOEs.

Table 2. São Tomé and Príncipe: Key SOE Performance Indicators (end-2017 or earlier)			
	EMAE*	ENAPORT	ENASA**
	(Energy)	(Port)	(Airport)
Operational Cost-to-Revenue (in %)	177.5	93.6	98.0
Profit Margin (in %)	-61.0	2.2	0.2
Working Capital (EUR million)	-45.3	0.1	-1.4
Working Capital-to-Equity Capital (in %)	-272.8	6.8	-36.3
Cash-to-Short-Term Liabilities (in %)	0.1	4.9	9.9
Debt-to-EBITDA (in %)	undefined	4.9	15.2

* end-2016; ** end-2017 preliminary figures

Source: SOEs' financial statements.

8.   Profitability of the SOEs is depressed due to an adverse cost-revenue relationship. As noted previously, the three large SOEs are either loss-making or barely breaking even because of the elevated cost of production and personnel and inadequate tariff structures that in some cases have not been adjusted for a decade. The operational cost-to-revenue ratios of the three large SOE range from 94 to 177 percent (88 to 160 percent, if excluding depreciation and amortization). Correspondingly, the profit margin (net income divided by revenue) is near zero or negative, with ratios ranging from 2.2 to -61 percent. The profit situation is generally more favorable at the other partially state-owned enterprises that are facing competition, which forces them to improve the cost-revenue ratio.

9.   Capitalization is thin following years of negative profits, notwithstanding some recent gains. Previous years of negative profits have eroded SOEs' equity capital. While the three large SOEs still show an overall positive capital position, EMAE's and ENASA's capital would be strongly negative without the accounting recognition at the cost of installation of "investment subsidies" for equipment received from the state and development partners free of charge. For example, EMAE's capital position was officially STD 415 million at end-2016, but it would have been STD -934 million without capitalizing that subsidy. By contrast, ENAPORT has a negligible investment subsidy in its capital account.

10.   Working capital is low or negative, and additional arrears have accumulated at EMAE. Working capital—the difference between short-term claims and short-term liabilities—is strongly negative and deteriorating at EMAE, while still negative but slightly improving at ENASA. EMAE's working capital deficit of STD 1.1 billion exceeded its nominal capital of 0.4 billion at end-2016, with

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[2] The fourth SOE, the postal service (Correios) is not evaluated due to its small size.

the gap having widened since. ENAPORT's working capital turned positive in 2016 on the back of some arrears clearance.

11.   As a result, the cash flow situation is tense, leading to very low cash-at-hand and potential payment difficulties. Cash flows at the three large SOEs were negative in 2017, depressing short-term assets (cash and cash-like positions such as bank deposits), which has implications for the ability to honor debt obligations (mostly short-term debt owed to suppliers). The ratio of cash-to-short-term liabilities is consequently rather low, ranging from 0.1 percent (EMAE) to 9.9 percent (ENASA). Some SOEs have secured bank overdraft facilities to safeguard payment capacity.

12.   The SOEs carry high debt and are overleveraged. The typical debt viability indicator, the debt-to-EBITDA[3] ratio is either at the critical threshold of five (ENAPORT: 4.9) or far beyond it (ENASA: 15.2). EMAE's ratio is negative (and therefore undefined) due to its losses. Even at modest earnings the debt would be excessive; for EMAE's debt of STD 1.7 billion to become sustainable, earnings (EBITDA) would have to increase by STD 440 million, which exceeds EMAE's annual gross revenue and is out of reach given the various limitations the company faces. Similarly, ENASA would have to triple its current EBITDA to attain debt sustainability.

13.   Notwithstanding the debt load, SOEs intend to raise debt for investment purposes. Some SOEs plan on taking out relatively large bank loans for carrying out efficiency-enhancing investment projects. ENAPORT and ENASA stated their intention to obtain from local banks EUR 2 million and EUR 1.5 million, respectively, at commercial rates to replace or update the plant and equipment. The SOEs contend that the efficiency gains will be large enough for the additional debt service to be manageable.

14.   The other state enterprises with minority government stakes show a decent financial performance, in part thanks to a dominant market position. Both the partially state-owned bank, BISTP, and the telecom operator, CST, are profitable and show only moderate leverage. The good financials are helped by a dominant position, with market shares of about 50 and 85 percent, respectively. The national airline, STP Airways, showed a profit in 2015, yet remains financially weak, not least because of the government's lack of participation in a recent capital increase. The oil supplier, ENCO, appears to be profitable in accounting terms, but has been burdened by large arrears by the public sector.

C.   Structure of Arrears and Risk Spillovers

15.   An intricate web of arrears has emerged as a result of chronic losses and liquidity problems at large SOEs. Figure 1 displays the net arrears between institutions (in part after netting out bilateral arrears), with the direction of the arrows indicating arrears to the recipient entity and their width roughly proportional to the magnitude of arrears. The principal arrears encompass the

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[3] EBITDA stands for earnings before interest, taxes, depreciation and amortization and is commonly used to compare companies' cash flow situations, particularly in company valuation. The debt-to-EBITDA ratio is a prime indicator of corporate debt sustainability with a critical threshold of debt commonly considered to be five times EBITDA (higher multiples indicating unsustainable debt).

large SOEs, central government and other government entities, but there are also arrears to or owed by partially state-owned enterprises and private firms. In addition, the oil supplier, ENCO, has built large arrears to its parent company, an Angolan SOE, on the back of arrears by several public institutions. In addition, there are other arrears to and from foreign firms and NPLs of private firms with banks. A center node in the web of arrears is central government that has, alternatingly, arrears and claims with SOEs, the other state enterprises, ENCO, and the private sector (its claims reflecting back taxes).

Figure 1. São Tomé and Príncipe: Structure of Arrears (Net Perspective)

Sources: São Tomean authorities; and IMF staff calculations.
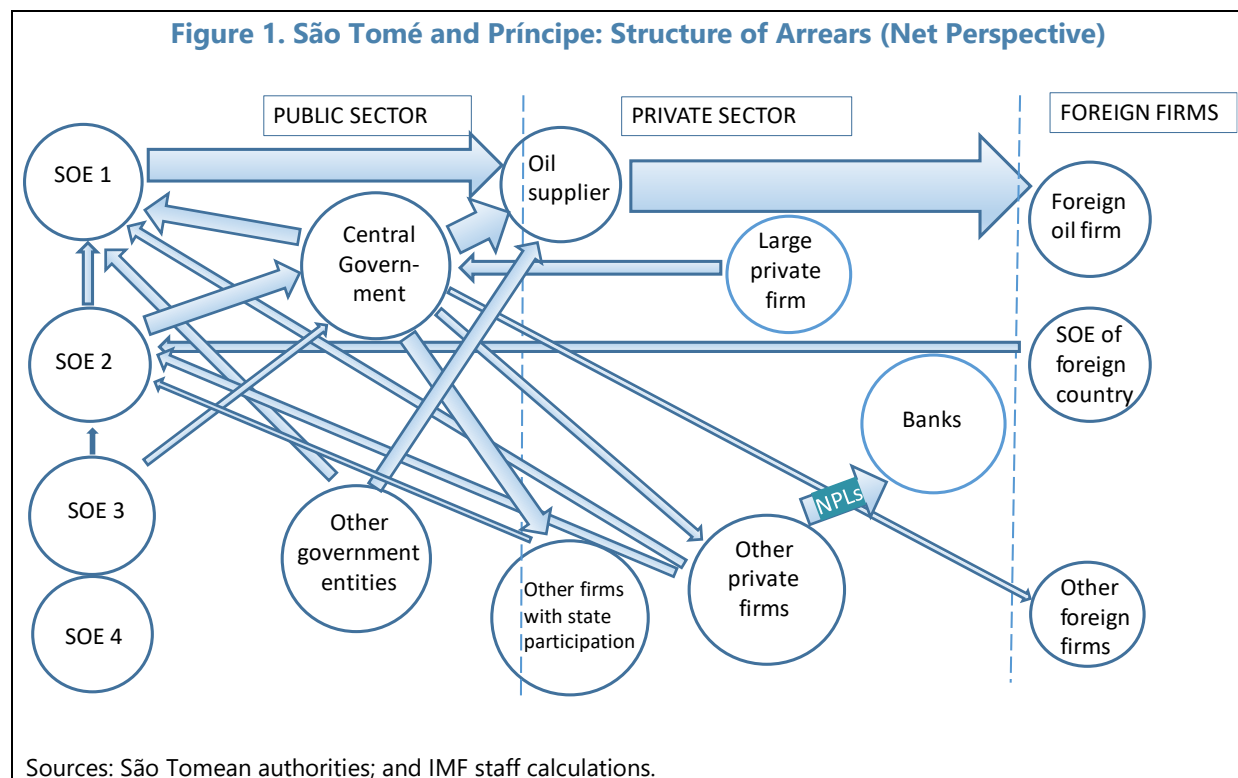
16.   SOEs' sizable outstanding claims aggravate the repayment of their own arrears. Two of the large SOEs (EMAE and ENAPORT) have been unable to collect bills from many of their clients, some of which may be financially distressed themselves, and others are late in their payments as collection and enforcement mechanisms are weak. In turn, the missing cash inflows have made it difficult for SOEs to honor their payment obligations, including further clearance of existing arrears.

17.   Government and SOEs have recently agreed on new arrears clearance plans after similar plans effectively had stalled in the past. ENAPORT and ENASA have agreed repayment plans for a period of 5 and 25 years, respectively, to fully clear arrears (including penalty interest[4]) to the government and some of its entities. Similar plans had been agreed in the past (involving

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[4] These late-payment penalties are scheduled to be forgiven only after full clearance of the underlying arrears at the completion of the repayment plan. The amounts of accumulated penalty interest are large at about 40 percent (ENAPORT) and close to 100 percent (ENASA) of the underlying arrears.

payments from both SOEs to government and vice versa; IMF, 2016) but they effectively fell flat in the process. While the existing arrears were being cleared as planned, new arrears arose, and in some cases this led to an even larger stock of arrears. A notable exception is the repayment of arrears from the government to ENCO, which is acutally running ahead of schedule because the positive differentials between domestic prices and import prices in the past two years were used to reduce the debt accumulated by previous oil price subsidies.

18.   Compliance with the arrears clearance plans may prove to be challenging. While SOEs appear fully committed to the new repayment plans, their low liquidity and prospect of additional debt service on proposed new bank loans may make adhering to the annual payment schedule difficult. For example, the agreed annual repayment by ENASA would, other things equal, deplete its cash-at-hand within three years, and matters would be worse, if additional commercial bank loans needed to be serviced and the efficiency gains of the investment projects failed to materialize in time.

19.   The large arrears of SOEs constitute significant contingent fiscal liabilities. The SOE liabilities are essentially guaranteed by the government, either implicitly given the strategic importance of the SOE or explicitly by formal agreements. Such large contingent liabilities, which are concentrated with a few creditors (e.g. ENCO), risk undermining the financial viability of the government and hence raise debt risk premia in the future. STP appears to have avoided this situation so far, as treasury bill issuance have generally been oversubscribed. Nevertheless, private suppliers have stopped providing goods and services to the state on credit, thus hindering government operations.

20.   Recurring SOE losses are causing additional contingent liabilities. In principle, government needs to cover those ongoing losses by injecting fresh capital so that a prudent debt-to-equity ratio is preserved. In practice, however, such capital injections have been rare (e.g. EMAE's paid-in capital has not been increased for several years), and contributions take the form of the aforementioned investment subsidy, whose accounting value appears questionable. Even at profitable SOEs and other enterprises with state participation, the government needs to inject capital for those firms to attain their investment and growth objectives.[5]

21.   In addition, delays in the clearance of tax arrears have contributed to the strain in government finances, although some SOEs are also owed by government. The tax arrears, equivalent to almost 7 percent of GDP, have deprived the state of much needed revenue for social programs, such as education and health, as well as investment in infrastructure, and have led, in turn, to arrears by the government to suppliers. The tax arrears, some of which have accumulated over several years, also damage the credibility of the tax system and undermine tax compliance.

22.   Adverse macrofinancial linkages emanating from SOEs are a general concern, but they are subdued at present. Banks have relatively small loan exposures to two SOEs, which are performing. SOEs appear to prioritize on-time servicing of the occasional bank debt that they take

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[5] For example, the government has injected fresh capital in the bank it partially owns, BISTP, but has not participated in the capital increase of STP Airways.

out. Indirect linkages between SOEs and banks via private sector firms are also contained. Banks are exposed to a few commercial clients to whom the central government is in arrears, but none of these loans are currently past due. Even so, anecdotal evidence gathered from banks and the BCSTP suggests that there have been cases of non-payment by government, leading to liquidity issues at suppliers who then defaulted on their bank loans.

D. Conclusion and Recommendations

23. **The SOEs' poor operational and financial performance has contributed to an intricate structure of domestic arrears, and arrears clearance remains challenging.** Analysis of financial performance indicators has shown that the large SOEs suffer from low profitability and liquidity as well as excess leverage, which threaten solvency in individual cases. The SOEs have had, and in the case of EMAE continue to have, difficulties clearing their large stock of arrears. The recently-agreed repayment plans for some of them may prove to be challenging in view of weak cash flow and the prospect of servicing additional bank loans to be taken out for investment purposes. Macrofinancial linkages appear to be muted at present, but could become an issue as SOEs increase their bank debt and debt service without immediate efficiency gains.

24. **To improve the subpar financial performance of SOEs, a combination of medium- and short-term measures is needed.** The only solution to the SOE issue is to push forward with the aforementioned medium-term reform plans and implement effective structural measures. Pending such deeper reforms, the following short-term measures aimed at addressing the arrears situation are recommended:

- With medium-term investment projects in train, SOEs should attempt to identify areas for cost saving (e.g. staff cost, including training expenses) and collect more arrears from customers.

- The potential for netting out bilateral arrears between SOEs and government should be explored, presupposing that the claims are considered valid by both parties.

- To ease somewhat the burden of arrears clearance, the central government could consider forgiving late-payment penalties in line with full scheduled repayment of the main arrears per year.

- Borrowing by SOEs from banks should be in line with debt servicing capacity from SOEs' cash flows to avoid NPLs with banks or accumulation of additional arrears elsewhere.

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International Monetary Fund (2016): "Democratic Republic of São Tomé and Príncipe: Staff Report for the 2016 Article IV Consultation, First Review under the Extended Credit Facility, and Request for Waiver for Nonobservance of Performance Criterion and Modification of Performance Criteria—Press Release; Staff Report; and Statement by the Executive Director for the Democratic Republic of São Tomé and Príncipe", IMF Country Report No. 16/174.

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ANALYZING THE EVOLUTION OF CREDIT AND NON-PERFORMING LOANS BASED ON CREDIT REGISTRY DATA[1]

A.   Background

1.   The banking system of São Tomé and Príncipe is characterized by persistent high levels of non-performing loans (NPLs). The NPL ratio of the banking system tripled between 2013 and end-June 2017 to 32 percent, peaking at about 36 percent in 2016. This level of NPL is significantly higher than in peer countries, such as Caribbean island states or small states in general (Pacific islands excluded), and also exceeds that of neighboring Angola. The share of the number of loans that are non-performing, the "unweighted" NPL ratio, however, is substantially lower, at less than 10 percent of GDP. This indicates that the high NPL ratio, which is measured in value terms, is driven by the poor performance of a limited number of large loans.

Figure 1. São Tomé and Príncipe: NPL Ratio, 2013-17

Sources: BCSTP and IMF staff calculations
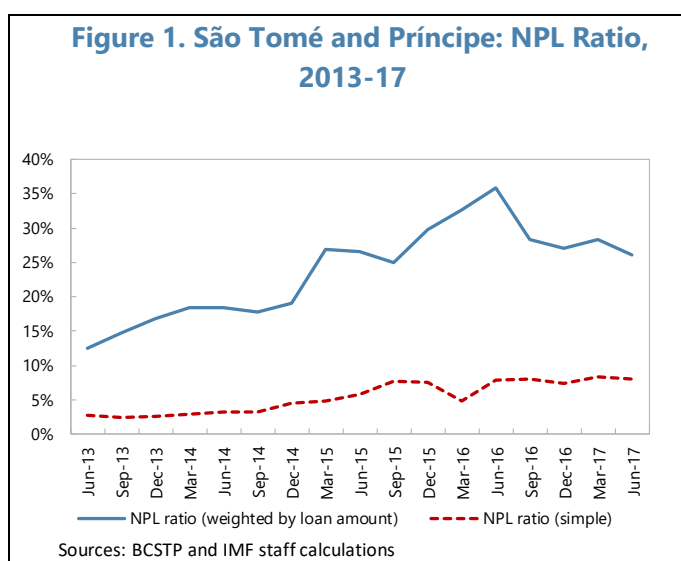
2.   As part of a comprehensive strategy to address the high NPL ratio, a central credit registry (CRC) has been created. The BCSTP made the CRC operational in March 2011, collecting information on the characteristics and status of loan exposures on a monthly basis. The coverage of the credit registry has increased from about 50 percent in the initial stages to 96 percent recently.[2] Besides providing a range of descriptive statistics, micro data can help identify trends within banks' credit portfolios, spanning both

Figure 2. Selected Countries: NPL Ratio in 2017

Source: World Bank

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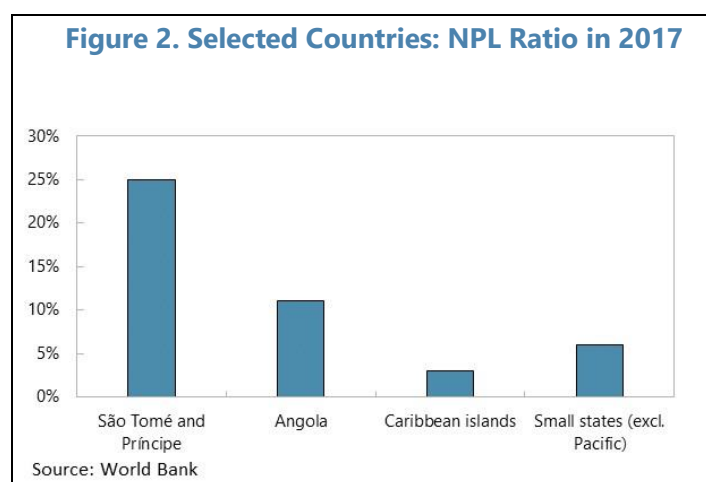
[1] Prepared by Luiza Antoun de Almeida and Torsten Wezel.

[2] The CRC covered 269 loans in 2011, 6,787 in 2013, and 10,864 in 2017.

performing and non-performing loans, and derive indicators to be used for financial stability analysis and banking supervision.

3.   This paper analyzes the evolution of credit and credit quality in São Tomé and Príncipe, using micro data from the CRC. In the following sections, the paper first presents the main characteristics of banks' loan portfolio and, in particular, non-performing loans, then it conducts a vintage analysis of default rates and loan transition matrices that give indications of how loan quality evolved during the sample period. It concludes with recommendations on measures for improving the CRC and for using the rich data to guide bank supervision and support the implementation of authorities' NPL reduction strategy.[3]

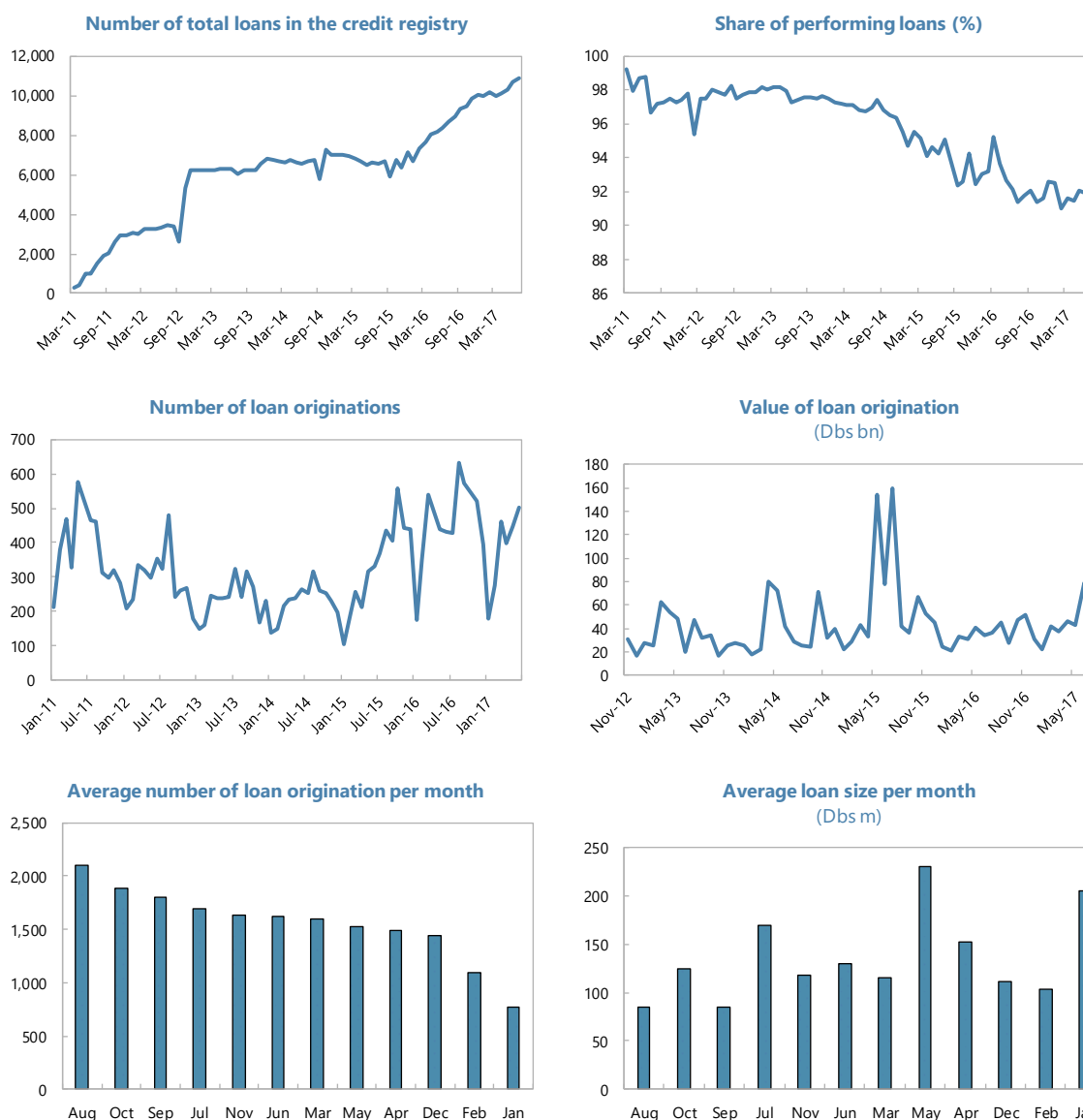## B.   The Credit Registry and Credit Market Characteristics

4.   The analysis uses a multi-year data sample. It covers March 2011 to June 2017, contains 469,823 observations from up to 12 banks (including banks that have meanwhile been closed or taken over), and are related to 29,238 loans and 13,039 borrowers (around seven percent of the total population or 14 percent of the adult population). Banks used to report data with a certain lag which will be reduced significantly through a new online reporting system. During this time period, the number of loans covered in the sample grew steadily while the share of performing loans declined. In addition, the rate of loan origination varied over time (Figure 3).

5.   The credit registry collects a wide range of borrower information, as reported by banks. In addition to borrowers' personal information, the CRC contains information on the bank name, date of loan origination, maturity date, loan amount at origination, carrying amount, currency, interest rate, status of the loan in given month (category of loan classification), type of loan rate (fixed vs. variable rate), type of borrower (household vs. firm), the sector/occupation of the borrower, and the district of the borrower. The CRC also provides an indirect measure of borrower income, expressed by the share of disposable income in total debt. Unfortunately, currently no information on collateral value is provided.

6.   The CRC data show that the credit market in São Tomé and Príncipe is highly concentrated. On the demand side, the largest firms (top 5 percent) received 54 percent of the total corporate credit, while the largest individual borrowers received 29 percent of the retail credit. On the supply side, the largest bank extended almost half of the loans in the sample and the other two largest banks around 15 percent each. Geographically, the loans are concentrated in the district of the capital (59.4 percent).

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[3] As noted in the staff report, the authorities have adopted a NPL reduction strategy plan, but its implementation has been hampered by an inefficient judiciary system that makes recovering collateral difficult. While the government has sought to establishing arbitration centers to facilitate out-of-court settlements, these centers are not yet operational for lack of start-up funding. Meanwhile, the continued high credit risk has stalled new credit to the economy.

Figure 3. São Tomé and Príncipe: Characteristics of Bank Credit

Number of total loans in the credit registry

Share of performing loans (%)

Number of loan originations

Value of loan origination
(Dbs bn)

Average number of loan origination per month

Average loan size per month
(Dbs m)

Sources: BCSTP and IMF staff calculations

7.   High loan concentration makes banks' balance sheets vulnerable to the financial health of large borrowers. At one small bank the largest borrower accounts for 40 percent of the loan portfolio, while at three others that share amounts to 20 percent of total loans. Even at the largest banks the largest 10 borrowers, representing less than 1 percent of the total numbers of borrowers, account for over 30 percent of the loan volume. The default of a single large borrower is thus likely to have a substantial impact on individual banks.

8.   System wide, the higher amount of bank credit goes to enterprises and are in local currency. While loans to individuals account for 97 percent in terms of number of loans, loans to firms represent 71 percent of the total loan amount. Almost all loans are denominated in local currency (New Dobras, STD—95.6 percent), followed by EUR (2.6 percent), and USD (1.8 percent). Only 5 percent of the borrowers in the sample have access to foreign-currency credit. For individuals, the median domestic currency loan value is STD 35,000 (about USD 1,750), with 10 percent of the loans being above STD 130,000 (about USD 6,500). These figures are large given that São Tomé and Príncipe's GDP per capita is only USD 1,772 (end-2017). For firms, that median loan value is STD 500,000 (about USD 25,000), with 10 percent of the loans exceeding STD 4.9 million (about USD 245,000). The median loan value for USD and EUR loans are much larger at about USD15,000 and EUR 30,000, respectively.

9.   There is considerable variation in interest rates charged and maturities. Interest rates may be as high as 54 percent and maturities range from 1 day to almost 37 years. The average interest rate for STD loans is much higher than for foreign currency loans (20 vs 11 percent). In addition, the maturity of STD loans is shorter, on average 2.7 years, compared with the average of 5.0 years for foreign currency loans. This difference probably reflects unobservable differences in the creditworthiness of borrowers obtaining loans in local currency and in foreign currency. About 80 percent of the loans have a fixed rate.

10.   Loan characteristics also vary across the four largest lenders. In terms of loan size, the largest and third largest bank extend loans which are on average twice as large as the loan amount of the other two large banks. On the other hand, the two largest banks charge an average interest rate which is slightly above the sample average of 20 percent, while the third largest bank charges a rate that is significantly lower at 6 percent. The largest bank supplies 72 percent of the foreign currency loans.

11.   The majority of the borrowers in the country have a single banking relationship and one loan. Most of the borrowers have loans only from one bank (80 percent), a few have credit with two banks (16 percent), and the remaining 4 percent with three or more banks. Around half of the borrowers have only one loan in the dataset, 25 percent have two loans and 14 percent have three loans. Another 1.5 percent of borrowers have ten or more loans. The four largest borrowers with over 30 loans in the sample borrow exclusively from one bank, and all of them are enterprises.

C. The Evolution of Non-Performing Loans and Default Rates

12.   Loan classifications in São Tomé and Príncipe are in line with international practices. According to the regulation (BCSTP, 2007), a loan exposure is classified in one of five categories, principally according to the criterion of days past-due but also taking into account the financial condition of the borrower and the status of collateral. Category VI is reserved for written-off loans. The standard definition of a NPL loan is that the borrower is late in making its scheduled payment by 90 or more days. Hence, categories III to V are considered non-performing.

Table 1. BCSTP's Loan Classification System	
Category	**Definition (based on days past-due)**
I Regular	The borrower has made all scheduled payments on time.
II Under supervision	The borrower is late in making its scheduled payment by 30-89 days.
III Below standard	The borrower is late in making its scheduled payment by 90-179 days.
IV Doubtful	The borrower is late in making its scheduled payment by 180-359 days.
V Loss	The borrower is more than 360 days late in making its scheduled payment.
VI Written off	The loan was written off from the bank's balance sheet

13.   The CRC data permit extracting descriptive statistics on NPLs. On average during the sample period, seven percent of the loans became non-performing and a 20 percent had a delayed payment of at least 30 days. Those loans that become non-performing during their lifetime do so after 15 months on average. Around 11 percent of the borrowers in the sample have had at least one loan classified as non-performing. However, the probability of a firm having a non-performing loan is much higher than the probability of an individual having a non-performing loan: 39 percent of the firms in the sample had at least one non-performing loan compared to 10 percent among individual borrowers.

14.   As of end-June 2017, non-performing loans represented 32 percent of the total loan amount and are concentrated among a small number of borrowers as well as banks. The top 10 delinquent borrowers (about 1 percent of the borrowers with NPLs) account for 43 percent of the total NPL amount, with the top 3 borrowers representing 22 percent. Among the top 10 borrowers with NPLs, nine are firms, mainly from the wholesale trading sector. One active bank holds 32 percent of the loans classified as a loss (unweighted number), while a liquidated bank holds another 40 percent.

15.   NPLs have significantly different characteristics than performing loans (Table 2). NPLs have a higher interest rate, a longer maturity, are more likely to be denominated in local currency, are larger and tend to have a fixed rate. Although these differences in characteristics between NPL and non-NPL loans are statistically significant, their magnitude is fairly small, with the exception of the loan amount and having a fixed rate. At the same time, these differences can also reflect unobservable borrowers' creditworthness.

Table 2. São Tomé and Príncipe: Average Characteristics of NPL and Performing Loans

Non-performing loans	Performing Loans	Difference statistically significant?
21	19	yes
3.0	2.8	yes
93	96	yes
200	100	yes
58	59	no
80	64	yes

16.   Having had a NPL in the past does not seem to reduce the chances of getting a new loan in the future. In fact, 45 percent of the borrowers who had a delay in loan repayment of more than 90 days are able to contract a new loan afterwards. Of these new loans, 41 percent is with the same bank where the delay occurred and 59 percent are with a different bank.
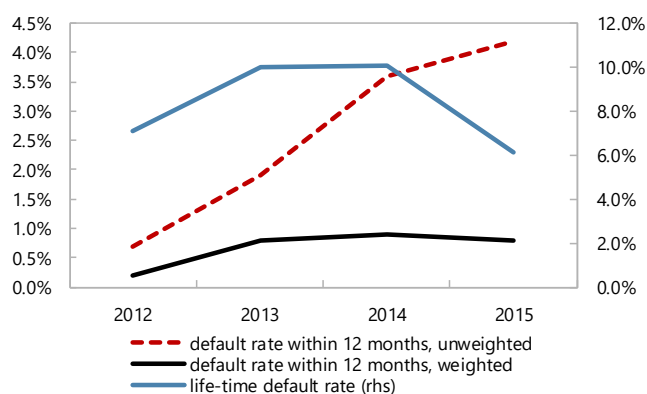
17.   Borrowers having relationships with more than one bank are more likely to have a NPL. As a matter of fact, 10 percent of the loans from multiple-bank borrowers were NPL, compared to 6 percent of the loans from single-bank borrowers. On the other hand, having more than one loan does not seem to influence the probability that a borrower will have a NPL loan. This suggests that some borrowers explored banks' incomplete information about their credit histories.

18.   Default rates of new loans increased during 2012-15 (Figure 4). Vintage analysis shows that the incidence of newly-granted loans turning non-performing within the first 12 months rose from 0.2 percent for the 2012 vintage to 3.5 percent in the 2015 vintage.[4] If weighting this rate by the number of months that a loan stayed in default during that 12-month period, the default rate drops significantly, as on average a loan is only around 4 months in default within the first year before performing

Figure 4. São Tomé and Príncipe: Default Rates per Origin Year, 2012-15

(Percent of loans originated in a given year)

- - - default rate within 12 months, unweighted
—— default rate within 12 months, weighted
—— life-time default rate (rhs)

Sources: BCSTP and IMF staff

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[4] It is possible that the timing of NPL recognition and opportunistic behavior on the part of borrowers at a failing bank affected the default rate in 2015.

again.[5] This weighted default rate has also trended up, but more moderately. The BCSTP reported to the mission that the 12-month default rate picked up toward the end of 2017 (i.e. outside the data sample), reaching 6.7 percent in December 2017. It is natural that lifetime default rates (depicted on the right axis) are much higher, having peaked at around 10 percent in 2014, but have been trending lower in recent years because loans are still relatively new to default.

19.   **A more comprehensive vintage analysis illustrates that default rates at different time horizons have been rising throughout the sample period (Table 3).** It is natural that the default rate rises as a loan ages. The vintage table below shows that loans issued in 2015 showed a 1.7 percent delinquency rate after only one month, with the rate increasing gradually to 5.8 percent after 18 months.[6] However, as with the 12-month default rates, default rates at other time horizons also increased during 2012-15, before receding somewhat in 2016.[7] For example, the 3-month default rate increased from 0.4 percent in the 2012 vintage to 1.7 percent in the 2015 vintage.

Table 3. São Tomé and Príncipe: Comprehensive Vintage Analysis, 2012-16 (In percent)									
Default rate after month:	**1**	**3**	**6**	**12**	**18**	**24**	**32**	**36**	**48**
2012	0.4	0.4	0.4	0.7	1.4	1.8	3.5	4.2	5.7
2013	0.8	0.8	1.0	1.9	3.7	5.1	6.5	7.2	
2014	0.5	1.3	2.0	3.6	5.3	6.1	8.3		
2015	1.7	1.7	2.6	4.2	5.8				
2016	0.3	0.5	0.9						

20.   **To understand in more detail the dynamics of loan developments, transition matrices are contructed to show the migration within the loan classification system.** Table 4 presents the monthly transition matrix of loan classifications, averaged over the entire 2011-17 sample period. The entries in the matrix are sample frequencies of transitions from one category to another which occurred in a given period (Feng et al., 2008). It can also be construed as the probability that a loan

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[5] The unweighted variant of the 12-month default rate is called "cohort approach" which takes only the observed proportions form the beginning of the period to the end into account, whereas the weighted variant ("duration approach") recognizes the time spent in the starting state to obtain the migration intensity (Hanson and Schuermann, 2004). Another variant of the latter takes account of multiple intra-year classification changes (e.g. from category I to III, and then from category III to II), but this more intricate weighted default rate is not implemented in this paper.

[6] For 2012, a default rate of 5.7 percent after 48 months is compatible with the lifetime default rate of 7.1 percent shown in figure 4. When calculating the default rate after 66 months for the 2012 vintage (the highest span possible in the case that a loan was extended in January 2012 and observed until June 2017), the same default rate of 7.1 percent is obtained.

[7] The maximum time horizon in 2015 and 2016 is less than the full two years and one year, respectively (limited to 18 and 6 months) because the data sample ends in June 2017.

will change its classification category next month or remain unchanged, given its current classification. On average, two percent of "regular" (category I) loans were re-classified as "under supervision" (watchlist loans with payment delayed by 30-89 days). Once a loan is classified as "under supervision," there is still a high chance of 42 percent that it will turn "regular" again in the next month. However, this probability decreases considerably to at most 5 percent once a loan is classified as non-performing ("below standard", or worse). Once a loan is classified as "below standard", there is actually a higher probability (9 percent) that the classification of this loan will worsen to "doubtful" (category IV) or "loss" (category V) in the next month.

Table 4. São Tomé and Príncipe: Transition Matrix						
(Average of Monthly Transitions, 2011-17 Period, in percent)						
	cat I	cat II	cat III	cat IV	cat V	cat VI
cat I - regular	97.8	1.9	0.1	0.1	0.1	0.0
cat II - under supervision	41.6	53.9	3.8	0.4	0.3	0.0
cat III – below standard	4.6	1.7	85.0	7.0	1.6	0.0
cat IV - doubtful	2.1	0.4	1.2	90.5	5.1	0.7
cat V - loss	3.3	0.1	0.2	0.3	96.2	0.0
cat VI - written off	1.7	0.0	0.0	0.0	0.0	98.3

21.   A comparison of transition matrices at different years reveals recent trends in loan classifications. Comparing the average monthly transitions for 2015, 2016, and the first half of 2017 (Tables 5 to 7), three trends become apparent. First, there is an increased transition rate for category II watchlist loans back to category I (54.8 percent versus 40.0 percent). Second, once loans are classified in the "early" NPL categories III and IV, a higher share now migrates to the loss category V (a combined rate of 17.9 percent compared to 11.5 percent in 2015); this is reportedly explained by more stringent loan classification, particularly in the context of on-site inspections. Third, the unsound practice of ad-hoc re-classifcation of loss loans as regular category I loans—perhaps following loan restructuring—has been diminished in 2017 compared to previous years (0.8 percent versus 5.7 percent in 2016). Similarly, there are no more cases of written-off loans being put back into category I as was the case in previous years (particularly in 2015 with a transition rate of 7.6 percent).

Table 5. São Tomé and Príncipe: Transition Matrix
(Average of Monthly Transitions, January-December 2015, in percent)

	cat I	cat II	cat III	cat IV	cat V	cat VI
cat I - regular	96.4	3.2	0.0	0.1	0.2	0.1
cat II - under supervision	40.0	53.7	5.8	0.3	0.2	0.0
cat III – below standard	2.8	3.3	82.3	11.0	0.5	0.1
cat IV - doubtful	3.3	0.4	1.3	93.0	1.8	0.1
cat V - loss	1.3	0.3	0.1	0.5	97.9	0.0
cat VI - written off	7.6	0.0	0.0	0.0	0.0	92.4

Table 6. São Tomé and Príncipe: Transition Matrix
(Average of Monthly Transitions, January-December 2016, in percent)

	cat I	cat II	cat III	cat IV	cat V	cat VI
cat I - regular	94.3	5.3	0.0	0.1	0.3	0.0
cat II - under supervision	49.9	47.8	1.8	0.4	0.1	0.0
cat III – below standard	4.3	1.5	84.1	8.7	1.4	0.0
cat IV - doubtful	1.5	0.8	1.7	94.8	1.2	0.0
cat V - loss	5.7	0.0	0.2	0.2	93.8	0.0
cat VI - written off	0.4	0.0	0.0	0.0	0.0	99.6

Table 7. São Tomé and Príncipe: Transition Matrix
(Average of Monthly Transitions, January-July 2017, in percent)

	cat I	cat II	cat III	cat IV	cat V	cat VI
cat I - regular	98.9	0.9	0.0	0.2	0.0	0.0
cat II - under supervision	54.8	36.1	5.1	0.1	3.8	0.0
cat III – below standard	3.0	1.9	77.2	5.4	12.5	0.0
cat IV - doubtful	0.4	0.2	0.6	73.4	25.3	0.1
cat V - loss	0.8	0.0	0.0	0.3	98.9	0.0
cat VI - written off	0.0	0.0	0.0	0.0	0.0	100.0

22.   Expanding the analysis further to include the transition matrix based on loan value shows that small loans are more likely to become temporarily non-performing. Contrary to the previous matrices that count the number of loans maintaining or changing their status, this variant sums up the carrying value of the loans in each cell and then expresses the transitions in percentage

terms as before. Transition rates will be relatively higher when it is mostly large loans that migrate to other categories and vice versa. Comparing the two matrix variants for the first half of 2017 (Table 8) illustrates that the transition rates for category II and III loans returning to category I (regular) are much lower when basing the transitions on carrying amounts (see Table 6). The implication is that many small loans—probably mostly consumer loans—become temporarily past-due before debtors can clear their arrears. As the mission learned from banks, the delay is in some cases caused by late salary payments to the borrowers.

Table 8. São Tomé and Príncipe: Transition Matrix, Amount-Weighted						
(Average of Monthly Transitions, January-June 2017, in percent)						
	cat I	**cat II**	**cat III**	**cat IV**	**cat V**	**cat VI**
cat I - regular	98.9	0.6	0.1	0.2	0.2	0.0
cat II - under supervision	6.0	90.7	0.7	0.0	2.6	0.0
cat III – below standard	0.2	0.6	82.2	0.6	16.5	0.0
cat IV - doubtful	0.0	0.0	0.0	77.5	22.4	0.1
cat V - loss	0.3	0.0	0.1	0.2	99.4	0.0
cat VI - written off	0.0	0.0	0.0	0.0	0.0	100.0

23.   The low transition rate from category V to VI is consistent with the fact that banks do not have the practice of writing off loans. During the sample period, only one financial institution—a bank being liquidated—wrote off loans from its balance sheet. On average, loans are labeled as a "loss" (over 365-day payment delay) but are still not written off for 9 months (median: 5 months). Ten percent of the category V loans are labeled as a loss for at least 22 months, with 80 percent of these loans concentrated in one bank. This bank has in its portfolio a loan labeled as a loss for over five years.

24.   The data also suggest that loan classification appears imperfect at individual banks, based on the criterion of number of days past due. A necessary condition for a well-functioning banking supervision is that loans are classified correctly in a timely manner. If loans are classified correctly, the changes in loan categories are stepwise, i.e. that a loan from category I (regular) will move to category II (30-89 days) first and not directly to category IV (180-359 days), although that may be sensible in rare cases when loan repayment suddenly becomes doubtful.[8] A correct reclassification in accordance with the criterion of days past due occurred in 86 percent of the cases; for the rest a loan worsened by more than one category within a month, which is inconsistent with the classification schedule that downgrades loans with intervals of longer than 30 days. Other

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[8] Obviously, there may be other triggers for re-classifying a loan by more than would be appropriate based on the "days past-due" criterion that make a borrower unlikely to pay such as the personal situation (e.g. sudden loss of income) or non-compliance with the requirement to provide updated financial information to the bank.

problematic cases include loans that were downgraded only after more than two months even though they should have been downgraded within a shorter interval.[9] One in every five loans that have a category worse than "regular" seems to be misclassified by staying longer than appropriate in a given category. Among the four largest banks, the loan classification that would appear correct solely based on the days past-due criterion ranges from 20 to 96 percent.

D.   Conclusions and Recommendations

25.   This paper analyzes credit developments in the banking system based on loan information from São Tomé and Príncipe's credit registry. The main conclusions from the analysis are that (i) the high credit concentration gives rise to vulnerabilities as banks depend on the performance of a few clients; (ii) mainly enterprises are responsible for the excessive levels of NPLs, while households' contribution is small; and (iii) banks are reluctant to write off NPLs, which may be due to protracted or partial recovery of underlying collateral. Vintage analysis shows that default rates increased through 2015 before receding somewhat. Finally, transition matrices calculated for the entire sample illustrate that once a loan became non-performing, it tends to deteriorate further. Nevertheless, matrices for recent years show that more loans are recovered during early past-due periods; the high rate of transition from past-due to the loss category also suggests that loan classification practices are becoming more consistent.

26.   The existence of a comprehensive credit registry is a major accomplishment for a small fragile state, and going forward, it can facilitate financial stability analysis. The scope of the information gathered in the credit registry is unusually wide for a small developing country. Indeed, it provides a wealth of data, encompassing many important characteristics of the bank-borrower relationship. In addition, issues with data quality appear relatively minor. The credit registry data can be used consistently for banking supervision purposes. In particular, it can be used to track the evolution of the loan quality for the entire system or individual banks and portfolios. In this, the objective is to spot emerging loan deterioration early on —such as a rising transition rate from category I to II—in order to take remedial measures before there is pronounced rise in NPLs. Also, the computed 12-month default rates can potentially be used to derive an estimate of expected loan loss, provided that information on loan recovery rates is gathered as well.

In light of the findings, the credit registry and loan classification practices may be improved further:

The credit registry can be further improved by:

- making available more information on the borrowers, such as income, wealth, and gender;

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[9] For example, while it is possible for a loan to stay longer than two months in category II (30-89 days) because the borrower keeps paying but with a one-month lag, such a scenario is unlikely.

- collecting information on the collateral underlying a loan and its estimated value, which could be used for macroprudential purposes; and

- classifying borrowers/loans according to these principal economic sectors (e.g. agriculture, manufacturing, construction trade, services etc.). The credit registry already includes information about the sector of the borrower, but the classification is so granular and not standardized, making it difficult to conduct an analysis.

The regulation and supervision can be enhanced by:

- obliging banks to write-off non-performing loans from their balance sheets after a certain period (e.g., after two years in category V).

- reclassifying restructured loans as performing only after certain period of compliant debt service (e.g., 12 months),[10] instead of immediately.

- continuing to strive for a timely and correct classification of loans so that such action is fully inconsistent with the BCSTP's loan classification system.

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[10] The guidance by the European Central Bank on the treatment of restructured loans that are to be re-classified from non-performing to performing status requires, inter alia, the completion of a "cure period" of one year and that the debtor's behavior demonstrates that financial difficulties no longer exist, specifically that there is no past-due amount and that the borrower has a demonstrated an ability to comply with the post-forbearance conditions (European Central Bank, 2016).

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