



# TRINIDAD AND TOBAGO

## SELECTED ISSUES

June 2024

This paper on Trinidad and Tobago was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on April 22, 2024.

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**International Monetary Fund**  
**Washington, D.C.**



# TRINIDAD AND TOBAGO

## SELECTED ISSUES

April 22, 2024

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**Western**  
**Hemisphere**  
**Department**

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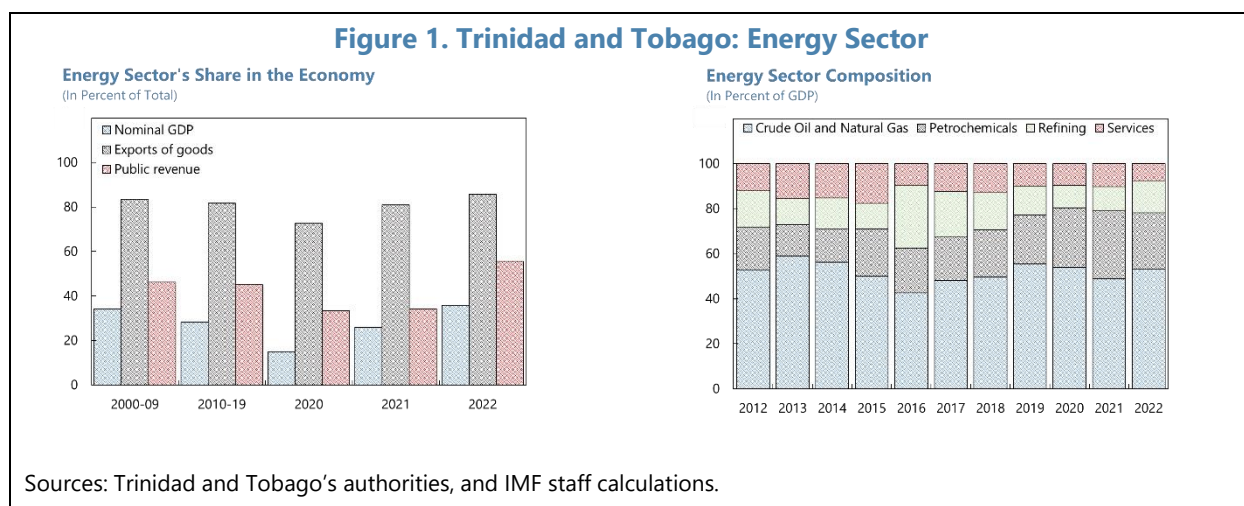
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# BUILDING A RULES-BASED FISCAL FRAMEWORK FOR TRINIDAD AND TOBAGO<sup>1</sup>

Trinidad and Tobago's authorities have reaffirmed their commitment to fiscal prudence and rebuilding buffers. Currently, they are making efforts to strengthen the fiscal accounts and are committed to implementing fiscal reforms to reinforce fiscal and debt sustainability, including by exploring options to further developing their fiscal framework. Adopting a clear medium-term fiscal anchor consistent with the authorities' policy goals is key to promote fiscal discipline, support fiscal sustainability, and help build fiscal buffers. This note aims to provide an overview of potential benefits of adopting a formal fiscal rule for Trinidad and Tobago, along with an overview of the international experience with anchoring fiscal policy in natural resource-rich countries.

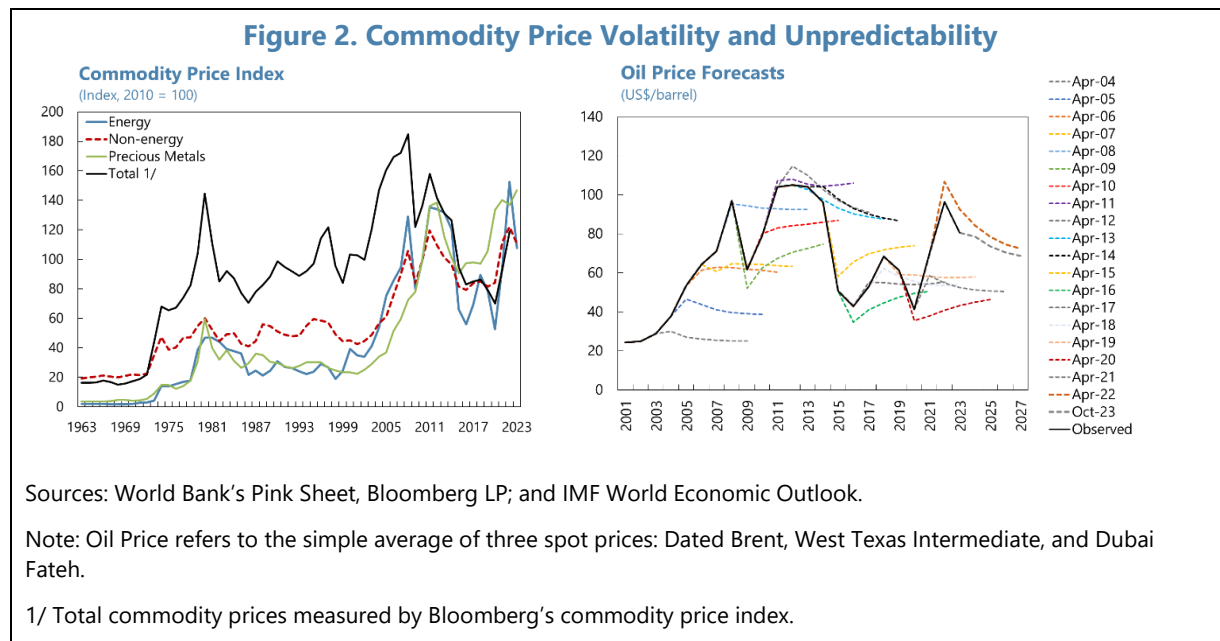
## A. Introduction

**1. Trinidad and Tobago's economic activity, and its external and fiscal revenues are heavily dependent on its oil and gas.** In 2022, the energy sector, including petrochemicals, accounted for about 36 percent of GDP, 86 percent of total exports, and 56 percent of total central government revenue. The sector is comprised of exploration and production of crude oil, condensate, and natural gas (53.1 percent of energy sector GDP), petrochemicals (25.1 percent), refining (14.3 percent), and services (7.5 percent). Between 2010 and 2019, declining production due to the country's maturing fields and lower energy prices, consistently weighed down the sector's contribution to economic activity and government revenues. The sector regained momentum following Russia's invasion of Ukraine but continues to face important structural and cyclical challenges that will affect the country's foreign exchange earnings, fiscal accounts, and the overall stability and sustainability of the economy.



<sup>1</sup> Prepared by Ali Al-Sadiq and Diego Gutiérrez.

**2. The volatility and uncertainty of energy prices pose considerable challenges for policymakers.** Energy price fluctuations are often large, persistent, and asymmetric. For instance, oil prices increased from a low of US\$23 per barrel in April 2020 to a peak of US\$115 per barrel in June 2022 (Figure 2). Moreover, energy prices are not only driven by cyclical fluctuations, but also display long-term trends, making them very difficult to forecast (IMF, 2012). Energy price fluctuations can range between 40–80 percent over a decade (IMF, 2015). This volatility and uncertainty of energy prices complicates fiscal management, budgetary planning, and undermines macroeconomic stability as it induces boom-bust cycles in natural resource-rich countries. As a result, fiscal accounts often display a procyclical fiscal spending bias, given the difficulties of delinking fiscal revenues and expenditures.



**3. The exhaustibility of the non-renewable resources coupled with global actions to tackle climate change and the green energy transition compound the challenges for fiscal management.** Climate mitigation and the global transition to low carbon economies is expected to reduce global demand for fossil fuels. This will adversely affect fossil fuels' revenues and the viability of fossil fuel extraction. It also exacerbates intertemporal trade-offs for policymakers as they will have to decide how much of the resource wealth to consume and how much to save.<sup>2</sup>

**4. These challenges call for strengthening the fiscal policy frameworks in natural resource-rich countries like Trinidad and Tobago.** Policy frameworks need to help ensure an orderly

<sup>2</sup> Energy resources create opportunity to foster economic development and a smooth transition helping diversify the economy (e.g., via spending on infrastructure, digitalization, healthcare, and education). Over the past few decades, high government expenditure on infrastructure, education, healthcare, and social programs has transformed Trinidad and Tobago's economy and supported some of the highest living standards in the Caribbean region.

transition that secures the stability, sustainability, and intergenerational equity of these economies, and its fiscal accounts.

**5. A well-designed rules-based fiscal framework can help strengthen fiscal management.**

Adopting a strong rule-based fiscal framework would help: (i) limit fiscal policy procyclicality (by delinking expenditures from resource revenues), and (ii) smooth government consumption over time, ensuring balanced growth, and avoiding the need for massive fiscal adjustment once resource wealth has been depleted.

**6. This note aims to support policy discussions by examining the potential benefits and risks of adopting a rule-based fiscal framework for Trinidad and Tobago.**

It puts into perspective the international experience with anchoring fiscal policy in natural resource-rich countries. The rest of the note is organized as follows. Section B discusses Trinidad and Tobago's fiscal performance and the rationale for a rule-based fiscal framework, while highlighting ongoing fiscal reforms and the strengthening of fiscal institutions in Trinidad and Tobago. Section C reviews options and challenges for designing fiscal rules for Trinidad and Tobago, drawing lessons from international experience. Section D concludes.

## **B. Macro-Fiscal Context in Trinidad and Tobago**

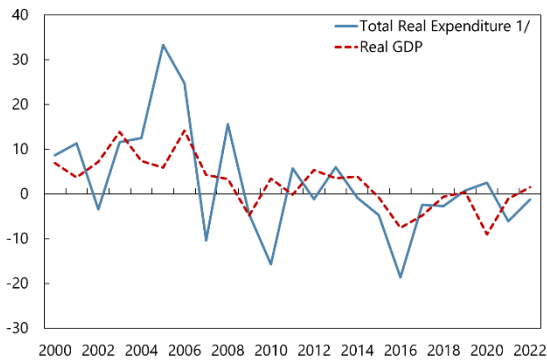
**7. Large and persistent swings in commodity-related revenue sometimes results in a procyclical fiscal stance.** Fiscal policymakers tend to increase spending during periods of expansion (when commodity prices are high) while they are forced to reduce spending when commodity prices and revenue decline (Ilzetzki and Vegh, 2008; Villafuerte and Lopez-Murphy, 2010; Erbil, 2011). This procyclical behavior leads to considerable output volatility which undermines overall macroeconomic performance and complicates macroeconomic management.

**8. Historically, Trinidad and Tobago's business cycle has been highly synchronized with global oil price cycles.** The collapse of oil and gas prices in 2014 had an immediate adverse impact on economic performance. Real GDP growth declined by 7.5 percent in 2016; offsetting the average growth of 2.8 percent observed over 2013-15 (Figure 3). Business cycle fluctuations have also been affected by oil and gas price fluctuations as the standard deviation of nominal GDP is one of the highest among Caribbean countries. Other relevant macroeconomic variables have shown similar trends, as energy prices declined, export receipts fell, external balance weakened (e.g., moved into deficit in 2016), and international reserves declined significantly.

**Figure 3. Trinidad and Tobago: Oil Price Volatility and Macroeconomic Performance**

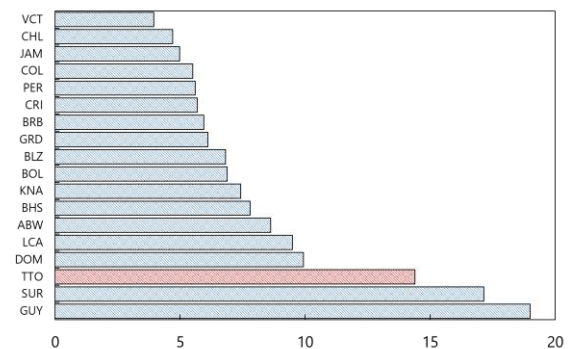
**Real Expenditure and Real Growth**

(In Percent Change)



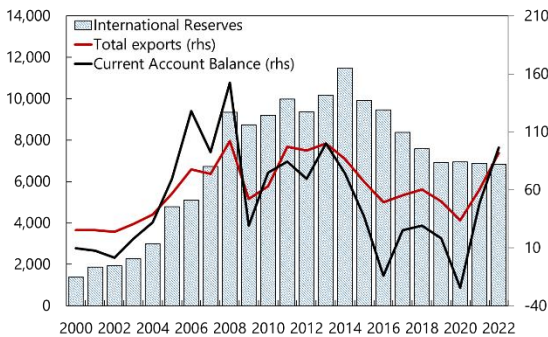
**Volatility of Nominal GDP Growth**

(Standard Deviation, 2000-2022)



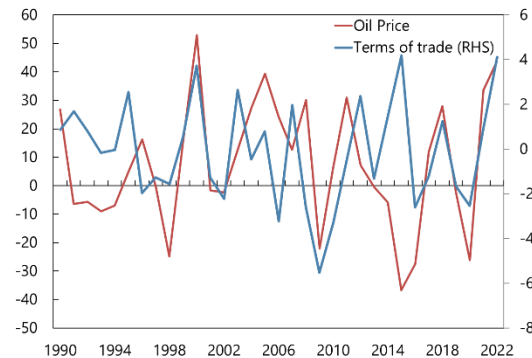
**External Performance**

(In US\$ Million, and Index 2013 = 100 [RHS])



**Terms of Trade and Oil Price**

(In Percent Change)



Sources: Trinidad and Tobago’s Authorities; IMF World Economic Outlook; and IMF staff calculations.

Note: Oil Price refers to the simple average of three spot prices: Dated Brent, West Texas Intermediate, and Dubai Fateh.

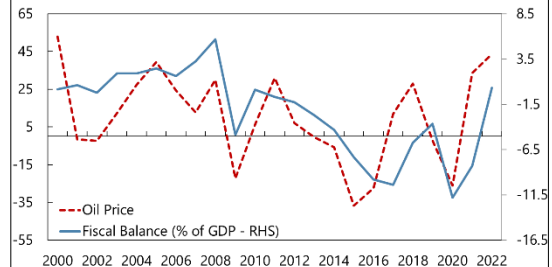
1/ Real Expenditure deflated using Consumer Price Index, 2013 base.

**9. Fiscal performance in Trinidad and Tobago has been shaped by the movements in global energy prices.**

The fiscal balance is highly sensitive to oil price volatility—displaying a correlation of 0.8. This became evident with the collapse of oil prices in 2009 and 2014. More broadly, the decline in oil prices over the first half of last decade resulted in a sharp deterioration of the fiscal balance, which swung from a surplus of 0.1 percent in FY2010 to a deficit of 10.4 percent of GDP in FY2017.<sup>3</sup> It is also worth noting, that total expenditures increased with oil prices but proved to be sticky when oil prices declined. This asymmetry was evident between FY2001

**Fiscal Balance and Oil Price**

(In Percentage Change, and Percent of GDP)



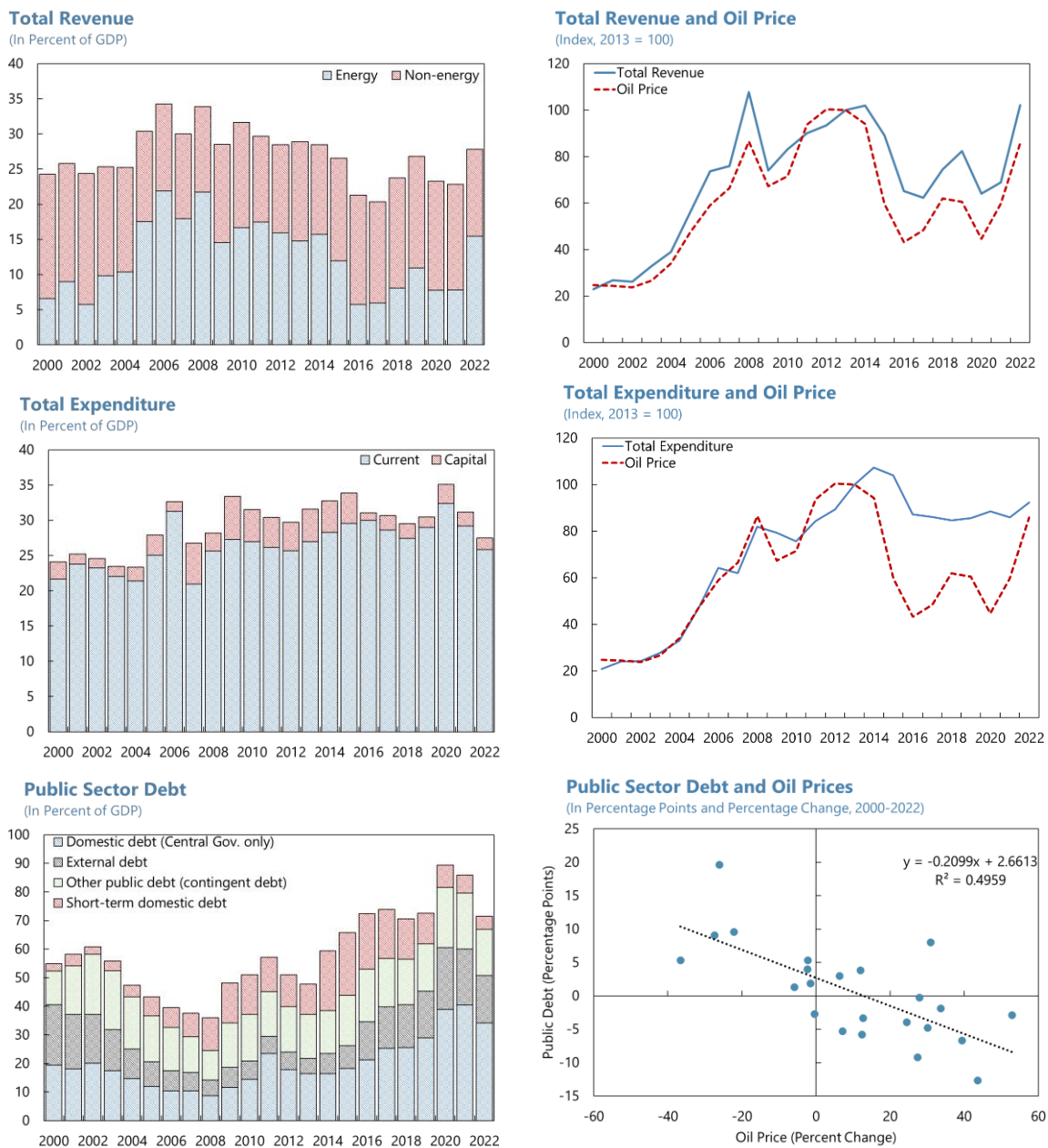
Sources: Trinidad and Tobago’s authorities and IMF staff calculations. Note: Oil price refers to the simple average of three spot prices: Dated Brent, West Texas Intermediate, and Dubai Fateh.

<sup>3</sup> The standard deviation of energy revenue in percent of GDP exceeded 5 percent over FY2000-17.



and FY2015. Total central government expenditure increased with the upswing of oil prices but did not decline after 2015 (Figure 4).

**Figure 4. Trinidad and Tobago: Fiscal Performance and Oil Prices**



Sources: Trinidad and Tobago’s Authorities; and IMF staff calculations.

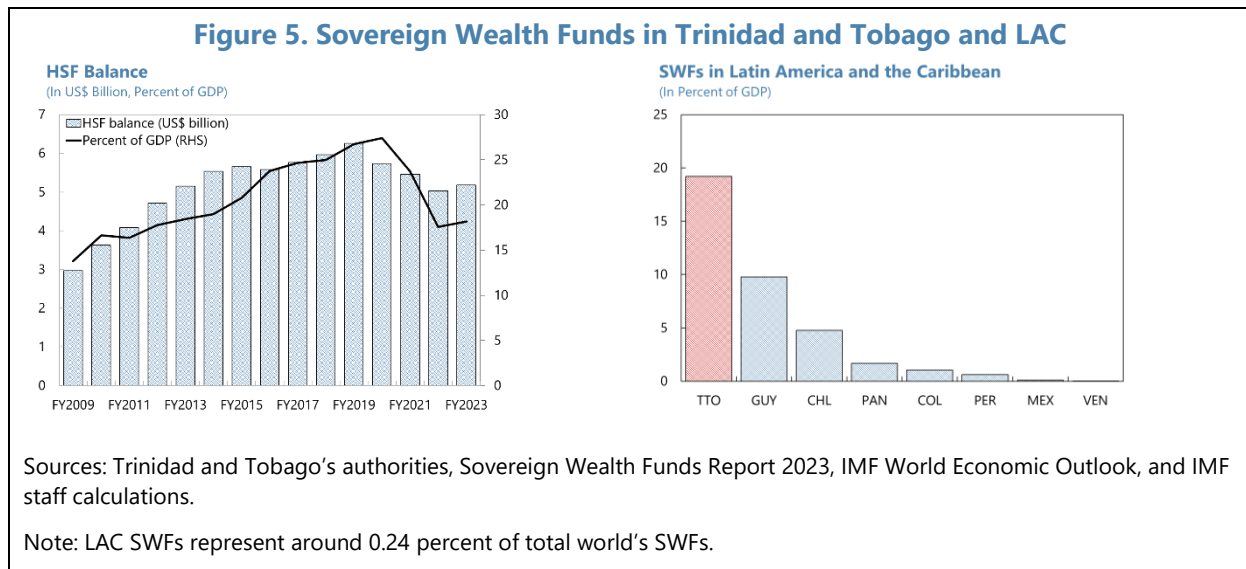
Note: Oil Price refers to a simple average of three spot prices: Dated Brent, West Texas Intermediate, and Dubai Fateh. Data refers to fiscal year, for example 2022 covers FY2022 (October 2021–September 2022).

**10. To address rising fiscal vulnerabilities, the authorities embarked on an ambitious fiscal adjustment program during 2015–19.** They took commendable steps to adjust fiscal imbalances by reforming the energy tax regime, boosting non-energy revenues, and reducing fuel subsidies. On the

revenue side, royalties on energy production were standardized and the base corporate tax rate was increased. Fuel subsidies were gradually removed, while ensuring vulnerable groups were protected from the removal. As a result, the overall fiscal deficit was substantially reduced to 3.8 percent of GDP by FY2019.

**11. The fiscal position deteriorated due to the outbreak of COVID-19 pandemic, stalling the consolidation efforts.** Fiscal consolidation efforts were hindered in 2020 by the decided and urgent response required to confront the COVID-19 pandemic. The overall fiscal deficit reached a record high of 11.8 percent of GDP in FY2020, and the central government debt rose sharply to 60.6 percent of GDP in FY2020. Although debt reversed its increasing trend in FY2022 due to higher energy revenues, debt-to-GDP ratio remained at a higher level than before the COVID-19 pandemic.

**12. The authorities have also aimed to manage the swings in energy prices with its Sovereign Wealth Fund.** In 2007, the authorities established the Heritage and Stabilization Fund (HSF) to help stabilize the economy and strengthen long-term fiscal management. The HSF replaced the Revenue Stabilization Fund, with the aim to save and invest energy revenue exceeding budgetary projections.<sup>4</sup> This arrangement has allowed Trinidad and Tobago to accumulate financial buffers during periods of high energy prices and diversify energy revenues into a wide range of financial investments. It helped cushion the impact of revenue downturns caused by falls in the energy prices and help sustain expenditure during such periods and bring down borrowing costs for the sovereign while accumulating sufficient financial resources for future generations. The HSF’s assets reached 19.2 percent of GDP at end-September 2023, becoming the largest SWF in the region, followed by that of Guyana and Chile.

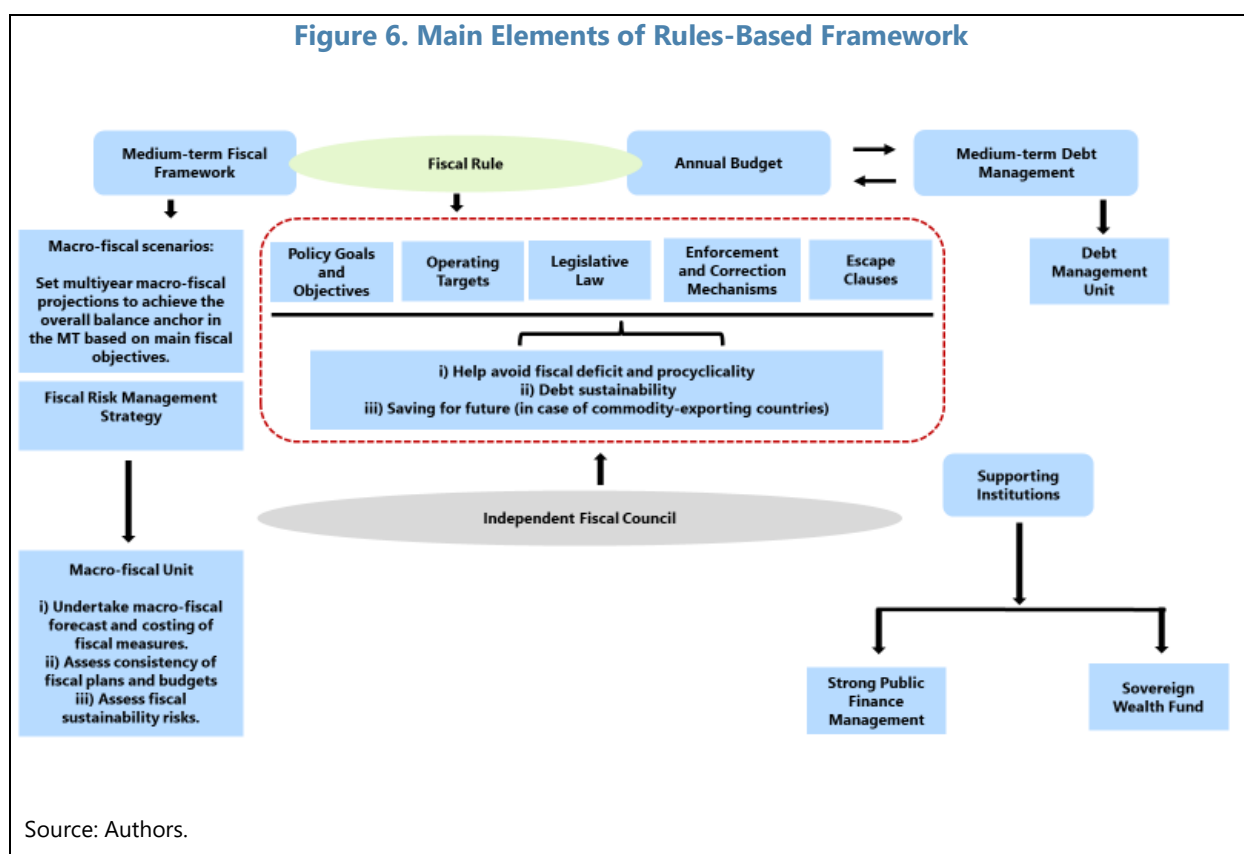


**13. Trinidad and Tobago could build on recent fiscal reforms to limit its exposure to commodity price fluctuations and further strengthen its fiscal framework.** The government has

<sup>4</sup> The broad objectives of the HSF are to save part of the energy sector revenues for stabilization, intergenerational wealth transfer, and strategic investments.

been proactive in introducing policies to reduce the large fiscal deficit, strengthen the budget process, formulate medium-term fiscal projections, and increase transparency. To guide its fiscal adjustment, it has set itself a soft-debt target of 75 percent of GDP to maintain fiscal discipline and intends to maintain a fiscal balance of around 3 percent of GDP over the medium term.<sup>5</sup> However, it would be better to formalize and better integrate these policies. For example, its fiscal balance and debt targets are not articulated in a medium-term fiscal framework (MTFF) and lack a short-term operational rule(s) on fiscal aggregates that is linked to the main objective of fiscal policy. Moreover, it is important to ensure consistency between these goals, the budget, and the near- and medium-term macroeconomic forecasts.

**14. A rules-based fiscal framework consists of several main elements that guide the management of a country's fiscal policy.** These elements include, a medium-term fiscal framework (MTFF), fiscal rules, a fiscal responsibility law, independent fiscal institutions, and fiscal risk management (Figure 6).



<sup>5</sup> The authorities previously had a soft-debt target of 65 percent of GDP. Moreover, prior to COVID-19 crisis, the government aimed to balance the budget by FY2021 and generate fiscal surpluses over the medium term.

## C. Main Aspects of Fiscal Rules

### Objectives and Effectiveness

**15. Well-designed fiscal rules can play a key role in promoting fiscal discipline and preserving fiscal sustainability.**<sup>6</sup> Fiscal rules can help avoid fiscal deficit and procyclicality biases because they fulfill several main purposes (Eyraud et al., 2018): (i) *Commitment device*: by imposing numerical limits, they limit the use of fiscal discretion, and serve as a focal point for politicians; and (ii) *Signaling effect*: by enhancing transparency in a context of imperfect information and revealing the government's priorities and plans.

**16. Fiscal rules also help build and preserve financial buffers which can be used to achieve the government's main objectives.** Government spending tends to follow a cyclical pattern: increasing during good times and cutting back during bad times, leading to higher deficits and the accumulation of public debt. Fiscal rules discourage spending by limiting government's ability to grow expenditures during good times. This is done by conducting countercyclical policy while creating fiscal space to respond in bad times. Thus, well-designed fiscal rules help limit fiscal policy procyclicality and encourages savings during good times.

**17. Fiscal rules contribute, on average, to help countries display lower fiscal deficits relative to countries without such rules, but their effectiveness depends on their design.** While several empirical studies find that the use of fiscal rules is correlated with better fiscal performance (Eyraud and others, 2018 and Apeti and others 2023), fiscal rules are not a "one-size fits-all" product. That is, their effectiveness of correcting deficit and procyclical biases depends on their type and design.

### Selecting Fiscal Rules

**18. Effective fiscal rules generally have several desirable features.** Rules are selected based on their effectiveness in correcting fiscal policy biases—by ensuring fiscal sustainability and economic stabilization. Their efficiency hinges on their simplicity, operational guidance, resilience, flexibility, and ease of monitoring and enforcement (IMF, 2018). In particular, the choice depends on some operational aspects:

- *Sustainability*: Compliance with the rule should ensure long-term debt sustainability.
- *Stabilization*: Following the rule should not increase (and might even decrease) economic volatility. Economic stabilization requires that the rule lets automatic stabilizers operate and/or allows discretionary countercyclical changes in taxes or expenditures.

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<sup>6</sup> Fiscal rules are defined as constraints on fiscal policy through a simple numerical target on fiscal aggregates such as expenditure, revenue, the budget balance, cyclically adjusted balance, and debt.

- *Simplicity*: The rule should be easily understood by decision makers and the public, and it should be possible to translate the implications of the rule into clear operational guidance in the annual budget process.
- *Controllability*: Budget aggregates targeted by the rule should be under the control of the policymaker.
- *Resilience*: A rule should be in place for a sustained period to build credibility and should not be easily abandoned after a temporary shock.
- *Ease of monitoring and enforcement*: It should be easy to verify compliance, and policy makers should be accountable for deviations from the rule.
- *Flexibility*: The rule should be flexible so that it can be modified in case of permanent economic shocks. Debt brakes and escape clauses can provide adequate flexibility, but they should be introduced with pre-established triggers, and to the extent possible, with clear criteria on how to distinguish temporary from permanent shocks.

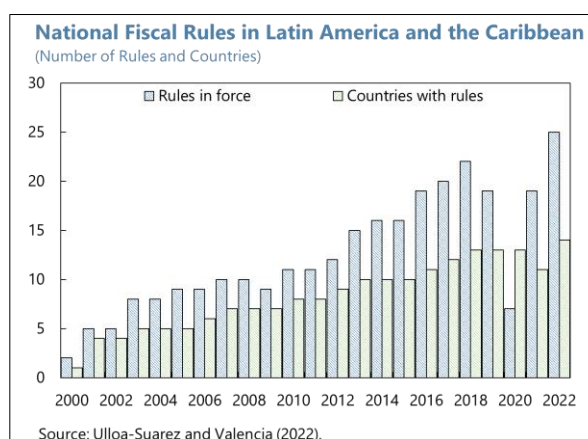
### 19. The design of a rule-based fiscal framework tends to be structured around two pillars.

These are: (i) a fiscal anchor linked to the final objective of the fiscal policy; and (ii) one or more operational rule on a fiscal aggregate (IMF, 2018). The debt-to-GDP ratio is usually a natural fiscal anchor since it provides a guide for medium-term fiscal expectations, creates an upper-limit for repeated fiscal slippages, and allows for a threshold that can be calibrated to ensure long-term fiscal sustainability. The short-term operational rules that are under the direct government's control and have a close link to debt dynamics, include (i) a budget balanced rule (e.g., ceiling on the headline deficit or expenditures limit, some sort of cyclically-adjusted, structural, or over-the-cycle fiscal balance target), (ii) an expenditure rule, and (iii) a revenue rule (Table 1).

### Use of Fiscal Rules: Global Trends

#### 20. In recent decades, there has been an international trend toward adopting fiscal rules.

As of end-2021, about 105 economies had adopted at least one fiscal rule, up from 94 countries in 2015 and 9 countries in 1985. Also, the number of emerging market and developing economies (EMDEs) with fiscal rules has risen rapidly since the late 2000s. As of end-2021, there were more than twice EMDEs with fiscal rules than advanced economies (Davoodi et al., 2022). The number of fiscal rules in force at the national level in Latin America and the Caribbean (LAC) increased from 2 in 2000 to 25 in 2022 (Ulloa-Suarez and Valencia, 2022).

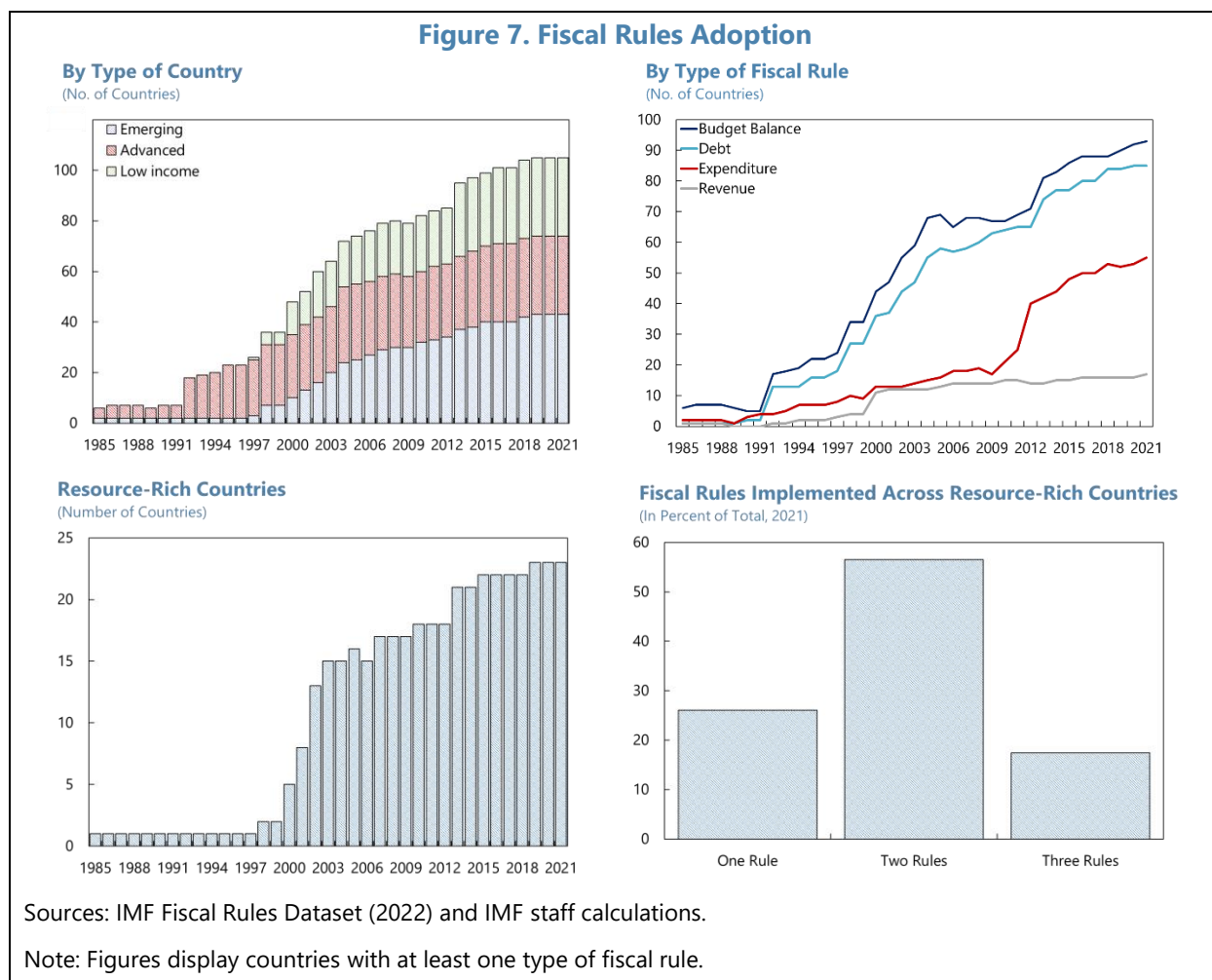


**Table 1. Overview and Assessment of Operational Fiscal Rules**

Rule Type	Advantages	Disadvantages
<b>Budget balance rules</b>		
a) <b>Overall fiscal balance:</b> Ceiling on the headline deficit (in nominal terms or in percent of GDP).	<ul style="list-style-type: none"> <li>• Easy to communicate, compute, and monitor.</li> <li>• Closely linked to debt dynamic.</li> </ul>	<ul style="list-style-type: none"> <li>• Can lead to procyclicality.</li> <li>• Can reduce the quality of the budget composition.</li> </ul>
b) <b>Golden rule:</b> Ceiling on the overall deficit net of capital expenditures (also called current balance).	<ul style="list-style-type: none"> <li>• Promotes and protects capital expenditures.</li> <li>• Consistent with intergenerational equity.</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to monitor and enforce.</li> <li>• Can lead to excessive borrowing.</li> <li>• Weak link to debt sustainability.</li> </ul>
c) <b>Cyclically-adjusted rule:</b> Limits on the overall balance, correcting for the effects of business cycle fluctuation on budget (measured in relation to potential output).	<ul style="list-style-type: none"> <li>• Enhances economic stabilization.</li> <li>• Good operational guidance.</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to monitor and enforce.</li> <li>• Requires timely and reliable estimates of the output gap.</li> <li>• Prone to frequent ex-post revisions resulting from measurement errors.</li> </ul>
d) <b>Structural balance rule</b> Extension of the cyclically-adjusted rule, adjusting the overall balance beyond the business cycle by correcting revenue and spending for one-off fiscal measures and other economic cycles, such as those related to asset or commodity prices.	<ul style="list-style-type: none"> <li>• Provide greater economic stabilization by preventing countries from spending one-off revenues or revenues related to an asset price boom, which reduces the volatility of spending.</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to compute and monitor.</li> <li>• Can create numerous technical complications because of the difficulty in identifying nonstandard cycles.</li> </ul>
e) <b>Over-the-cycle budget balance rule</b> Requires the attainment of a given nominal budget balance ceiling on average over the cycle, where the limit is set and assessed as an average over the years encompassing all stages of the business cycle.	<ul style="list-style-type: none"> <li>• Good for economic stabilization</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to monitor and enforce.</li> <li>• May entail too loose/tight stance.</li> </ul>
<b>Expenditure rule</b>		
<b>Target on total, primary, or current spending.</b> Typically set in levels or growth rates and occasionally in percent of GDP.	<ul style="list-style-type: none"> <li>• Easy to communicate and monitor, with clear operational guidance.</li> <li>• Allows for macroeconomic stabilization.</li> <li>• Ensures debt sustainability</li> </ul>	<ul style="list-style-type: none"> <li>• Could lead to changes in expenditure composition to comply with rule.</li> <li>• May reduce incentive to mobilize revenues.</li> </ul>
<b>Revenue rule</b>		
<b>Floor or ceiling on the government's income proceeds.</b>	<ul style="list-style-type: none"> <li>• Raises revenue.</li> <li>• Prevents an excessive tax burden.</li> </ul>	<ul style="list-style-type: none"> <li>• Can complicate macroeconomic stabilization.</li> <li>• Might requires tax hikes in bad times.</li> <li>• Can limit revenue mobilization and government saving in good times.</li> <li>• No direct link to debt sustainability.</li> <li>• Can lead to procyclicality.</li> </ul>

Source: IMF 2018.

**Figure 7. Fiscal Rules Adoption**



**21. Fiscal rules also have become common in natural resource-rich countries.** The number of natural resource-rich countries with fiscal rules increased from five in 2000 to 23 by 2021 (Figure 7). The motivation of adopting fiscal rules varies among those countries: to reduce the procyclicality of fiscal policy (e.g., Russia, Chile), limit Dutch disease risk (e.g., Norway), save for future generations (e.g., Norway, Timor-Leste), and to reduce debt levels (e.g., Chile, Peru) (Apeti and others, 2023).

**Lessons Learned**

**22. Cross-country experience offers several principles for the adequate design of fiscal rules:**

- A strong public finance management framework, legislative support, and political buy-in.
- It is important to strike a balance between simplicity, flexibility, and enforceability.
- Covering a broad range of government fiscal activities helps reduce the scope for (i) allocating spending to arrears that are not covered; or (ii) playing accounting tricks.

- It is important to incentivize building fiscal buffers during upturns and allowing for adequate fiscal support during downturns (i.e., ensuring rules are countercyclical).
- Fiscal rule needs to be calibrated in line with sustainability and stabilization objectives, for example, deficits consistent with a stable or falling debt-to-GDP ratio.
- Many countries rely on two or more fiscal rules. Given the trade-offs involved, not all types of fiscal rules are equally apt to support the sustainability, economic stabilization, and possibly the size of government objectives, even when its design features are fine-tuned. Using a combination of fiscal rules can help address the gaps.

### Considerations in Designing a Rule-Based Framework in Resource Rich Countries

**23. The choice of fiscal rules in resource-rich countries like Trinidad and Tobago should consider two important characteristics of the economy.** These characteristics are: (i) the volatility and uncertainty of energy prices which complicates macroeconomic and fiscal planning, and (ii) the exhaustibility of energy resources which raises a complex issue of long-term sustainability and intergenerational resource allocation (Box 1).

#### Other Operational Considerations

**24. The desirable legislative support depends on country-specific circumstances.** The optimal design of the legislation governing fiscal rules varies from one country to another, depending on fiscal policy objectives and institutional capabilities. Fiscal responsibility laws have become popular as permanent institutional arrangements to enhance credibility and transparency of fiscal policy. As of 2021, over 40 percent of fiscal rules were supported by fiscal responsibility or budget framework laws (e.g., specifying the numerical rules and setting out procedural and transparency requirement) (Davoodi and others 2022). However, rules can also be established solely through political commitments which could help speed up the process of adopting and implementing the rules.

**25. A strong institutional framework for fiscal policy is key to successfully implement a rule-based fiscal framework.** Trinidad and Tobago could gain from further deepening reforms underway to strengthen its fiscal framework before considering the adoption of a fiscal rule. Reforms would focus on having its fiscal strategy within a formal medium-term fiscal framework, further improving the budget process and fiscal institutions, enhancing spending execution, and improving transparency and accountability. These reforms, while essential on their own merits, are prerequisites for successful implementation of a fiscal rule (IMF, 2015).

**26. Well-defined escape clauses will support the rule-based framework.** This would allow for a temporary and exceptional suspension of the framework in the event of serious shocks. Escape clauses are common instruments, found in most fiscal rule frameworks across the world (Box 2). Over 30 countries, with a fiscal rule, activated an escape clause following the COVID-19 pandemic (Davoodi and others 2022). This enabled the adoption of large stimulus packages, while preserving the integrity of the fiscal rule frameworks. Moreover, to avoid impeding the credibility of the rule,



escape clauses need to be clearly defined at the time of the adoption of the fiscal rule framework, including the precise definition of the conditions under which the clause can be suspended (e.g. nature and size of shocks), the requirements to return to the targets once the operation of the escape clause is terminated, and institutional responsibilities for the suspension and monitoring of the clause (IMF, 2020).

### Box 1. Fiscal Rules in Natural-Resource Countries

Fiscal rules for natural resource-rich countries can be classified in two categories:

- **Rules to cope with price volatility and achieve macroeconomic stability.**

These rules help reduce the fiscal policy procyclicality by delinking expenditure from volatile revenue. The rules tend to fall in the following categories:

1. *Revenue split rules*: These rules help set aside a certain percentage of revenues using an ad hoc criterion; saving revenues above a certain threshold (e.g., the amount initially budgeted) or require saving a predetermined percentage of commodity revenues.
2. *Price smoothing rules*: These rules also split revenues, but the allocation criterion is more complex and involves the calculation of a reference price. If actual resource revenues exceed resource revenues consistent with the reference price of the commodity, the difference is saved and can be used in periods of shortfall.
3. *Structural balance rules*: They help correct both economic and commodity price cycles.
4. *Expenditure rules*: They aim to limit the government spending growth in nominal or real terms or in percent of non-resource GDP.

- **Rules to ensure fiscal sustainability and an equitable intergenerational allocation of resources.**

While all commodity-exporting countries need to ensure the sustainability of public finances, this issue is particularly relevant in countries with a short commodity reserve horizon. Given the exhaustibility of resources, the aim of these rules is to determine the amount of savings (and sustainable spending) for current and future generations. In this regard, the permanent income hypothesis (PIH) approach is the most commonly used model. Several rules have been discussed in this framework:

1. *The non-resource primary balance (in percent of non-resource GDP) target.*
2. *“Bird-in-hand” policy rule: In this case, resource revenues are saved completely and only the return accruing from accumulated financial assets (interest income) is spent.*

Source: IMF, 2018.

**27. Also, an effective framework should contain formal enforcement and correction mechanisms that guide the return of the fiscal rules after deviations.** Since unexpected macroeconomic shocks could affect the fiscal accounts, there is a period where the fiscal rules might be breached (e.g., if revenue declined significantly after budget approval due to unexpected energy price collapse). In this case, corrections mechanisms are needed to specify actions and path back toward the fiscal rule targets within a defined timeframe.

## D. Conclusion

**28. Trinidad and Tobago would benefit from developing a strong rules-based fiscal framework to guide its fiscal policy.** The increased volatility and uncertainty of energy prices highlights the importance of strengthening fiscal planning to support smooth fiscal operations. The eventual depletion of oil and gas reserves and lower global demand for fossil fuel due to the transition to a low-carbon environment require accumulating adequate savings for future generations. A well-designed fiscal rule can help address these challenges. Moreover, the effectiveness of fiscal rules would hinge on several factors, including strong fiscal institutions, active and sound macroeconomic forecasting, and analysis, and strong and sustained political commitment to a medium-term fiscal goal.

### Box 2. Selected Examples of Escape Clauses

**Colombia:** According to the 2021 Social Investment Law (Ley No. 2155), Article 60, the escape clause will allow for a temporary suspension of the fiscal targets set by the rule (on debt and on the structural primary balance): *"in the event of extraordinary events, or events that compromise the macroeconomic stability of the country"*. The clause can be activated by an internal council on fiscal policy headed by the finance minister, and subject to a non-binding opinion by a new *Autonomous Committee of the Fiscal Rule*. The government shall regulate the operation of the clause, including the maximum duration of the deviation, its magnitude, and the path of return to full compliance with fiscal targets.

**Peru:** The application of fiscal rules (ceiling on real expenditure and 1 percent fiscal deficit ceiling) may be suspended for up to three years when: (a) real GDP is declining, with the ceiling on the deficit being raised up to 2.5 percent of GDP, with a minimum annual reduction of 0.5 percent of GDP until the 1 percent deficit ceiling is reached; and (b) in other emergencies declared by the Congress at the request of the Executive. The Executive must specify in its request the ceilings to be applied during the period of exception for the deficit and expenditure rules, with the minimum annual reduction of 0.5 percent of GDP on the deficit applying also in this case.

**Jamaica:** The debt and fiscal balance rules could be put on hold due to national security, national emergency, or other exceptional events, as the finance minister may specify in an order subject to affirmative resolution. It also has a correction mechanism; whereby annual deviations are stored in a notional account. When this exceeds a threshold, annual adjustment must be implemented to get back to the fiscal rules.

Source: IMF Fiscal Rules dataset (2021).

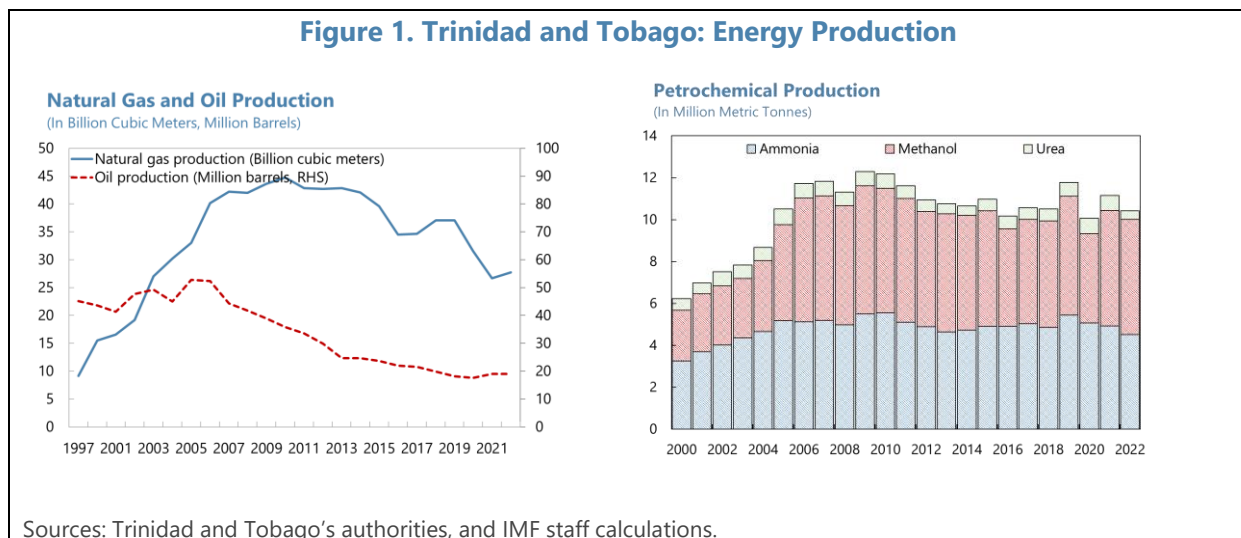
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# ENERGY TRENDS AND THE GREEN ENERGY TRANSITION IN TRINIDAD AND TOBAGO<sup>1</sup>

This Selected Issues Paper takes stock of the supply, transformation, and use of energy in Trinidad and Tobago.<sup>2</sup> This allows a deeper understanding of the macroeconomic benefits, costs, and policy challenges arising from (i) declining oil and gas production due to maturing fields, (ii) the role of new exploration and discoveries of oil and gas, and (iii) the impact from climate change and the global green energy transition.

**1. The energy sector in Trinidad and Tobago is at a crossroads.** Traditionally, the energy sector has been a major source of economic activity, accounting for about 36 percent of the country's nominal GDP in 2022. Also, it has been a major source of external and fiscal revenues, representing 81 percent of total exports and 55 percent of fiscal revenues in 2022. However, oil and gas fields in the country are mature, and production has been on a secular declining trend (Figure 1). This has also led to a reduction in the production of petrochemicals and liquefied natural gas (LNG) for export. The government has been very active in recent years to encourage the development of new fields, but these will take time to boost production. At the same time, climate change and the global green energy transition will inevitably shift the economy away from hydrocarbons and into renewable energy. These developments potentially have deep cyclical and structural implications for the economy and its evolution for decades to come. Therefore, it is critical to take stock of the current energy structure of the economy to understand the potential short and long-term macroeconomic implications of a rapidly transforming energy sector.

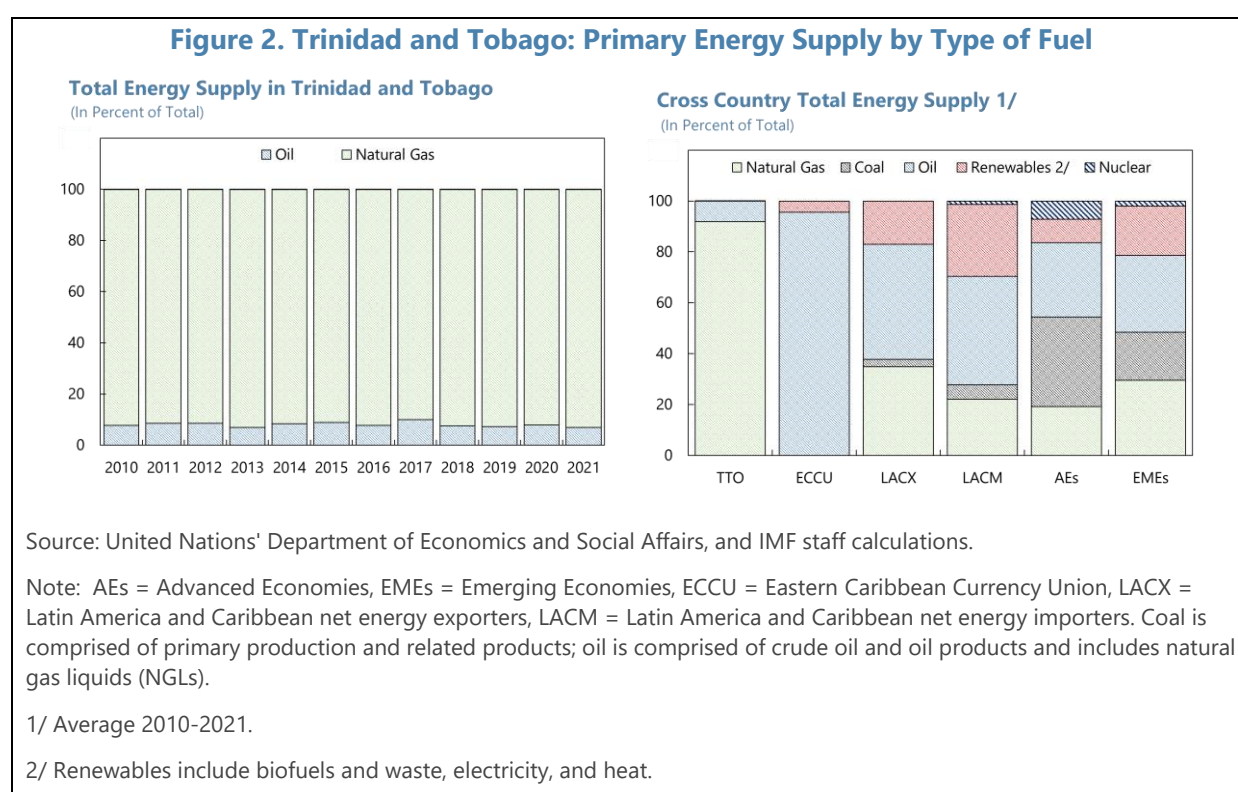


<sup>1</sup> Prepared by Peter Nagle and Diego A. Gutiérrez.

<sup>2</sup> In the analysis, *supply* refers to the production of energy (e.g., natural gas), as well as the import and export of energy. *Use* refers to the domestic use of energy. This includes the use of an energy source in *electricity generation*, direct *end-consumption* across sectors (e.g., industry and households), and *non-energy uses*, primarily the production of petrochemicals from natural gas.

## A. Energy Supply

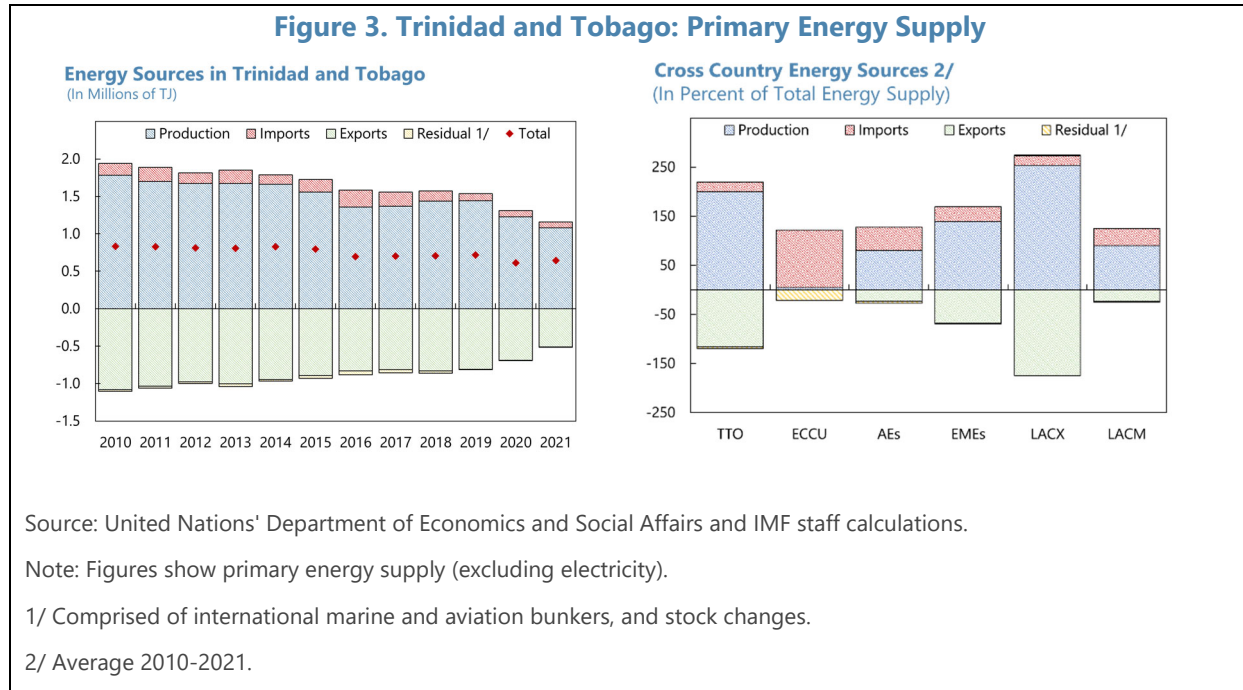
**2. The supply of primary energy in Trinidad and Tobago is dominated by natural gas, with a small share accounted for by crude oil (Figure 2).** In 2021, natural gas accounted for 93 percent of the total energy supply in Trinidad and Tobago (Figure 1). Trinidad and Tobago does not source energy from coal products, nuclear, or hydropower generation to meet its energy needs. This energy profile is in stark contrast with other islands in the Caribbean or emerging market economies, and reflects differences in available energy sources. For instance, the Eastern Caribbean Currency Union (ECCU) countries have minimal domestic energy sources and rely on oil products, such as gasoline and diesel for the majority of their energy. In other emerging markets and advanced economies, the energy supply structure tends to be more diversified.



**3. Trinidad and Tobago produces significantly more energy than it uses, so it is a net exporter of energy (Figure 3).** The main source of energy in Trinidad and Tobago is domestic production of natural gas and crude oil. In 2021, the country produced 923,000 terrajoules (TJ) of natural gas, 130,000 TJ of crude oil, and 27,500 TJ of natural gas liquids (which includes propane, butane, and natural gasoline), and exported 510,000 TJ of energy.<sup>3</sup> However, energy production in Trinidad and Tobago has declined over time. From 2010-19, natural gas production has fallen by 17

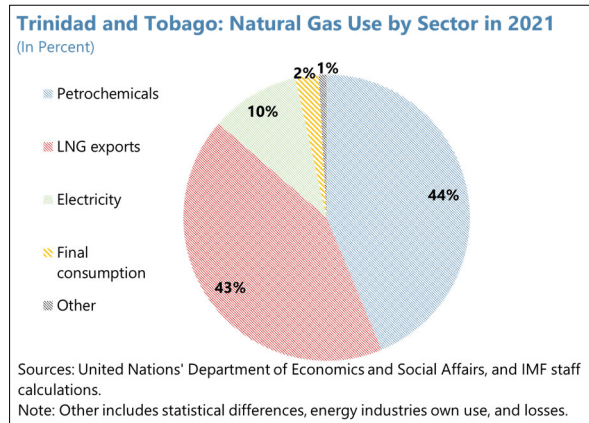
<sup>3</sup> Throughout this annex energy is expressed in terrajoules to allow for equivalent comparison between different fuels. 1TJ is equivalent to 166.8 barrels of crude oil, 0.998 million standard cubic feet of natural gas, and 34.1 tons of coal (see Annex I).

percent and crude oil and condensate production has fallen by 40 percent, and so energy exports have also fallen over this period. In contrast to Trinidad and Tobago, most other Caribbean islands are energy importers. For example, the ECCU countries rely almost entirely on imported oil products for their energy supply.



**4. In 2021, 44 percent of Trinidad and Tobago’s natural gas production was used to produce petrochemicals and 43 percent was exported directly as LNG.**

Trinidad and Tobago was the second largest exporter of ammonia in the world in 2021 and is the second largest producer of LNG in the Western Hemisphere after the United States. The remaining natural gas production is used for electricity generation (10 percent of primary production), and directly by end-users (e.g., industry and households, 3 percent of production). The share of natural gas used for LNG has fallen from 57 percent in 2019, reflecting reduced production of natural gas. In the case of crude oil (including condensates), production is primarily exported.<sup>4</sup> Trinidad and Tobago also produced small amounts of energy from other sources which are used domestically (biofuels and waste, and renewable energy), but these were less than 0.1 percent of energy production.

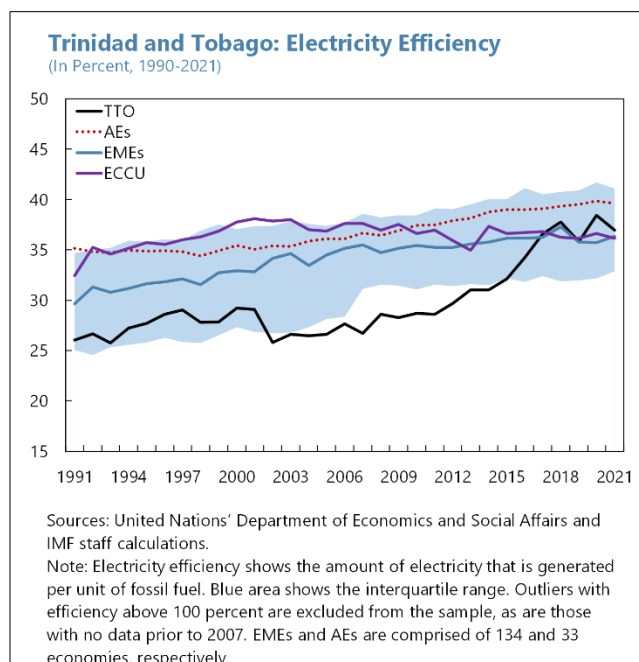


<sup>4</sup> Trinidad and Tobago used to refine some of its crude oil production into oil products until the closure of the Petrotrin refinery in October 2018.

**5. Trinidad and Tobago produces natural gas liquids (NGLs) from its hydrocarbons (e.g., propane), and imports other oil products such as diesel and gasoline.** Trinidad and Tobago produced 27,511 TJ of oil products (mainly NGLs) from hydrocarbons in 2021 and imported an additional 81,561 TJ of oil products. Of the total supply of oil products, the country reexported 56,050 TJ (to meet existing contracts), used 7,482 TJ to refuel international shipping and aviation, while domestic end-use consumption accounted for 38,885 TJ, primarily road transport.

**6. Electricity generation is dominated by natural gas, and the efficiency of generation has increased over time.** Trinidad and Tobago generated 33,332 TJ of electricity in 2021, of which 99 percent was produced via natural gas generators. A very small amount came from the use of oil generators and an even smaller amount from renewables. However, the production of electricity from natural gas results in large energy losses, as energy is wasted during the conversion process. As such, the country used 89,826 TJ of natural gas to produce 33,332 TJ of electricity. Electricity production was therefore 37 percent efficient in 2021.

**7. Nonetheless, Trinidad and Tobago's electricity efficiency is currently comparable to peers in the region and other emerging market economies.** This reflects significant improvements in efficiency over the past decade, reflecting the replacement of some single-cycle turbines with combined-cycle turbines.<sup>5</sup> While traditional single-cycle turbines have an efficiency of 20-35 percent, modern combined cycle turbines can have an efficiency of more than 50 percent. In the absence of this improvement, the country would have needed to use significantly more natural gas to generate the same amount of electricity.



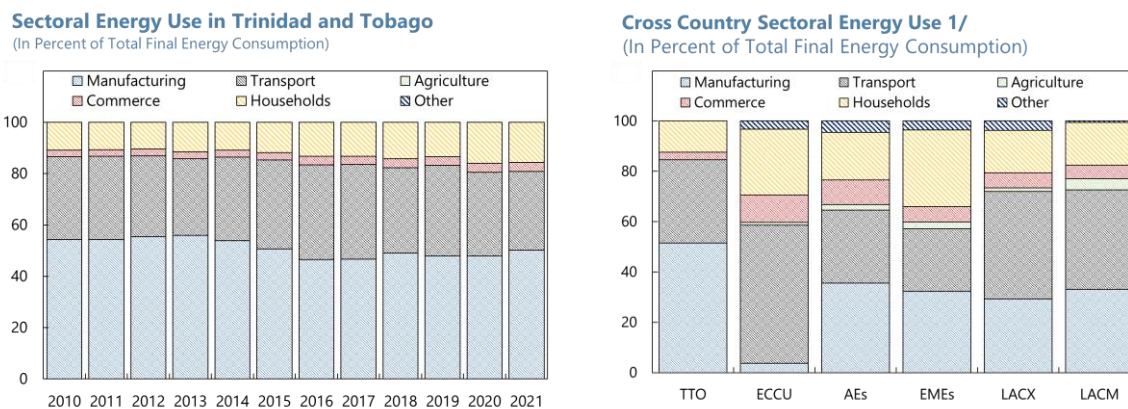
<sup>5</sup> For example, the gas turbines at the Penal power plant were replaced in 2016, which increased power output from the plant by 34MW, improved heat rate and enhanced reliability ([Penal Power Station \(powergen.co.tt\)](https://www.powergen.co.tt))

## B. Energy Use

**8. Considering the final consumption of energy, the industrial sector is the largest consumer, accounting for just under 50 percent of domestic consumption.**<sup>6</sup> Transport accounts for 30 percent, while households, businesses, and agriculture account for 19 percent. These shares have been broadly stable over time (Figure 4). Within industry, metal refining is the largest consumer of energy, while within transport, road transport is the main source of demand.

**9. A greater share of energy use in Trinidad and Tobago is accounted for by industry compared to other Caribbean countries, reflecting differences in their economic structures.** While 51 percent of energy consumption in Trinidad and Tobago is used in manufacturing, in the ECCU it is just 4 percent. Trinidad and Tobago's plentiful supply of energy has allowed it to specialize in energy-intensive industries such as iron and steel, cement, and glass, and export these products. In turn, ECCU countries import almost all of their energy as well as energy-intensive goods such as glass rather than producing them domestically, and instead specialize in less energy-intensive industries such as tourism.

**Figure 4. Trinidad and Tobago: Sectoral Use of Energy Production in Percent of Total Final Energy Consumption (TFEC)**



Source: United Nations' Department of Economics and Social Affairs, and IMF staff calculations.

1/ Average 2010-2021

**10. The relative importance of the fuels used in final energy consumption are different to the types of energy produced by Trinidad and Tobago.** Overall, oil products are the most important source of energy, accounting for 39 percent of final energy consumption. In contrast, natural gas and electricity accounted for 31 and 30 percent, respectively. The types of energy used by individual sectors varies significantly, mostly reflecting differences in the way energy is consumed. For industry, 55 percent of total energy use is from natural gas, and this is primarily used by the iron and steel industry. The rest of the energy used by industry is from electricity and oil

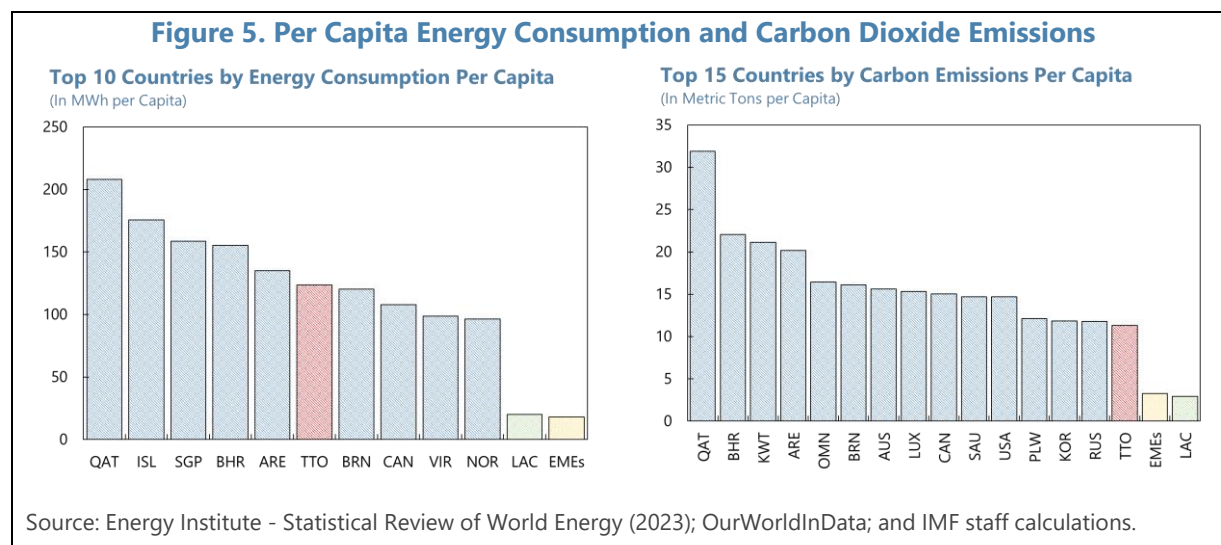
<sup>6</sup> The use of natural gas to produce petrochemicals is not included in final energy consumption by industry.



products which accounted for 37 and 11 percent of energy consumption, respectively. For road and air transport, all energy is provided by oil products, reflecting the reliance on internal combustion engine vehicles and minimal use of electric vehicles. For households and commerce, electricity is the primary source of energy at 62 percent of consumption and is employed for a variety of uses including lighting, heating, and cooling. Natural gas accounts for 17 percent, and oil products 20 percent, with the main uses for heating, cooking, and in generators.

### C. Greenhouse Gas Emissions

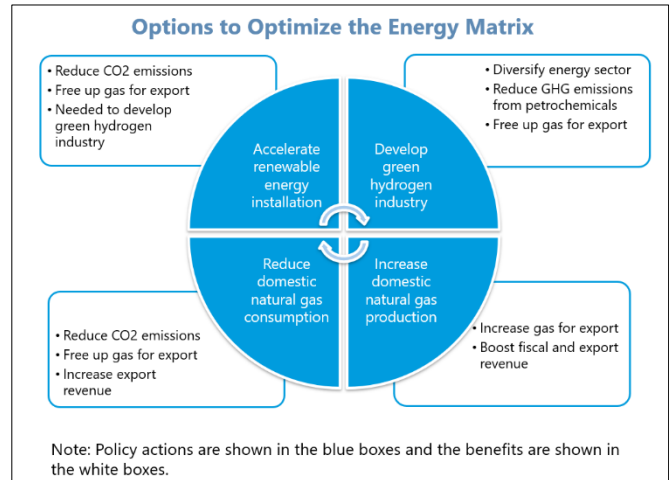
**11. Compared to its peers, Trinidad is particularly energy intensive and has higher carbon emissions.** Energy consumption per capita was 124 megawatt hours (MWh) in Trinidad, the 6<sup>th</sup> highest in the world and higher than the ECCU average of 17 MWh (Figure 5). Similarly, carbon emissions are much higher in Trinidad and Tobago and the country had the 15<sup>th</sup> highest emissions in 2019. However, given the country’s small population, its global share of CO<sub>2</sub> emissions was just 0.075 percent. The higher per capita energy use, particularly relative to the ECCU, are largely explained by the much greater share of manufacturing in Trinidad and Tobago, particularly energy-intensive manufacturing. It is also possible that energy use in Trinidad and Tobago is higher because energy use is less efficient than in other countries because energy is cheaper. This is likely to improve with the partial fuel price liberalization made in April and September 2022 and the adjustment of electricity tariffs (which is expected to be finalized in 2024).<sup>7</sup> The country’s carbon emissions relative to its peers will become increasingly important going forward with the introduction of the EU’s Carbon Border Adjustment Mechanism (see accompanying Selected Issues Paper).



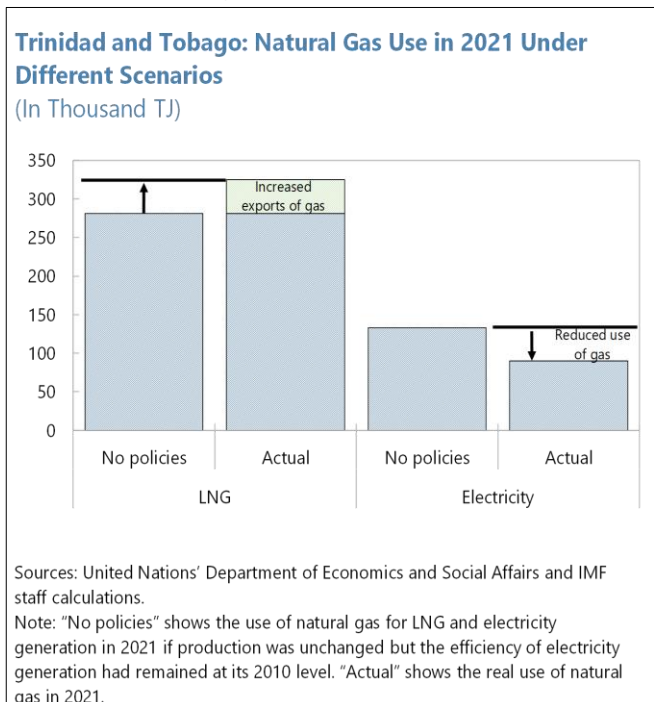
<sup>7</sup> See IMF, 2023, “Annex IV Fuel Subsidies in Trinidad and Tobago”, in “Trinidad and Tobago, 2023 Article IV Staff Report.”

## Rebalancing the Energy Matrix

**12. Trinidad and Tobago has several options to rebalance its energy portfolio to offset declining hydrocarbon production while taking advantage of the green energy transition.** These include reducing domestic consumption of natural gas and oil products, boosting domestic production of natural gas, increasing renewable electricity production, and promoting the development of a green hydrogen sector. Implementing these could lead to an improved balance of payments position and boost fiscal revenues, thereby strengthening the fiscal position and external resilience. They could also help reduce the country’s greenhouse gas emissions.



**13. Optimizing domestic consumption of natural gas could increase the amount available for export as LNG or for the production of petrochemicals.** As a result of the structural decline in natural gas production, Trinidad and Tobago currently has significant excess capacity for producing LNG and petrochemicals. Reducing domestic consumption of natural gas would allow it to be used for either LNG or petrochemicals, boosting exports. This could be achieved by reducing the use of natural gas in electricity production, by either boosting the efficiency of generation or by increasing the installation of renewable energy. Other measures to reduce energy use, such as promoting energy efficiency, would have a similar benefit. The authorities have already made progress in this regard, including through the installation of new gas turbines, the use of fiscal incentives such as the waiving of VAT on new equipment for manufacturing companies utilizing alternate energy technologies or renewable energy options, and the promotion of more efficient LED lighting.



**14. To illustrate the impact of reducing domestic demand, in the absence of the improvement in electricity efficiency over the past decade, more natural gas would have been consumed domestically, with less available for export.** If electricity efficiency had remained at its 2005 level of 26.6 percent, consumption of natural gas to generate the same amount of electricity would have been 35,000 TJ higher in 2021 (Text Figure). Assuming this natural gas was all diverted

from LNG exports, it would have lowered LNG exports in 2021 by 11 percent, and total goods exports by about 2 percent, or \$220 million.

**15. Increasing electricity production from renewable energy sources could free up more natural gas for export use.** Trinidad and Tobago is seeking to accelerate renewable energy installation. A utility-scale solar project, jointly owned by BP and Shell, is intended to generate 1,089 TJ of electricity per year—about 3.3 percent of current electricity production. This would free up about 3,000 TJ of natural gas for export as LNG (or to produce petrochemicals). In turn, that could boost LNG exports by 0.9 percent (compared to 2021 levels), or around \$18 million annually at 2021 prices. If Trinidad and Tobago were to achieve a more ambitious renewable energy target in coming years, for example, achieving the authorities target of 30 percent of electricity generation from renewables by 2030, it could increase natural gas exports by about 8 percent each year (relative to 2021 levels), or just under \$170 million.

**16. Conversely, measures to reduce domestic consumption of oil products can reduce oil imports, which would also improve the balance of payments.** The 2022 liberalization of fuel prices by the authorities will have increased incentives for consumers to use fuel such as diesel and gasoline more efficiently, reducing oil imports, while also providing significant fiscal savings.<sup>8</sup> Increasing fuel efficiency standards for cars can similarly reduce oil imports, while encouraging the use of electric vehicles would reduce oil demand, but the impact on the balance of payments would depend on the source of electricity generation.<sup>9</sup>

**17. Trinidad and Tobago also has significant potential to rebalance its energy matrix and take advantage of growing demand for green hydrogen and derivative products.**<sup>10</sup> In 2022, the authorities unveiled a 35-year roadmap to leverage Trinidad and Tobago's comparative advantages in petrochemicals to produce green hydrogen (GH<sub>2</sub>) and downstream green products such as ammonia and methanol. The country could utilize renewable energy to produce green hydrogen as an alternative to natural gas in the production of petrochemicals. This would both free up additional natural gas for export, as well as reduce the carbon intensity of petrochemicals, making them more competitive in markets with carbon pricing. Green methanol may also be used as a future shipping fuel, which would allow Trinidad and Tobago to refuel ships with domestically produced methanol, rather than with imported oil products.

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<sup>8</sup> See IMF, 2023, Annex IV. Fuel Subsidies in Trinidad and Tobago.

<sup>9</sup> Encouraging the use of electric vehicles would shift energy consumption from imported oil products to domestically generate electricity. If this electricity was produced using natural gas, this could reduce the amount available for export as LNG and petrochemicals. This could offset the reduction in imports from reduced oil demand. If the electricity was instead produced from renewable energy it would reduce oil imports without affecting energy exports.

<sup>10</sup> See IMF, 2023, Annex XIV. *Roadmap to Green Hydrogen Economy in Trinidad and Tobago*; and Inter-American Development Bank (IADB) and National Energy Corporation of Trinidad and Tobago, 2022, *The roadmap for a green hydrogen economy in Trinidad and Tobago*, November.

## D. Policy Implications

**18. Appropriate policy measures will be needed to maximize the opportunities and minimize the potential challenges facing Trinidad and Tobago’s energy sector.** In the near-term, continuing efforts to reduce domestic consumption of natural gas, including through the promotion of energy efficiency and boosting the installation of renewable energy will help maintain supplies for LNG and petrochemicals. Recent initiatives in this regard are encouraging, for example, the planned electricity tariffs adjustment will promote efficient energy usage by consumers and businesses, while also relieving some fiscal pressures. Similarly, the BP-Shell utility-scale solar project represents an important first step in kickstarting the installation of renewable energy and reaching the authorities ambitious target of 30 percent of electricity from renewable sources by 2030.

**19. A sharp and sustained increase in renewable energy will be needed to achieve Trinidad and Tobago’s roadmap for a green hydrogen economy.** This could also help protect against the potential threat posed by the increasing use of border carbon adjustment mechanisms (e.g., EU’s Carbon Border Adjustment Mechanism—see accompanying *Selected Issues Paper*). Boosting investment in renewable energy could be incentivized by the use of policy tools such as subsidies or potentially a carbon price. Ensuring the regulatory framework is adequately in place is equally important, including the establishment of feed-in tariffs to simplify payments for generation.

**20. At the same time, a rapid increase in renewable energy will need to be carefully integrated into the grid, given the challenges posed by intermittency of renewable production.** This could require increasing the mix of renewables (particularly accelerating the installation of wind power, which can operate at different times of the day to solar), as well as incentivizing the use of storage such as batteries.<sup>11</sup> Further, increased demand for electricity, either for the production of green hydrogen or a shift to electric vehicles and broader electrification of energy consumption (such as heat pumps) will likely require an expansion of the electricity grid, which would need substantial investment.

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<sup>11</sup> The potential for harnessing wind power is currently being explored. See [Ministry of Energy and Energy Industries | Wind Resource Assessment Programme \(WRAP\)](#)

## Annex I. Comparison of Data Sources

The data used in this analysis are taken from the United Nations' Department of Economics and Social Affairs. This database contains information on energy production, transformation, and consumption, by fuel, for 215 countries. Table 1 compares these data to the official energy production data from Trinidad and Tobago's Ministry of Energy and Energy Industries (MEEI). The data are broadly consistent. Any differences likely arise from challenges posed by compiling consistent datasets across countries. In particular, differences in the units used to convert the energy content in barrels of oil or standard cubic feet of natural gas to terrajoules can lead to sizeable differences across datasets. For this comparison, the conversion factors were calculated using the implied heat content of individual fuels.

**Table 1. Comparison of Energy Databases in 2021**

Type of Energy	Units	UN Database	MEEI	Energy Conversion Factor (from TJ)
Natural gas	Million standard cubic feet per day	2524	2579	0.998
Crude oil and condensates	Barrels per day	59335	59850	166.778
NGLs	Barrels per day	16602	16747	220.264

Sources: Energy Information Administration; MEEI; United Nations' Department of Economics and Social Affairs and IMF staff calculations.

## CARBON PRICING AT EXPORT MARKETS: TRADE-RELATED IMPLICATIONS<sup>1</sup>

*This Selected Issues Paper explores the potential impact that the adoption of border carbon adjustments at the foreign markets could have on Trinidad and Tobago's exports. It aims to identify sectors and areas where Trinidad and Tobago's private and the public sector could consider taking action to maintain and expand its export markets. While Trinidad and Tobago has a minor contribution to global greenhouse gas emissions, the carbon intensity of its economy is high. This heightens the exposure of the economy to global low-carbon transition risks. Therefore, timely action is critical to maintain the competitiveness of Trinidad and Tobago's exports, boost the country's export diversification, support the stability of the balance of payments, and help finance the country's green transition. The analysis suggests that Trinidad and Tobago could build on current policies to strengthen the integration of transition risks in development strategy and industrial policies, promote the reduction of carbon intensities, accumulate data, and investigate new approaches for emissions reduction, including carbon pricing. More broadly, the authorities are encouraged to continue and step up its efforts in promoting the structural change towards a greener and more resource-efficient economy.*

### A. Background—Carbon Pricing and Border Carbon Adjustments

**1. Trinidad and Tobago's contribution to global greenhouse gas (GHG) emissions is very small—0.075 percent—but the country is substantially exposed to global low-carbon transition risks.** With a population of about 1.5 million and a large and globally competitive gas and petrochemical sector, the country is a large emitter in per capita terms and has a high emission intensity of GDP compared to other petrochemical countries (1.6 kg CO<sub>2</sub>-equivalent per US\$ in 2021).<sup>2</sup> This exposes the country to global low-carbon transitional risks (here after, *transitional risks*), particularly those arising from carbon pricing introduced at the export markets, as they could reduce the demand for hydrocarbons and carbon-intensive products in these markets.

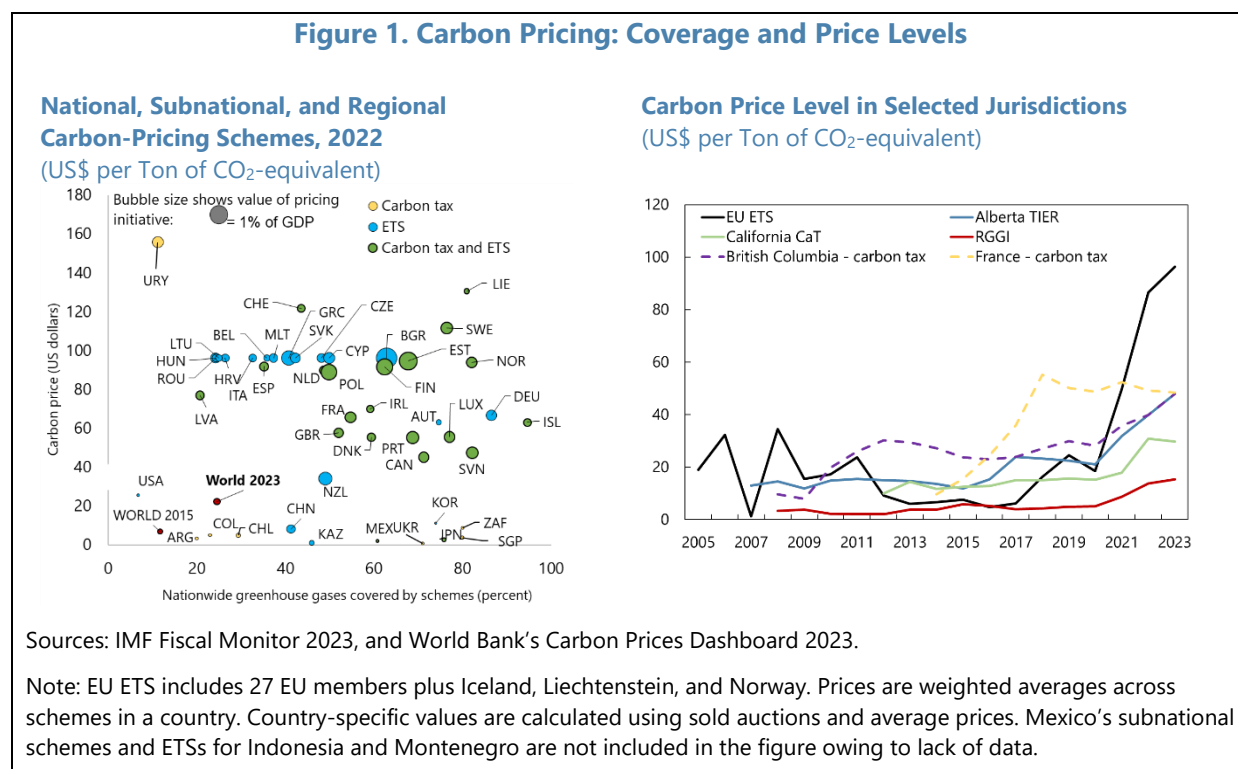
**2. Advanced and emerging market economies are increasingly embracing carbon pricing as an instrument to strengthen the policy response to climate change.** Carbon pricing, in the form of a carbon tax or an emissions trading system (ETS),<sup>3</sup> is one of the main policy tools to achieve

<sup>1</sup> Prepared by Ilya Stepanov and Diego A. Gutiérrez.

<sup>2</sup> IMF Climate Change Indicators Dashboard, IMF staff calculations.

<sup>3</sup> In an ETS, a regulator establishes limit for emissions per period within specific sectors of an economy. Emission allowances are then distributed or sold to entities participating in the ETS. By the end of the specified period, each participating entity is required to surrender allowances equivalent to their emissions during that period. Facilities emitting fewer emissions can sell the surplus of allowances to other participants in the system. Entities with lower abatement costs are motivated to decrease their emissions, whereas those with higher costs can opt to meet compliance by acquiring allowances from the market.

decarbonization targets and support the energy transition.<sup>4</sup> It is considered a cost-efficient instrument for GHG emissions reduction (Parry, Black, and Zhunussova, 2022; Goulder and Parry, 2008). Currently, carbon pricing schemes have been introduced in 49 advanced and emerging market economies, and at least 23 additional countries plan to start pricing emissions soon. In recent years, countries have increased domestic prices for carbon and broadened its use across industries and activities (Figure 1). In some instances, authorities are seeking to link their ETS to create a larger and more liquid market for the trading of emission allowances across jurisdictions—e.g., the Swiss ETS linked with the European Union’s (EU) ETS. Currently, the EU ETS is one the most developed systems. It covers 30 countries and has brought carbon prices up to as high as 100 euro per ton of CO<sub>2</sub>-equivalent.



**3. However, more stringent domestic climate policies and rising carbon prices can adversely affect the international competitiveness of national industries, thus justifying the introduction of trade-related measures to level the playing field.** Indeed, by promoting the shift away from fossil fuels and supporting low-carbon production processes, carbon prices may increase the domestic cost of electricity generation and manufacturing.<sup>5</sup> Divergences in carbon pricing across countries contribute to an uneven playing field for the affected industries (Parry et al., 2021). This

<sup>4</sup> See IMF, 2023, [Fiscal Monitor: Climate Crossroads: Fiscal Policies in a Warming World](#). Washington, DC: IMF, October.

<sup>5</sup> Almost all existing carbon pricing schemes covering the industrial sector are accompanied by measures to alleviate competitiveness impacts (e.g., free allowance allocations, partial exemptions from pricing). But their effectiveness declines with deeper industrial decarbonization and may blunt the domestic demand effects and forgo revenue from carbon pricing.

has increased the interest in *border carbon adjustments* (BCAs)—i.e., charges on embodied carbon in imported products—as they can help safeguard the competitiveness of domestic producers and address carbon leakages.<sup>6</sup> Not surprisingly, BCAs are currently being considered in Canada<sup>7</sup> and the United States.<sup>8</sup> They are already scheduled for the implementation in the United Kingdom,<sup>9</sup> and the European Union (EU) launched the world’s first BCA in October 2023.

**4. The EU’s Carbon Border Adjustment Mechanism (CBAM) has entered a transitional phase which will last until 2025 and become fully operational in 2026.**<sup>10</sup> Under this mechanism, EU’s importers of *iron and steel, aluminum, cement, fertilizers, electricity, and hydrogen* will have to buy CBAM certificates at the price set in the ETS market to cover the carbon footprint of the imported goods. The design allows for the CBAM payments to be reduced if the carbon price is paid in the country of origin for the declared embedded emissions of the product. The CBAM is designed to be compatible with WTO rules: it is aligned with the phase-out of the allocation of free allowances under the EU ETS ensuring the equal carbon price level for importers and domestic producers.<sup>11</sup> After the transitional phase, the scope of products covered by the EU’s CBAM will be reviewed to assess the feasibility of including other goods that are covered by the EU ETS.<sup>12</sup>

**5. The EU’s CBAM will apply to both *direct* and *indirect* emissions of main GHGs except for methane emissions, which in turn will be covered by other measures.** The CBAM will cover CO<sub>2</sub> and where relevant, nitrous oxide and perfluorocarbons. It will apply to *direct* emissions—i.e., generated during the production process—of all the imports subject to the CBAM and as well as to *indirect* emissions—i.e., those arising from the generation of electricity used in the manufacturing process—for *cement* and *fertilizers*. CBAM’s rules determine that special default values will apply to those goods for which emissions levels cannot be appropriately determined through the importers’

<sup>6</sup> Carbon leakage refers to the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints. This could lead to an increase in their total emissions. The risk of carbon leakage may be higher in certain energy-intensive industries. See Böhringer et al. (2022), and Keen, Parry, and Roaf (2021).

<sup>7</sup> See <https://www.canada.ca/en/department-finance/programs/consultations/2021/border-carbon-adjustments.html> Consultation on border carbon adjustments.

<sup>8</sup> See <https://joebiden.com/climate-plan>. Recent legislative proposals for carbon taxes in the United States have also contained BCAs (see [www.carbontax.org/bills](http://www.carbontax.org/bills)).

<sup>9</sup> See [Factsheet: UK Carbon Border Adjustment Mechanism - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/factsheets/factsheet-uk-carbon-border-adjustment-mechanism), UK Government, updated 18 December 2023.

<sup>10</sup> During the transitional phase, the EU importers will have to start reporting emissions embedded in their imports with no payment obligations until 2026. The objective of the transitional period is to serve as a pilot and learning period for all stakeholders (importers, producers, and authorities) and collect useful information on embedded emissions to refine the methodology for the definitive period.

<sup>11</sup> The CBAM certificates surrendered will be adjusted to reflect the extent to which EU allowances are allocated free of charge. The CBAM phase-in plan gradually ceases the free allocation of EU ETS allowances over a nine-year period (from 2026 to 2034) for sectors covered by CBAM.

<sup>12</sup> The EU ETS covers emissions from power and heat generation, a wide range of energy-intensive industry sectors including oil refineries, steel works and production of iron, aluminum, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids, and bulk organic chemicals.



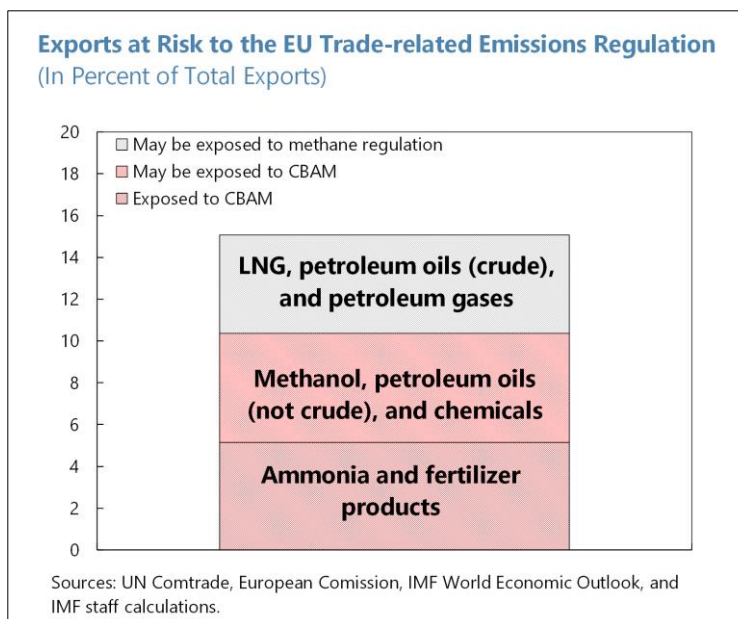
declaration.<sup>13</sup> Methane emissions embodied in imports will be regulated by supplementary mechanisms. In this case, the new EU law will be imposing limits on fossil fuels imports and require companies importing oil and gas to demonstrate that their supply chain has emissions monitoring standards equivalent to those of the EU by 2027, eventually requiring oil and gas suppliers to limit methane emissions to stay below maximum methane intensity values by 2030.<sup>14</sup>

## B. Trinidad and Tobago's Exposure to the EU's CBAM

**6. Currently, about 5.1 percent (US\$ 446 million) of Trinidad and Tobago's total exports of goods are exposed to the EU's CBAM (Text Figure, Table 1).**<sup>15</sup> The

most exposed items are fertilizers, including anhydrous ammonia and mixtures of urea and ammonium nitrate. However, the exports exposed to the EU's CBAM are likely to double, particularly if the CBAM's sectoral coverage is widened to include petroleum products and petrochemicals (including methanol).<sup>16</sup> Moreover, by the early 2030s, up to 15 percent of the Trinidad and Tobago's current total exports of goods could be subject to emissions regulation at the border

(Text Figure). This would materialize once the EU introduces restrictions on the methane intensity embedded in hydrocarbon imports to the EU.



<sup>13</sup> Embedded emissions will be verified based on the EU importers' declarations. Embedded emissions in goods will be calculated pursuant to the methods set out by the European Commission. Where the actual emissions cannot be adequately determined, as well as in the case of indirect emissions, the embedded emissions will be determined by reference to default values determined based on the best available data. See [EUR-Lex - 32023R0956 - EN - EUR-Lex \(europa.eu\)](#)

<sup>14</sup> See [Climate action: Council and Parliament reach deal on new rules to cut methane emissions in the energy sector - Consilium \(europa.eu\)](#), European Council November, 15, 2023; [EU agrees on first ever law to curb methane emissions](#), Politico, November 15, 2023; and [EU executive proposes methane emissions limit on gas imports](#), Reuters October, 25, 2023.

<sup>15</sup> Estimates based on 2018-2022 averages. Sixteen percent of Trinidad and Tobago's total exports of goods are destined to the EU, equivalent to 5.7 percent of GDP or US\$ 1.4 billion.

<sup>16</sup> The expansion of the CBAM coverage is a subject to the tradeoff between enhanced protection against leakage and increased the regulatory complexity and reporting burden of the instrument. Although official decision is yet to be made, at the later stage, the CBAM may also cover coking coal, asphalt bitumen, petroleum products, chemicals, glass and ceramics, Non-ferrous metals. See presentation [Exposure of Developing Countries to EU Carbon Border Adjustment Mechanism \(EU CBAM\)](#) by Maliszewska M., at the Ninth IMF-WB-WTO Trade Conference, October 24-25, 2023.

**Table 1. Trinidad and Tobago: Main Exports of Goods to the EU, Average 2018-22**

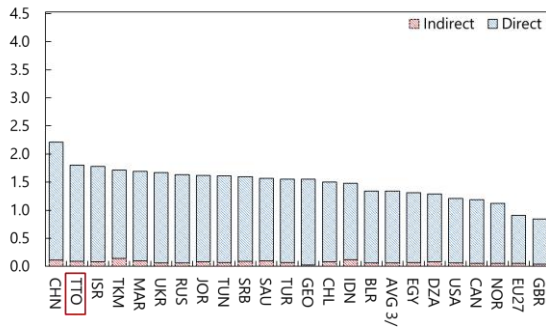
HS Code	Product Name	Total exports to EU (US\$ Mill.)	Percent share of exports to EU	Percent share of total exports	Covered by EU CBAM	May be covered by CBAM at the later stage
290511	Methanol (methyl alcohol)	399.5	29.0	4.6		✓
<b>281410</b>	<b>Anhydrous ammonia</b>	<b>288.9</b>	<b>21.0</b>	<b>3.3</b>	✓	
271111	Liquefied Natural gas	254.5	18.5	2.9		
<b>310280</b>	<b>Mixtures of urea and ammonium nitrate in aqueous or ammoniacal solution</b>	<b>152.5</b>	<b>11.1</b>	<b>1.8</b>	✓	
270900	Petroleum oils and oils obtained from bituminous minerals, crude.	115.5	8.4	1.3		
271019	Other petroleum oils and oils obtained from bituminous minerals, other than crude.	28.1	2.0	0.3		✓
293361	Melamine	21.0	1.5	0.2		✓
271119	Other petroleum gases and other gaseous hydrocarbons in gaseous state	18.1	1.3	0.2		
890110	Cruise ships, excursion boats and similar vessels	16.1	1.2	0.2		
271121	Natural gas in gaseous state	12.2	0.9	0.1		
271113	Butanes	8.3	0.6	0.1		
890190	Other vessels for the transport of goods and other vessels	8.3	0.6	0.1		
271112	Propane	7.3	0.5	0.1		
261790	Other ores and concentrates	4.7	0.3	0.1		
281910	Chromium trioxide	4.7	0.3	0.1		✓
<b>310210</b>	<b>Urea, whether or not in aqueous solution</b>	<b>4.6</b>	<b>0.3</b>	<b>0.1</b>	✓	

Sources: UN Comtrade, European Commission; and IMF staff calculations.

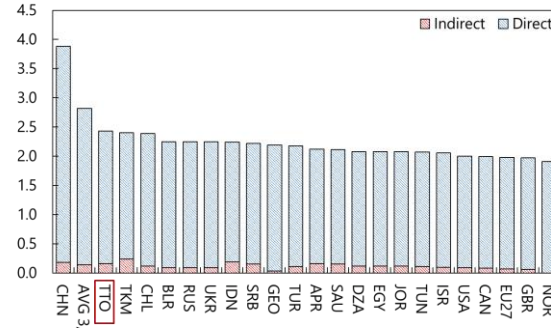
Note: Codes based on the HS 2002 Nomenclature.

**Figure 2. Fertilizer Producers at the EU Market and Emissions Intensity of Selected Products**

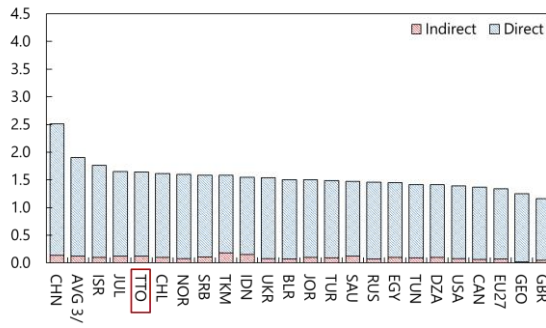
**Emissions Intensity of Mixtures of UAN 1/**  
(In Tons of CO<sub>2</sub>-equivalent Per Ton of Product)



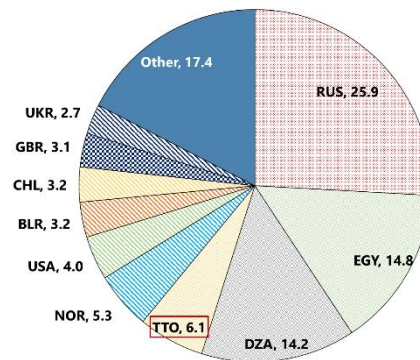
**Emissions Intensity of Anhydrous Ammonia**  
(In Tons of CO<sub>2</sub>-equivalent Per Ton of Product)



**Emissions Intensity of Urea 2/**  
(In Tons of CO<sub>2</sub>-equivalent Per Ton of Product)



**Main Exporters of Fertilizers Covered by CBAM to EU27, 2018-22**  
(In Percent)



Sources: UN Comtrade, EU Joint Research Centre; and IMF staff calculations.

Note: "Direct" refers to direct emissions while "Indirect" refers to indirect emissions. See definitions in text.

1/ Mixtures of Urea and Ammonium Nitrates (UAN) in aqueous or ammoniacal solution.

2/ Whether or not in an aqueous solution.

3/ Weighted average of imports.

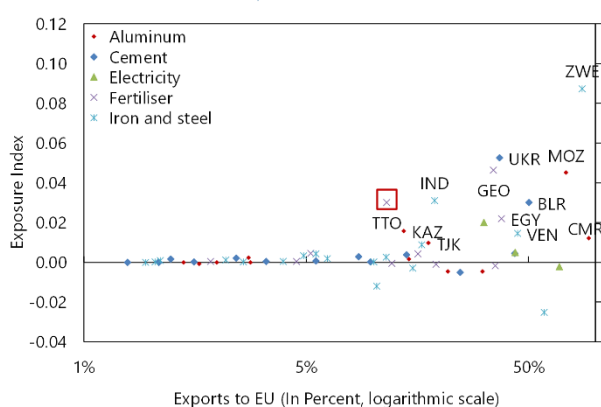
## 7. Trinidad and Tobago's fertilizer industry is particularly exposed to the EU's CBAM.

Figure 2 shows that the carbon intensity of Trinidad and Tobago's production of anhydrous ammonia exceeds the EU's average level.<sup>17</sup> Also, that the carbon intensity of mixtures of urea and ammonium nitrate almost doubles that of the EU's level and one third higher than the weighted average level of carbon intensity of the EU's imports from numerous countries.

## 8. The EU's CBAM could erode Trinidad and Tobago's competitiveness in the EU's market due to the high carbon intensity of its exports.<sup>18</sup>

IMF staff estimates that in a *worst-case scenario* with no global redirection of trade (i.e., *ceteris paribus*) the CBAM-related payments incurred by European importers of Trinidad and Tobago's fertilizers could exceed 40 percent of the total fertilizer annual exports to the EU, or about 0.8 percent of Trinidad and Tobago's GDP. These costs would increase if CBAM's coverage is extended to include other petroleum products and chemicals or methanol. In this scenario, and since the EU fertilizer market is competitive, the country could lose some of the EU's market share (Table 2). These estimates resemble those of the World Bank index, which shows that Trinidad and Tobago fertilizers' producers are substantially exposed to the EU's CBAM (Figure Text).

**Countries' Exports to the EU and CBAM's Relative Exposure**  
(Index, and In Percent of Total Exports)



Sources: World Bank's relative CBAM exposure Index; and IMF staff calculations.

Note: The legend shows each country's most exposed export product group. The index identifies countries with an excess of carbon emissions relative to the EU average. Negative index values indicate that relatively clean exporters may gain competitiveness in the EU market. The index is measured by multiplying the export share by the embodied carbon payment per dollar of export to the EU, and the difference between the exporter's emissions intensity and the EU average emissions intensity for the CBAM product, scaled by the assumed CBAM price (\$100 per ton). The index combines 2019 exports data with emissions intensity dataset from Chepeliev and Corong (2022) and Chepeliev et al. (2022).

**9. However, this extreme scenario is a ceiling as the adverse effect of the EU's CBAM on Trinidad and Tobago's exports is likely to be mitigated in the near-term by the strategic behavior of global petrochemical firms, which could help redirect some of the country's exports to non-EU markets.** Indeed, some studies for other exposed countries suggest that the CBAM-related costs would most likely be partially offset in this manner.<sup>19</sup> Nonetheless, the potential

<sup>17</sup> The cross-country comparison is based on the emissions data from [study by EU Joint Research Centre](#). These values are used to establish the default values for the transitional CBAM period.

<sup>18</sup> A comprehensive assessment of the CBAM impacts on the Trinidad and Tobago economy requires a more granular analysis with application of a global general equilibrium modelling framework. This would allow to analyze the trade implications of climate policies on global trade patterns of trade.

<sup>19</sup> As an illustration, a joint [World Bank–HSE university study](#), done prior to the war in Ukraine, indicates that the EU's CBAM will lead to decreased exports from Russia to the EU by about US\$19 billion by 2035 relative to business-as-usual, while a part of this decrease will be compensated by the increased exports from Russia to the rest of the world by about US\$11 billion. Furthermore, as the EU's CBAM targets carbon-intensive goods not covering crude oil, natural gas, and coal, CBAM may result in the EU importing more primary fossil fuels to use in the production of commodities covered under the CBAM, unless these are covered by supplementary mechanisms.

for redirecting Trinidad and Tobago's exports will differ across products. This is more likely for commodities where the EU has a smaller share in global imports—e.g., urea and ammonia—and limited for products in which the EU holds a significant share of global consumption—e.g., mixtures of urea and ammonium nitrate (Table 2).

**Table 2. Trinidad and Tobago's CBAM-Exposed Exports at the EU Market, 2018-22**  
(In Percent)

HS Code	Product Name	Share of imports from TTO in total EU imports	Share of EU in global imports
290511	Methanol (methyl alcohol)	12.9	25.4
281410	Anhydrous ammonia	14.2	23.0
310280	Mixtures of urea and ammonium nitrate in aqueous or ammoniacal solution	14.0	48.3
271019	Other petroleum oils and oils obtained from bituminous minerals, other than crude.	0.0	33.1
293361	Melamine	3.5	45.6
281910	Chromium trioxide	5.8	36.8
310210	Urea, whether or not in aqueous solution	0.1	19.3

Sources: UN Comtrade, European Commission; and IMF staff calculations.

Note: Codes based on the HS 2002 Nomenclature.

**10. To mitigate the EU's CBAM impact, Trinidad and Tobago's could reduce the carbon intensity of its exported goods.** While redirecting trade could help the country maintain its export levels in the short run, deeper reductions in emissions intensity would go further and help establish a permanent competitive advantage over other global suppliers in the EU market. However, in addressing the carbon intensity of Trinidad and Tobago's exports, it is important to consider that most emissions are *direct* (i.e., arising during manufacturing processes), while *indirect* emissions (i.e., originating from electricity generation used in manufacturing) only have a marginal share (Figure 2).

### C. Policy Implications of BCAs and Global Decarbonization Action

**11. While most trade partners of Trinidad and Tobago have not yet implemented BCAs, they emerge as a plausible component of the future economic global landscape, exerting pressure on carbon-intensive industries.** This becomes more likely with an increasing number of countries declaring goals for carbon neutrality and adopting stringent domestic climate policies. These trends make carbon intensity of production a critical factor affecting the global competitiveness of industries.

**12. Trinidad and Tobago's authorities have already started to act, addressing climate change and transitional risks.** The country submitted its Nationally Determined Contribution (NDC) to the *United Nations Framework Convention on Climate Change* (UNFCCC) in 2018 committing to reduce emissions in industry power generation and transport sectors.<sup>20</sup> The

<sup>20</sup> The submission included two targets: (i) an overall reduction of emissions from the industrial, power generation and transport sectors by 15 percent of cumulative emissions by 2030 relative to a BAU baseline, equivalent to 103 million tons of CO<sub>2</sub> equivalent (MtCO<sub>2</sub>eq), conditional on external financial support; and (ii) an unconditional 30 percent reduction of cumulative emissions from the public transportation sector or 1.7 MtCO<sub>2</sub>eq compared to 2013 levels by 2030.

authorities progressed in developing the vision for green energy transition issuing a number of forward-looking strategic documents, including the *Roadmap for a Green Hydrogen Economy*.<sup>21</sup> Also, renewable policy developments are taking place in two main fronts: (i) increasing the generation capacity with a project under construction to install a 92 MW solar power plant.; and (ii) developing a feed-in tariff policy to allow small scale residential and commercial customers co-generate electricity and sell it to the grid. Furthermore, the country has joined the *Global Methane Pledge* aiming to reduce anthropogenic methane emissions, representing 21 percent of the country's total emissions.<sup>22</sup>

**13. However, to address the exposure to the EU's CBAM, the authorities are encouraged to further integrate transition risks into energy and industrial policies.** Based on the progress so far,<sup>23</sup> continued support and incentives to upgrade and increase the efficiency of its world class petrochemical infrastructure are important to mitigate transitional risks. To maintain access and competitiveness in the EU market, Trinidad and Tobago could further reduce the carbon intensity of its most exposed industries, particularly the fertilizer industry. The transitioning to renewable energy electricity will help reduce indirect emissions. But since *these* are low in the fertilizer industry, it will only help in the margin. Therefore, efforts should continue to focus on reducing and managing *direct* emissions. This will require to continue embracing greener and more efficient manufacturing technologies, developing Carbon Capture, Utilization, and Storage (CCUS) technology and advancing the respective legislation framework for its development.<sup>24</sup> Finally, the authorities are encouraged to assess and manage the transitional risks to the iron and steel industry given its importance to overall exports—it accounts for 9 percent of overall exports—and its important role for the economy's diversification towards non-energy.

**14. Stepping up the measurement and collection of emissions data would also help prepare better for the introduction of the EU trade-related carbon regulations and support national exports.** Emissions data transparency and business accountability is critical for mitigating transitional risks and for providing well-grounded support to the country's manufactured goods. They will also be critical in dealing with the EU's new requirements on imports' carbon footprint, which will rely on its own methods and approaches for emissions accounting in the absence of adequate data. In this respect, Trinidad and Tobago's authorities are encouraged to continue scaling up its efforts on gathering data on GHG emissions and emissions intensities of production

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<sup>21</sup> See Trinidad and Tobago, 2023 Article IV Consultation, IMF Country Report No. 23/147; [The Roadmap for a Green Hydrogen Economy in Trinidad and Tobago](#), 2022 and [Setting the path for Wind Energy Generation in Trinidad and Tobago](#), 2023.

<sup>22</sup> Trinidad and Tobago along with 120 countries joining the Pledge agreed to take voluntary actions to collectively reduce global methane emissions at least 30 percent from 2020 levels by 2030. See <https://www.globalmethanepledge.org/>.

<sup>23</sup> Ongoing efforts to reduce GHG emissions also include efficiency programs (e.g., the Green Manufacturing Initiative), and exploring solutions for decarbonization of transport (e.g., solar PV carport at Grand Stand of Queens Park Savannah).

<sup>24</sup> The authorities with the private sector are considering launching a pilot project in carbon capture utilization and storage coordinated by newly established Carbon Capture and CO<sub>2</sub> EOR Steering Committee.

processes, including through its *National Climate Mitigation Monitoring, Reporting, and Verification* (MRV) system set in 2021.<sup>25</sup>

**15. Securing stable and ample supply of natural gas to existing petrochemical facilities should also increase the efficiency of production and help stimulate investment in low-carbon technology.** Recent challenges in gas supply have led to certain petrochemical facilities operating near their minimum capacity, compromising the efficiency of production processes.<sup>26</sup> To reduce carbon intensity scores and encourage future investments in energy efficiency and emissions reduction, Trinidad and Tobago's energy sector needs to explore strategies to ensure the longevity and predictability of natural gas supply. In this respect, recent developments in terms of securing the supply of gas from bordering projects with Venezuela along with other deep water gas projects that will materialize in the medium term should contribute to secure the necessary investment to increase the efficiency of petrochemical plants and reduce the carbon footprint (see accompanying Selected Issues Paper). More broadly, stable revenues coming from the energy sector will remain a key prerequisite for successful energy transition, including financing renewable energy development.

**16. To support the decarbonization agenda, the authorities may consider re-evaluating the emissions reduction pathway.** Over the past decade, Trinidad and Tobago has experienced a decline in GHG emissions (Figure 3). The peak in emissions occurred in 2010, coinciding with record-high production rates of natural gas, liquefied natural gas (LNG), and petrochemicals. Subsequently, emissions have steadily decreased, reaching a level one third lower than the 2010 peak in 2021. However, transition risks arising from the climate actions taken by advanced and emerging economies justifies considering a more ambitious emissions reduction pathway, formalized in a revised NDC submission to the UNFCCC.<sup>27</sup>

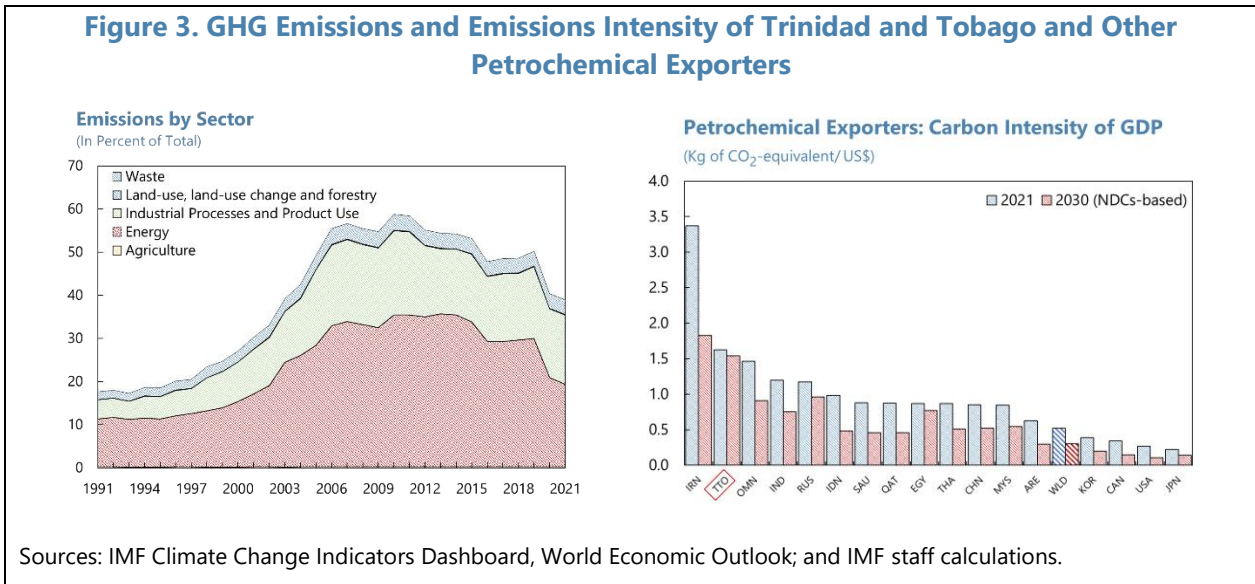
**17. Trinidad and Tobago could also consider introducing a carbon pricing mechanism to stimulate economic diversification and help reduce the exposure to the EU's CBAM.** ETS or carbon taxes have gained popularity as energy and climate policy tools used by many petrochemical producers (Box 1). Carbon pricing could help consolidate and elevate the progress on the government and other's green initiatives. For example, by boosting the investment in renewable energy generation, accelerating the implementation of the roadmap for a green hydrogen economy, setting the economic incentives to increase the efficiency of the energy sector, and scaling up the use of the CCUS and other low-carbon technologies. A carbon price can help reduce exposure to the EU's CBAM, although its coverage may have to extend beyond EU-oriented exports to be compliant

<sup>25</sup> See <https://www.planning.gov.tt/content/tt%E2%80%99s-carbon-emissions-tracker-takes>.

<sup>26</sup> Evidence from the corporate sector suggests that for certain petrochemical products, the reduction from full capacity to a minimum operational threshold can lead to an increase of more than 10 percent in emissions per unit of product.

<sup>27</sup> NDCs are submitted every five years to the UNFCCC secretariat. To enhance the ambition over time, the Paris Agreement provide that successive NDCs will represent a progression compared to the previous NDC and reflect its highest possible ambition. Parties of the UNFCCC are requested to submit the next round of NDCs (new NDCs or updated NDCs) by 2020 and every five years thereafter (e.g., by 2020, 2025, 2030), regardless of their respective implementation time frames. See [Nationally Determined Contributions \(NDCs\) | UNFCCC](#).

with the WTO rules.<sup>28</sup> The design of a carbon price mechanism needs to carefully account for possible adverse domestic macroeconomic effects, including potential negative impacts on the global competitiveness of carbon intensive industries. A well-designed carbon price introduced in a timely manner and complemented by other policies to offset possible side-effects can help increase the economic resilience and sustainability of Trinidad and Tobago’s economy and help develop new comparative advantages to successfully compete in a new greener global economy (Box 1).



<sup>28</sup> With the CBAM the EU will impose taxes on emissions generated in Trinidad and Tobago, unless these emissions are already subject to domestic carbon pricing. Trinidad and Tobago could consider implementing a domestic carbon tax to capture a portion of these revenues. However, for compliance with WTO rules, such a tax would need to be applied universally to all exports (as well as domestic consumption) of CBAM-covered products having wider macroeconomic, fiscal and trade implications.

### Box 1. Considerations in Designing a Carbon Pricing Mechanism

**Most petrochemical exporting countries usually support their emission targets with carbon pricing mechanisms (see text table).** Carbon taxes and ETSs contribute effectively to the emissions reduction and incentivize the use of low-carbon technologies. At the same time, pricing carbon can have negative impacts on growth, industrial competitiveness, and household consumption (Grainger and Kolstad, 2010; Arlinghaus, 2015; Grigoriev et al., 2020). Therefore, design of a carbon pricing mechanism varies from one country to another accounting for differences in climate ambition, national peculiarities, being aligned with the development agenda (World Bank, 2023).

**For instance, the potential adverse effects of carbon pricing on industries and households can be offset by effective revenue recycling or simultaneous reduction in existing taxes.** The revenue-neutral carbon tax implemented in the Canadian province of British Columbia in 2008 was paired with concurrent reductions in both corporate and personal income taxes. To alleviate the impact on the economy's growth, a cap on emissions at the Chinese national ETS launched in 2021 is intensity-based; it adjusts depending on the actual output level.

Country (Share of global petrochemical market 1/)	2030 emissions reduction target (relative to 2021) 2/	Status of implementation	Emissions coverage	Level of carbon price, USD per tCO <sub>2e</sub> .
United States (11.6)	-41%	5 Subnational ETSs implemented, 2 ETSs and 1 CT under consideration. 3/	74.0	11.2
South Korea (8.75)	-36%	National ETS implemented (2015).	...	...
Saudi Arabia (8.16)	-20%	...	...	...
Netherlands (5.67)	-46%	EU ETS (2005), and CT implemented (2021).	48.8	89.8
Germany (5.31)	-38%	EU ETS (2005) and National ETS (2021).	86.6	66.9
China (4.75)	-11%	National ETS implemented (2015) and 8 subnational ETSs implemented. 4/	41.3	8.2
Singapore (4.41)	-20%	CT implemented (2019)	80.0	3.8
Belgium (3.58)	-44%	EU ETS implemented (2005).	35.8	96.3
Japan (3.32)	-31%	National ETS under consideration, and CT (Tokyo) implemented (2021).	75.8	2.7
Canada (2.91)	-38%	National ETS, and 8 subnational ETSs implemented; National and 5 subnational CT implemented; 1 ETS and 1 CT under consideration. 5/	71.2	45.3
Iran (2.81)	-15% / -7%	...	...	...
Thailand (2.64)	-24% / -11%	1 ETS under consideration.	...	...
Russia (2.60)	-15%	...	...	...
France (2.54)	-34%	EU ETS implemented (2005), and CT implemented (2014).	54.8	65.8
Malaysia (2.29)	18%	ETS under consideration.	...	...
Qatar (2.19)	-8% / 23%	...	...	...
India (2.17)	42%	...	...	...
Spain (1.76)	-17%	EU ETS implemented (2005), and CT implemented (2014).	35.2	92.0
United Arab Emirates (1.58)	-20%	...	...	...
Italy (1.45)	-23%	EU ETS implemented (2005).	32.6	96.3
Trinidad and Tobago (1.34)	31% / 54%	...	...	...
Egypt (1.05)	35%	...	...	...
United Kingdom (1.04)	-38%	National ETS (2021).	52.0	57.7
Indonesia (1.03)	-9% / 10%	National ETS implemented (2023), and national CT under consideration.	26.0	...
Oman (1.01)	-10% / -7%	...	...	...

Sources: UN Comtrade, World Bank's Carbon Pricing Dashboard, IMF Climate Change Indicators Dashboard, World Economic Outlook, and IMF Staff Calculations.

1/ Refers to average in the period 2018-2022.

2/ Refers to both conditional and unconditional NDCs when applicable, excluding land-use, land-use change, and forestry (LULUCF).

3/ Implemented: RGGI (2009), California (2012), Massachusetts (2018), Oregon (2021), and Washington (2023). Pennsylvania and New York ETS, and Hawaii CT under consideration.

4/ Beijing pilot (2013), Tianjin pilot (2013), Shanghai pilot (2013), Guangdong pilot (2013), Shenzhen pilot (2013), Chongqing pilot (2014), Hubei pilot (2014), and Fujian pilot (2016).

5/ ETS National level: Federal OBPS (2019). ETS Subnational level: Alberta (2007), Quebec (2013), GGIRCA (2016), Newfoundland and Labrador (2019), Nova Scotia (2019), Saskatchewan (2019), New Brunswick (2021), Ontario (2022). CT National level: Canada federal fuel charge (2019). CT subnational level: British Columbia (2008), Northwest territories (2019), Newfoundland and Labrador (2019), Prince Edward (2019), and New Brunswick (2020). Manitoba ETS and CT under consideration.

**Given its heavy dependence on the energy sector, Trinidad and Tobago requires a thorough examination of the potential for implementing a carbon pricing mechanism, along with an exploration of potential design options.** A number of studies indicate that putting a price on carbon requires special attention to the regulatory design (level and the rate of price increase, emissions coverage, revenue recycling, point of regulation – upstream vs. midstream/downstream, use of offsets, etc.) to smooth out possible adverse macroeconomic effects (Parry, 2012; Stepanov and Makarov, 2021). In Trinidad and Tobago, the authorities could consider exploring a fiscally neutral carbon tax accompanied by a partial reduction in existing taxes (for e.g., royalty or other production-based taxes like Green Fund Levy), but this and other possible options should be investigated further.



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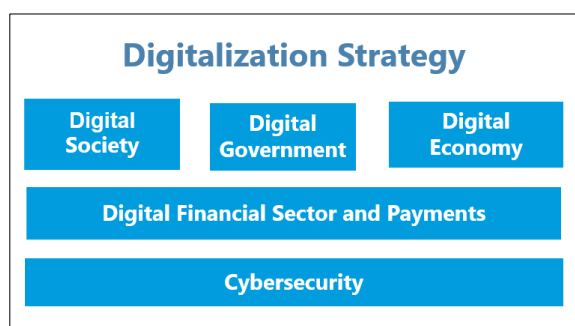
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# DIGITALIZATION IN TRINIDAD AND TOBAGO<sup>1</sup>

Trinidad and Tobago has embraced digitalization to diversify its economy, modernize payments, deliver efficient and inclusive services, and enhance the business climate. The authorities are proactively promoting the digitalization of the society, economy, and government, while carefully embracing Fintech, modernizing the payments system, and enhancing the cybersecurity frameworks. This paper overviews recent trends in these areas as well as the authorities' strategy and actions to advance the digital agenda safely and inclusively. It also discusses some policy recommendations.

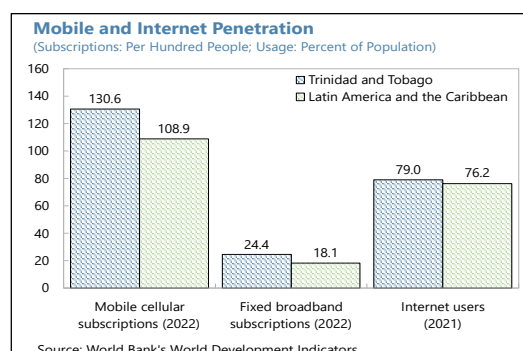
## A. Digitalization Strategy

**1. Digitalization is a priority in the country's development agenda, which was accelerated by the COVID-19 pandemic.** In 2021, the Government of the Republic of Trinidad and Tobago (GoRTT) established the *Ministry of Digital Transformation* (MDT) and appointed a cabinet-level advocate for the digital economy. Currently, the MDT is developing a *National Digital Transformation Plan for 2024-27*, which is centered around three pillars. First, it envisions a **digital knowledge-based society** with digital access and literacy for all citizens. Second, it creates a cloud-based interoperable and cyber-secure **digital government** infrastructure accessible with electronic identification (e-ID) to enable online public services and payments between government and individuals. Third, it aims to double the size of the **digital economy**, focusing on software development and e-commerce. These three pillars complement efforts to foster the digitalization of the **financial sector**, which is being driven by the safe and cautious adoption of innovative *financial technologies* (*Fintech*) and the modernization of the payment system. Finally, all digitalization efforts rely on having a solid foundation shaped by an adequate **cybersecurity framework** across all sectors.



## B. Boosting Digital Access and Development

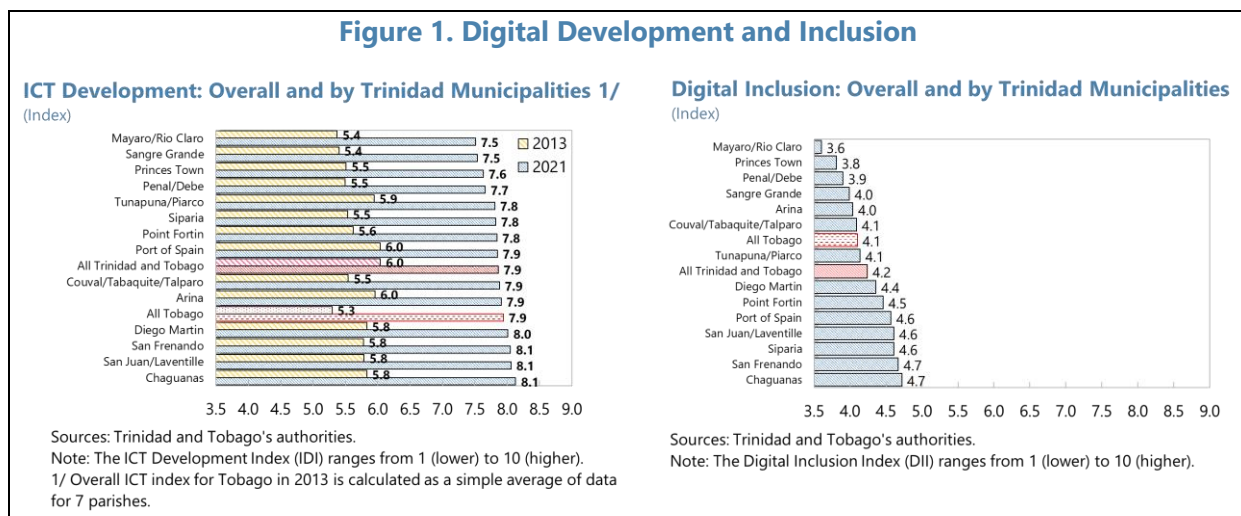
**2. On average, Trinidad and Tobago's digital penetration is higher than in Latin America and the Caribbean (LAC) but some disparities remain within the country.** The country has a high penetration of mobile phones (mostly 3G/4G) and fixed broadband subscriptions, and a significant share of the population with internet connections, all exceeding the LAC averages (see chart). However, providing internet and



<sup>1</sup> Prepared by Olga Bespalova.

mobile connections for vulnerable and underserved populations (i.e., rural, physically challenged, youth, and elderly) remains difficult.

**3. The National Digital Inclusion Survey-2021 by the Telecommunications Authority of Trinidad and Tobago (TATT) confirms the variation in digital development and inclusion across geographic areas (Figure 1) and demographic groups.** According to it, there has been a sizable country-wide improvement in the domestic information and communications technology (ICT) *Development Index* (IDI)<sup>2</sup> across all municipalities (from 6.04 in 2013 to 7.9 in 2021, on average). This improvement reflects a substantial upgrade in citizens’ ICT skills and, to a lesser extent, an increase in usage and access of digital services. The survey has begun measuring the *Digital Inclusion Index* (DII) in 2021.<sup>3</sup> The DII puts equal weights on the ICT access, participation in online activities, trust and confidence to obtaining information and services online, and digital readiness to receive online services. Unlike the IDI, the DII captures the still emerging cultural perceptions about participation and trust in online activities, and low readiness of citizens to actively involve in digital economy (TAAT 2013, 2021). Despite these differences, the DII also confirms disparity across municipalities.



**4. Addressing the digital divide is a key priority for the country.**<sup>4</sup> To achieve this goal, the authorities are creating a robust, reliable, and accessible ICT infrastructure and enhancing digital literacy. Specifically:

- To enhance **digital access**, they are deploying the TTWiFi (a public broadband wireless network) establishing Wi-Fi spots in transportation hubs, hospitals, libraries, and schools (with 24 sites

<sup>2</sup> IDI=0.4\*ICT access+0.4\*ICT use+0.2\*educational attainment. See TATT (2021), p.29.

<sup>3</sup> DII=0.25\*ICT access+0.25\*online participation+0.25\*trust and confidence +0.25\* readiness and digital literacy. See TAAT (2021), p.36.

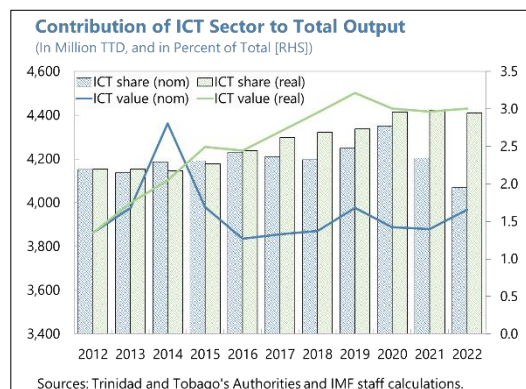
<sup>4</sup> The digital divide refers to “the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access ICTs and to their use of the Internet for a wide variety of activities.” See [OECD \(2021\)](#).

already in place). To connect the underserved populations, they are also leveraging innovative technologies (TV White Spaces), attracting satellite service providers,<sup>5</sup> and creating public ICT access centers equipped with broadband-connected computers, printing, and scanning services.

- To strengthen the **digital literacy of its citizens**, the government is implementing the *Digital Skills Development Programme WeLearnTT*,<sup>6</sup> cooperating with the *Youth Training and Employment Partnership Programme (YTEPP)*, acquiring learning licenses for several online learning platforms from *Linux* and *Cisco*, and organizing coding camps. Also, the [FY2024 Budget](#) is allocating resources to train 10,000 individuals and distribute 2,400 laptops to students and staff across 94 secondary schools.

### 5. High digitalization allows the country to leverage the digital economy as an enabling sector.

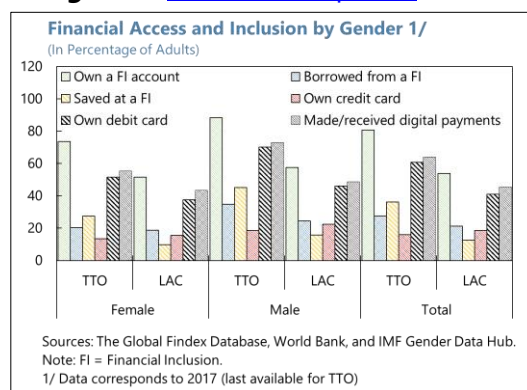
In 2022, the ICT services contributed 2.9 percent to the country’s real gross domestic product (GDP). The authorities’ aim is to capitalize on new technologies (e.g., internet, cloud computing, big data, and 5G) to boost the e-commerce sector, grow the local software industry, and promote Fintech as new engines of non-energy growth. To this end, they have (i) established in mid-2023 the *Government Campus Plaza Developer’s Hub (D’Hub)*—a virtual collaborative space to create open-source mobile and web applications; (ii) are developing the *National E-Commerce Strategy 2024-29* to help local businesses access domestic and foreign markets, and (iii) are assisting local technology entrepreneurs with getting international accreditation and information technology.



## C. Improving Financial Access, Inclusion, and Literacy

### 6. Financial access in the country exceeds the LAC average. The [World Development](#)

[Indicators](#) show that in 2017, 80.8 percent of domestic residents had accounts in financial institutions (FIs), compared to 53.9 percent in the LAC region. Also, they had greater access to debit and credit cards, savings and loan accounts, and made greater use of digital payments. Despite the existence of a domestic financial access gender gap, females in Trinidad and Tobago tend to enjoy greater financial access than the average LAC male.<sup>7</sup> The depth of financial access in the country



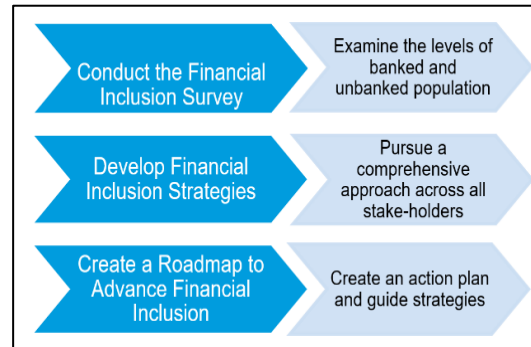
<sup>5</sup> [Starlink Internet Services](#) and [Neptune Communications](#) entered Trinidad and Tobago in 2023.

<sup>6</sup> Depending on the initial knowledge, the citizens can gain (i) basic digital skills; (ii) digital technical expertise for the local labor market; or (iii) ICT developers’ skills to service the export market.

<sup>7</sup> For example, 73.6 percent of females owned an account in FIs, and 51.7 percent had a debit card, compared to 57.6 and 46.0 percent for an average LAC male.

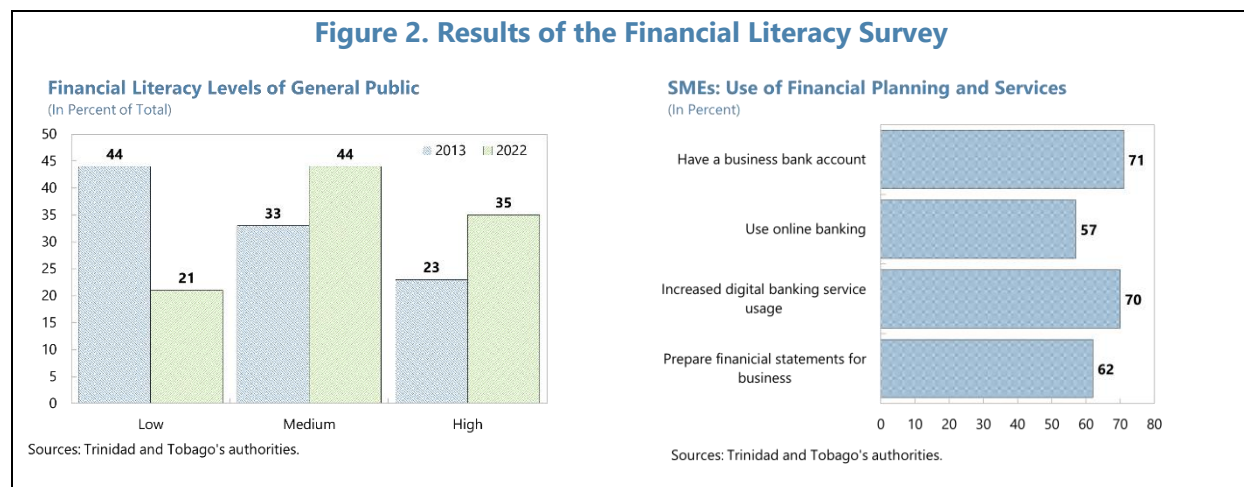
reflects a developed domestic financial system, with assets standing at 179.1 percent of GDP as of 2022.

**7. The COVID-19 pandemic has tightened financial access, particularly among vulnerable groups.** According to the *2023 Financial Inclusion Survey* by the *TT International Finance Center (TTIFC)*, the share of households with a formal financial account (e.g., with a bank, credit union, microfinance lender, or a mobile money service provider) has declined in recent years to 76 percent. This reflects the impact of the COVID-19 pandemic on vulnerable population, fees associated with bank accounts and *points of sale (POS)*, and source of funds requirements.



Nonetheless, the authorities' medium-term goal is to achieve the share of banked population over 90 percent (Imbert, 2023a). Based on the gaps and barriers identified in the Financial Inclusion Survey, the TTIFC is developing the related strategies and roadmaps to guide the sequence, timeline, and processes for their implementation by stakeholders at the national or subnational levels.

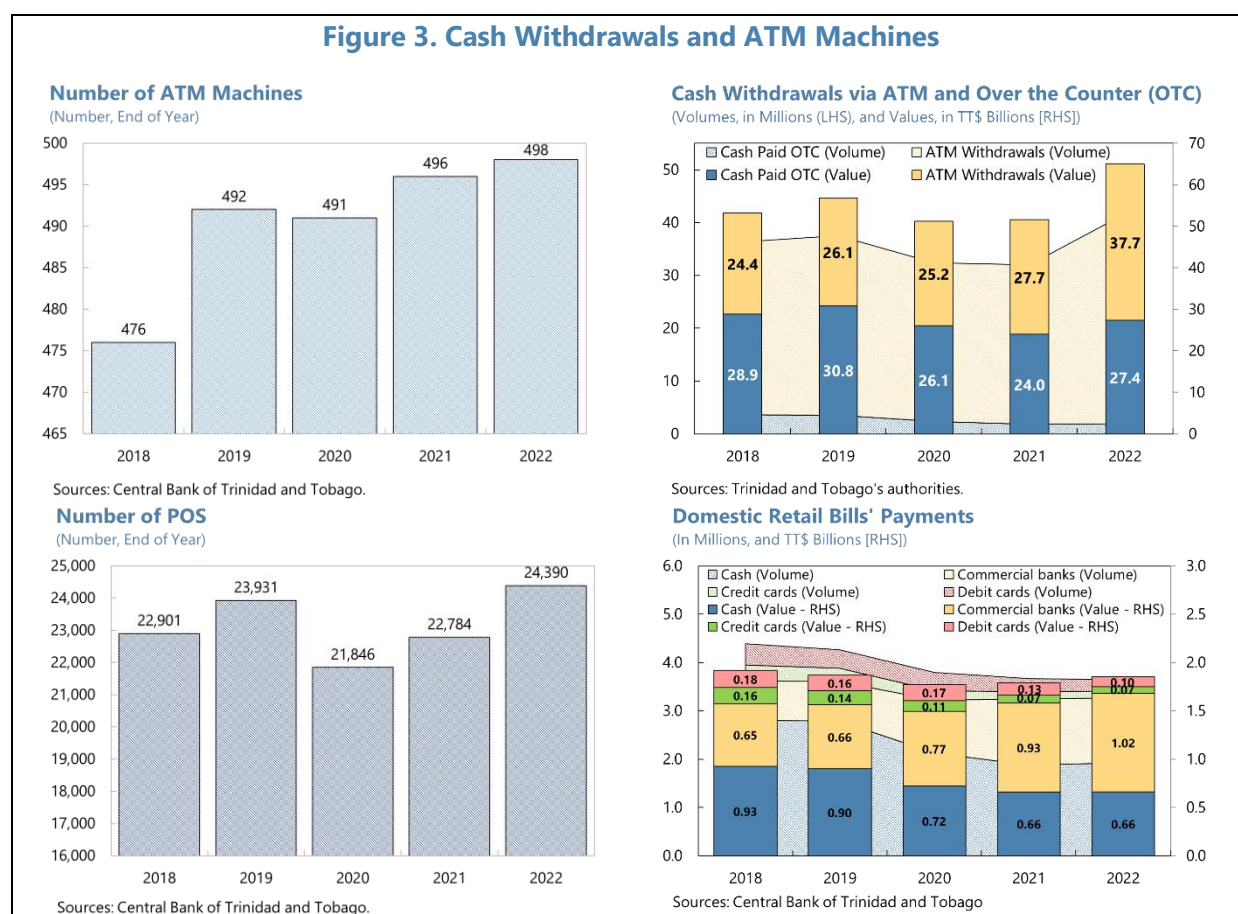
**8. The Central Bank of Trinidad and Tobago (CBTT) is promoting and advancing financial inclusion and literacy.** The CBTT educates citizens about the financial system, debt management, budgeting, financial fraud, and cyber risks through the [National Financial Literacy Program \(NFLP\)](#). The latest *National Financial Literacy survey* found that in 2021, the share of citizens with medium and high financial literacy levels increased substantially, with about 7 in 10 *Small- and Medium-Sized Enterprises (SMEs)* having a bank business account and using more digital banking, and about 6 in 10 SMEs using online banking and preparing financial statements (Figure 2). To enhance financial access for the most vulnerable, the CBTT has developed the *Simplified Due Diligence Requirements (2021)* for basic bank accounts with its companion [guidance](#). Additionally, the authorities aim to leverage the high mobile penetration and enhance financial access and inclusion for the underserved promoting Fintech payments solutions (see section D).



## D. Reducing the Use of Cash, Adopting Fintech, and Modernizing Payments

### Use of Cash

**9. Cash withdrawals and payments in Trinidad and Tobago remain popular.** The authorities aim to reduce the use of cash, which is costly and less efficient to use. In 2022, the population withdrew 65.1 billion TTD, more than in 2021, reflecting the recovery in economic activity. To reduce the cash withdrawals *over the counter* (OTC), banks have been installing *automatic teller machines* (ATM), which are more cost-efficient. As a result, the share of the ATM cash withdrawals has increased. Banks' efforts to digitalize their services, offering more accessible and safer transactions (e.g., using mobile apps and online banking facilities, and installing new POS) helped them gain sizable share in the retail bill payments' market, replacing the cash transactions.



### Fintech

**10. The authorities are embracing Fintech, aiming to transition to a cashless, digital, and inclusive society with an efficient payment system.** The *CBTT's Strategic Plan 2021/26* identifies the need to study the legislative, institutional, and behavioral barriers to Fintech adoption. It also proposes solutions to safely adopt Fintech, and pursue the necessary changes in the legislative,

regulatory, and supervisory frameworks. The IMF has supported these efforts with technical assistance (TA) (Box 1).

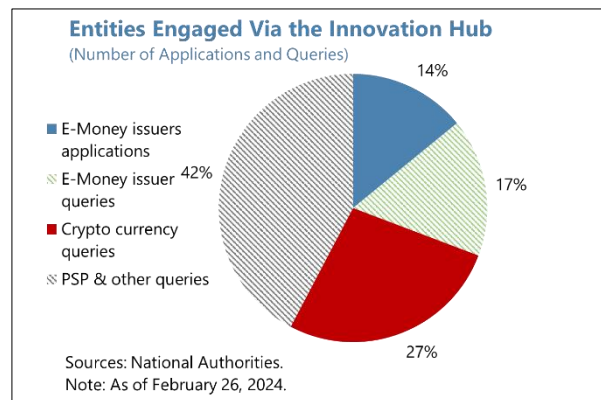
**Box 1. IMF TA on Payments, CBDC, and Fintech**

The authorities have been working with support from the IMF Legal Department (LEG), Money and Capital Markets Department (MCM), and the Information and Technology Department (ITD) in various fronts.

- *Central Bank Digital Currency (CBDC).* Work has focused on conceptual and operational issues related to the issuance of a CBDC. Specifically, examining the CBDCs’ opportunities and challenges, design options and their macro-financial implications, the digital complements needed for effective implementation, the required legal and regulatory framework, digital and cyber risks, cross-border implications, and oversight of the CBDC infrastructures. Discussions have also considered the preparatory work on the macro-financial impact of a CBDC that should underpin the authorities’ decision on the feasibility of the CBDC, and governance framework for issuing the CBDC. This work has helped the CBTT, who has been conducting a CBDC feasibility study and carefully weighing the benefits and risks of its adoption.
- *Fintech Regulation and Legislation.* Work in this area has covered and provided support on three areas: (i) the licensing and supervision of e-money issuers (EMI); (ii) institutional arrangements for Fintech regulation, including the Innovation Hub (IH) and the regulatory sandbox (RS); and (iii) a legislative review of securities legislation to determine whether it covered new business models generated by Fintech, in particular crypto assets. See IMF (2023b).

**11. To stimulate Fintech, the authorities established the Joint Regulatory Innovation Hub (the Hub).<sup>8</sup>** Since October 2020, the Hub has functioned as a portal on the websites of the three

regulators—CBTT, Trinidad and Tobago Securities and Exchange Commission (TTSEC), and the Financial Intelligence Unit of Trinidad and Tobago (FIUTT). Fintech solution providers can use the Hub to obtain guidance on regulatory requirements to launch their proposed products. The Hub allows the regulators to understand better the innovative products and services offered by the entities,<sup>9</sup> assess the associated risks, and decide on their eligibility to register under the existing legislative framework. As of



February 26, 2024, the authorities have engaged with 78 entities on the Fintech matters. They have received 11 EMI applications and 67 queries focusing on the E-Money, crypto currency, and payment service providers (PSP)—see text chart. Additionally, the TTIFC established the [One Fintech Avenue](#) and launched the [Fintech Sprint for Financial Inclusion](#) in collaboration with the *European Union* and the *United Nations Impact Capital for Development (UNCDF)*.

<sup>8</sup> The authorities have also introduced a regulatory sandbox, but the [IMF \(2022\)](#) does not consider this a priority.

<sup>9</sup> To enter the Hub, entities must meet four criteria: (i) propose the development of innovative financial technology products, services, business models or delivery mechanisms in TT; (ii) show potential to improve efficiency and benefit consumers or economy; (iii) have a detailed business plan; (iv) have no negative impact on financial stability.



**12. So far, the adoption of Fintech has concentrated on e-money issuers (EMI) providers.**

To facilitate the provision of EMI services, the authorities [enacted the E-Money Issuer Order of 2020](#). This has allowed to extended eligibility to issue e-money beyond the FIs licensed under the [Financial Institutions Act, 2008 \(FIA\)](#), including under a “provisional license”, which can be initially obtained for 6 months (and for additional periods of 6 months). The EMIs are now able to issue e-money accounts, cash-in, cash-out, provide payment services, and conduct money transfers. An EMI is also required to register with the FIUTT within 5 days of its provisional registration by the CBTT. To facilitate the adoption and use of EMI services, the government has relaxed the limits on transaction and wallet sizes with the [EMI \(Amendment\) Order of 2023](#).<sup>10</sup> The CBTT monitors the operations and regulatory compliance of the EMI, and continues working with the MDT, the FINTECH Association, and TTIFC to support the digitalization of payments infrastructure and the financial inclusion agenda.

**13. Broader Fintech initiatives—e.g., crypto and virtual asset services, for which there is growing interest—require legislative amendments.**

For example, the Security Act 2012 does not cover some of these new Fintech developments.<sup>11</sup> Fund TA has advised the authorities on evaluating the costs and benefits of legal and regulatory action, along with targeted amendments and/or regulation of crypto asset activities (IMF, 2023a).

**Payments****14. The Trinidad and Tobago national payments’ system (NPS) is overseen by the CBTT as established by the FIA.**

Currently, the domestic [payments’ ecosystem](#) includes: (i) the CBTT operating the *Real Time Gross Settlement System (RTGS)* and clearance of large cheques; (ii) an *Interbank Payment System Operator (InfoLynk)* operating the debit card payments (LINX system), *Automated Clearing House (ACH)/Electronic Funds Transfers (EFT)*—ACH/EFT, and *ACH/Electronic Cheque Clearings*—ACH/ECC; (iii) five PSPs; (iv) four EMI,<sup>12</sup> and (v) an EMI service (Endcash) provided by a commercial bank (Republic Bank). The [Payment System Council \(PSC\)](#), led by the CBTT, supports sound and efficient NPS.

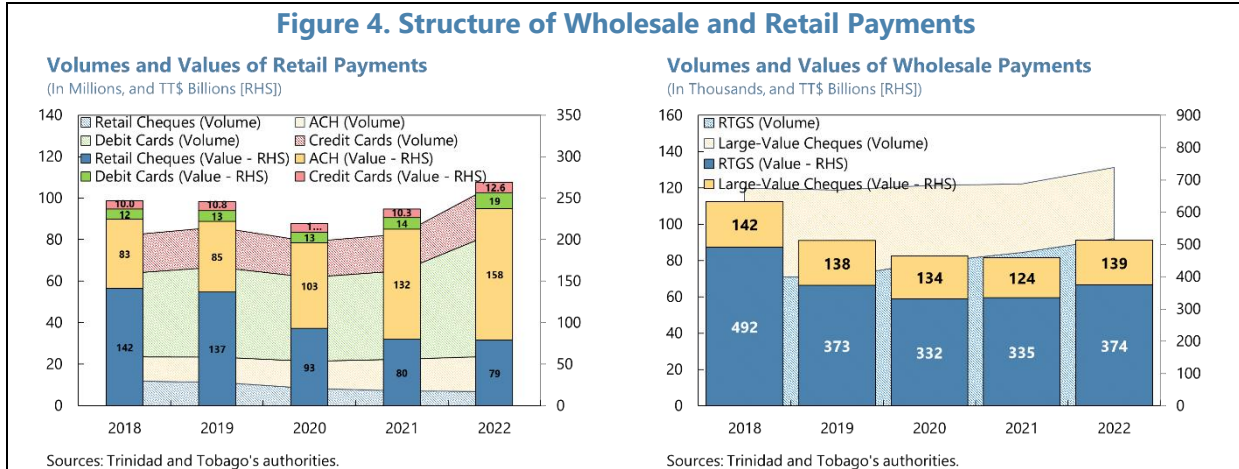
**15. Electronic payments are growing in retail and wholesale transactions.** From 2020 to 2022, retail electronic payments—i.e., ACH transactions—increased, while the use of cheques declined. Debit and credit card usage also rose, supported by the improved security features that make them safer to use in ATM and POS. After some slowdown, wholesale payments grew in 2022. Large cheques (mainly

<sup>10</sup> The amendment has removed limits per transaction for individuals; increased the monthly transaction limits for individuals in the micro category; increased the monthly transaction limits for MSMEs; and eliminated limits on monthly transactions and wallet sizes for large enterprises and the GoRTT. These measures are consistent with UNCDF recommendations.

<sup>11</sup> See CBTT (2023c).

<sup>12</sup> As of September 1, 2023, three EMI operate with full licenses—PayWise Limited, the TSTT, and PESH Money Limited (PESH). One EMI—MyCash (Trinidad and Tobago) Limited—has a provisional license, granted on October 2, 2023, for a period of six months.

from the public sector) still comprise over a quarter of wholesale transactions,<sup>13</sup> despite the introduction of an RTGS in 2004. These payments are still largely manual and take three days to settle. There are no provisions to reduce cheque usage, expedite settlement, or establish a settlement guarantee fund to reduce the inherent risks associated with cheques.



**16. The existing legislative base governing the NPS is fragmented.** Currently, it includes: (i) the *Central Bank Act (CBA)* that gives the CBTT a broad mandate to supervise payment systems, electronic funds' transfers, and remittance businesses; (ii) the *FIA* that makes the CBTT responsible for the supervision of licensees and the oversight of payment systems; (iii) the *EMI order* which allowed certain non-FIs to enter the sector; and (iv) four guidelines,<sup>14</sup> which established licensing requirements and a framework for the oversight of Systemically Important Payment Systems (SIPS).

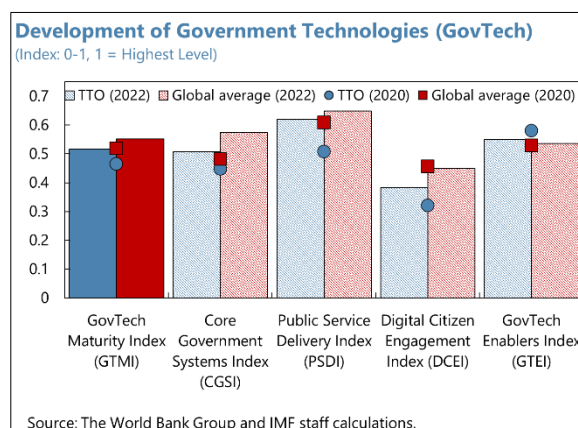
**17. There is an urgent need to adopt a comprehensive NPS Act and develop an enhanced oversight policy.** The existing legislative base is not fully consistent with the CPSS-IOSCO Principles for financial market infrastructures. Also, it has certain gaps. For example, it does not give the CBTT explicit powers to designate payment systems as systemic, or license, regulate, and supervise new PSPs and instruments; and the *EMI Order* limits the eligibility to join the sector. To address these deficiencies, in 2021, supported by IMF TA, the CBTT issued a Policy Proposal Document (PPD) for a Payments System Bill to consult with the stakeholders. This PPD aims to design a single comprehensive payments legislation that clarifies all definitions and the CBTT mandate, allows licensing for a wide range of PSPs and Fintech participants, treats all payment systems (interbank and non-interbank) and addresses systemic risks. Adoption and implementation of the comprehensive NPS Act with an enhanced oversight policy framework will help the authorities to underpin their efforts to modernize the payments system.

<sup>13</sup> Wholesale transactions exceed 500,000 TTD.

<sup>14</sup> See <https://www.central-bank.org.tt/sites/default/files/latest-news/Reg of Payment Service- 28-09-17.pdf>

## E. Deploying Digital Government Technologies (GovTech)

**18. The country is advancing in deploying government technology (GovTech).** According to the World Bank's *GovTech Maturity Index* (GTMI), Trinidad and Tobago has made progress in supporting core government systems, enhancing service delivery, mainstreaming citizen engagement, and fostering GovTech enablers. These enhancements are supported by a strategy, institutions, laws, and regulations, innovation policies and programs, and upgraded digital skills. As a result, the country's rating on the GTMI scale has increased in the four scale rating from "C: *Some Focus*" to "B: *Significant Focus*".



**19. The goals of digital government are to increase online accessibility of public services, enhance their quality and efficiency, improve citizens' experience, and doing business.** In addition, provision of online services is environmentally responsible, easy to control and organize record-keeping. The MDT is (i) establishing the *government cloud and data center*, which will provide a more secure and reliable foundation for national digital transformation; (ii) building the *interoperability framework* to link public agencies, integrate their functions, enable secure data sharing, and support the interaction between citizens and public sector; (iii) creating a *national e-ID* to reliably identify citizens online, improve public administration, and facilitate provision of social and health services offering a digital alternative to in-person government office visits and enabling payments between government and individuals in efficient, transparent, and secure manner; and (iv) developing a strategic cybersecurity roadmap and its implementation plan. To deliver on these plans, the authorities have also sought international cooperation (e.g., with Estonia on interoperability project, and with India<sup>15</sup> on capacity building).

**20. The authorities continue integrating digital technologies to advance public services.** Trinidad and Tobago became the first country in Caribbean to launch a single Electronic Window (SEW) for public services—TTBizLink<sup>16</sup>. Launched in 2013, TTBizLink is a secure business portal that provides 24/7 access to applications for various trade- and business- related government services by linking multiple partners. On July 18, 2023, the *Ministry of Trade and Industries* (MTI) launched the Enhanced TTBizLink platform which improved 36 existing services across seven Ministries, the *Trinidad and Tobago Chamber of Industry and Commerce*, the *Trinidad and Tobago Bureau of Standards* and *ExpORTT*. The new platform allows applicants to download signed and stamped approval documents, pay online for permits and licenses, saving time and costs associated with

<sup>15</sup> In August 2023, GoRTT signed a Memorandum of Understanding (MOU) with India to share INDIA STACK to collaborate on capacity building, exchange best practices, and develop pilot solutions, fostering a strong network of startups, developers, and system integrators, and promoting technological innovation and inclusive finance. See <https://inc42.com/buzz/india-signs-mou-with-trinidad-and-tobago-for-sharing-india-stack/>

<sup>16</sup> See [https://www.ttbizlink.gov.tt/tntcmn/faces/pnu/PnuDisplayContent.jspx?\\_afPnu=TTBLZ](https://www.ttbizlink.gov.tt/tntcmn/faces/pnu/PnuDisplayContent.jspx?_afPnu=TTBLZ)

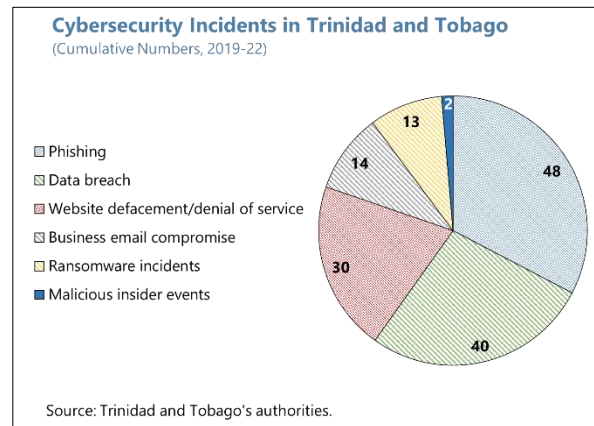
paper-based processes, and improving business climate.<sup>17</sup> The latest initiative in digitalizing government included a launch of the Companies Registry Online System (CROS) by the Companies Registry on February 1, 2023, where users may transmit and sign their documents electronically, and online applications for immigration services.

**21. The government is transitioning towards online payments.** Current monetary transactions involve complex documentation and long waiting times, negatively impacting less tech-savvy and socially vulnerable groups. To promote the cashless agenda while ensuring that citizens have convenient, simple, and secure methods of paying for essential public services, the Ministry of Finance has approved the instructions for using the registered *Payment Service Providers Retail Payment Network* (PSPRN). The PSPRN will enable tax revenue collection through a network of agents with convenient payment locations, and ease access to public services, especially for the vulnerable groups, like the unbanked and underbanked. Recently, the government has enabled electronic payment systems within the judiciary system. The online tax payments’ entails reviewing and adapting the legislation and regulations of the national payment ecosystem, assessing institutional needs for online payment methods, and providing recommendations for the security and resilience of the digital ecosystem supporting online tax payments. It also aims to shift a culture about innovative payment methods. Simplifying tax payments and new payment options are expected to improve the efficiency of tax administration and ease the doing business.

## F. Strengthening the Cybersecurity and Consumer Protection<sup>18</sup>

### Cybersecurity

**22. The country’s digitalization has come along with a rise in cybersecurity incidents.** The CBTT (2023a) reported 147 cybersecurity incidents between 2019-22, including phishing attacks, data breaches, website defacement and denial of service, reports of business email compromise, ransomware incidents, and two malicious insider events (see chart). Of these, about 57.1 percent affected the private sector. Some cyberattacks affected public and private institutions and the delivery of financial services, although disruptive, none were of a systemic nature. The CBTT strategy includes strengthening incident reporting and investigation, advancing the cyber security

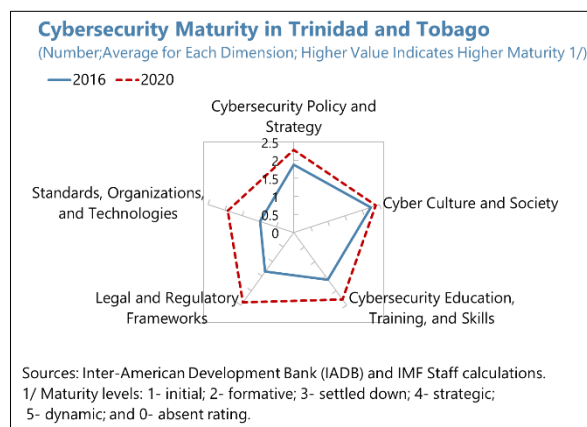


<sup>17</sup> Fourteen new e-services are expected to launch in FY2024.

<sup>18</sup> According to the Global Security Index (2020), Trinidad and Tobago scored 22.18/100, ranking 125th globally and 20th in the LAC region. Also as of 2020, TT had only 314 secure servers per 1 million people, which is eight times less than the LAC average.

capacity, enhance business continuity planning, and liaising with the national and external institutions in countering fraudulent financial activities. (CBTT, 2021)

**23. Trinidad and Tobago’s cybersecurity maturity is rated as the highest in Caribbean (IDB, 2020).** The authorities have recognized importance of the cyber-risks for over a decade. Among the first in the region, they prepared the [National Cybersecurity Strategy](#) assessing main vulnerabilities in the domestic cyber-space (2012) and developed the National Cybercrime Policy (2013)<sup>19</sup>. Over 2016–2020, Trinidad and Tobago significantly improved its cybersecurity framework, showing the largest improvements in dimensions such as legal and regulatory frameworks; standards, organizations, and technologies, and cybersecurity, education, training, and skills. The country’s Vision 2030 assumes aligning and facilitating regional and international cyber security arrangements such as the Caribbean Cyber Security and Cybercrime Action Plan, and forging other international strategic alliances to combat cyber-crime (GoRTT, 2016). Updating the National Cybersecurity Strategy and passage of the Cybersecurity Crime Bill would further strengthen the country’s legislative framework and allow an uptake in the use of and trust in the online services.



**24. The GoRTT is strengthening the cybersecurity at the national level and in the public sector.** The MDT has established the cybersecurity unit and a Strategic Security Action Line. It is ensuring to build cybersecurity by design in all the digital government services. The authorities raise public awareness about the cybersecurity. Also, they introduced a Cybersecurity Investment Tax Allowance of up to \$500,000 for companies investing in cybersecurity software and network security and monitoring equipment from January 1, 2024 through December 31, 2025 (GoRTT, 2023).

**25. The CBTT is taking measures to mitigate cybersecurity risks in financial sector.** The CBTT is strengthening its own cybersecurity and identity management, and the supervision of cybersecurity of the FIs it regulates, with support from the IMF. As a result of these efforts, the CBTT released its [Cybersecurity Best Practices Guideline](#)<sup>20</sup> for the supervised entities in September 2023.

<sup>19</sup> The Cybercrime Bill (2017) was laid in Parliament but was not fully debated and lapsed.

<sup>20</sup> The Corporate Governance Guideline, Guideline for the Management of Outsourcing Risks, Guideline for the Security Systems for Safeguarding Customer Information, Market Conduct Guideline and ICAAP Guideline cover certain aspects of ICT or cyber risk management including (i) Board having special skills including information technology, (ii) risk management framework to include provisions to evaluate the risks and materiality of all existing and prospective outsourcing arrangements and the inherent risks associated with outsourcing which includes cyber risk, (iii) management to be responsible for developing and documenting an operating manual of the policies, procedures and processes of the institution’s information security program (iv) reporting of material incidents to the CBTT and (v) need to conduct stress tests with severe cyberattack as one of the scenarios.

## Consumer Protection

**26. A review of the current financial consumer protection framework can identify risks posed by emerging digital finance business models.** Once analyzed, the risks can be prevented or mitigated by adapting existing rules, reporting requirements, or processes. Collaboration mechanisms between the financial sector and telecom regulators must be formalized to increase the cyber resilience of digital finance. Such collaboration must also be expanded to the private sector to embrace a holistic security assurance framework. By establishing relevant strategies, building adequate data infrastructures, and strengthening stakeholder engagement, the country will foster cooperation, boost the economy, and improve access to digital financial services for everyone.

## G. Conclusions and Policies' Considerations

**27. Despite the progress, efforts must continue to maximize the benefits and minimize the risks of digitalization.** This includes identifying financial inclusion gaps and developing and executing strategies and roadmaps to address them, complemented by promoting digital and financial literacy. Modernizing the payments system will entail promoting e-payments, prioritizing the RTGS for large public transactions, and improving the reach and convenience of banking services (e.g., increased merchant base and more POS). It is important to finalize the *Payments System Services Bill*, and, more generally, to put in place adequate regulatory framework for new developments (e.g., crypto assets). Finally, the authorities are encouraged to continue improving the national cybersecurity framework and ensuring compliance with robust cybersecurity and risk management procedures.

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