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EASTERN CARIBBEAN CURRENCY UNION

SELECTED ISSUES

May 2025

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April 9, 2025

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Approved By
Western Hemisphere
Department

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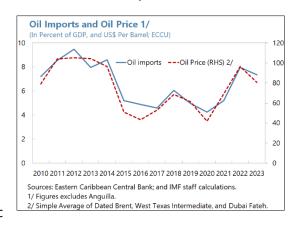
POWERING THE FUTURE: ENERGY TRANSITION STRATEGIES FOR THE ECCU¹

Reducing energy dependence in the ECCU entails improving energy efficiency and shifting from fossil fuels to renewable energy (RE). This energy transition (ET) will affect the transmission of and vulnerability to shocks (e.g., from natural disasters or commodity markets) while at the same time helping to reduce economic imbalances and enhance growth potential. Policymakers need to establish frameworks to maximize the benefits of the ET, while ensuring it is sustainable and equitable.

A. Introduction

1. The ET is an opportunity for the ECCU to reduce its dependence on imported fossil fuels, enhance macroeconomic stability, and bolster growth prospects. ECCU countries are among the most energy dependent in the world, which is a key macroeconomic vulnerability and source of current

account imbalances. Moreover, the use of costly oil imports for electricity generation has led to very high electricity prices, undermining competitiveness—particularly for the tourism industry—at the expense of potential growth that has exhibited a trend decline among ECCU countries in recent decades. Oil price shocks can also have adverse effects on inflation and external and fiscal positions. For example, the 2022 oil price spike led to oil imports rising by nearly 3 percentage points of GDP. Shifting from imported oil to RE could boost long-term growth and support economic



convergence and resilience, while insulating economies from global oil price fluctuations.

2. There are major challenges to achieving the ET in the ECCU. Importing RE technology may widen the current account deficit given high up-front costs of renewables. The small size of the islands' electricity markets limits economies of scale, increasing the cost of RE projects, and deterring investment. Limited land availability constrains solar and onshore wind deployment, and the small scale of grids creates challenges in integrating variable RE. Extreme weather threats further jeopardize RE infrastructure.² These challenges are compounded by high costs of capital, limited fiscal space, and inadequate and varying regulatory frameworks.

¹ Prepared by Peter Nagle and Camilo E. Tovar with research analysis by Diego Gutierrez.

² For example, in July 2024 Hurricane Beryl caused significant damage to the Limlair Solar Farm on Carriacou, Grenada, which was built to withstand Category 4 Hurricanes.

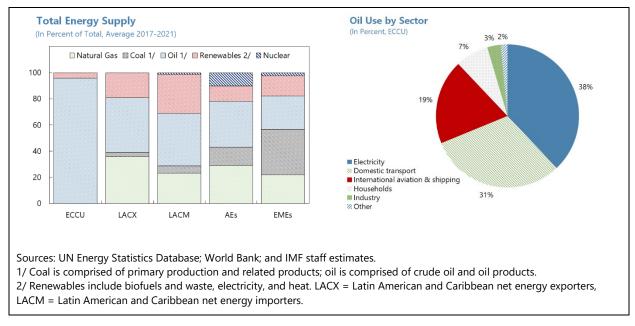
3. This chapter examines the impact of the ET and strategies to achieve it in the ECCU. Section B analyses the energy landscape, Section C discusses strategies for a successful ET, Section D considers the ET as an opportunity to strengthen the ECCU, and Section E discusses policy options.

B. The Energy Landscape

Energy Supply

4. Imported oil products met 96 percent of the ECCU's primary energy needs in 2021.

These imports serve three main roles in the energy matrix: about two-fifths are used for electricity generation (diesel), two-fifths are used in final consumption, such as domestic transport and cooking (as liquefied petroleum gas, LPG), and the remaining one-fifth is used to refuel international ships and aircraft.³ RE accounted for just 1 percent of the energy supply in 2021, although production was higher in Dominica and St. Vincent and the Grenadines due to hydroelectric plants. Traditional biofuels, such as charcoal, account for 7 percent of energy in Grenada and St. Lucia, and 3 percent across the ECCU on average.

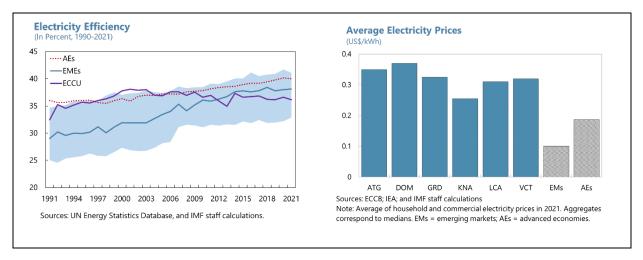


Electricity Generation and Distribution

5. Electricity costs in the ECCU are among the highest in the world, due to aging and inefficient infrastructure, and the use of costly diesel. Most ECCU countries use old diesel generators that are less efficient than newer models or natural gas plants. While average efficiency of electricity generation in the ECCU gradually declined over the past two decades, it rose in

³ While this SIP focuses on domestic energy use, countries might also want to examine reducing energy use for international shipping. In the Caribbean, individual countries may wish to take a regional approach to avoid impacting individual tourism competitiveness. See Black et al. 2024 for more details.

advanced economies (AEs) and emerging market economies (EMEs).⁴ If ECCU efficiency had kept pace with AEs, oil use in electricity generation would have been 10 percent lower in 2021. Further, aging and poorly maintained grid infrastructure results in transmission and distribution losses of 15-20 percent, well above the 6 percent average in AEs (Yépez-García and Mori, 2024). These factors, together with the use of diesel (which is costlier than coal or natural gas) have led to very high electricity costs. These range from US\$0.26/kWh to US\$0.37/kWh in the ECCU in 2021, compared to a median price of \$0.10/kWh in emerging market economies and US\$0.19/kWh in advanced economies. This undermines competitiveness, particularly for the electricity intensive tourism sector. Despite being costly and emissions-intensive, diesel-generated electricity prevails across the ECCU's small-scale power grids due to its reliability and flexibility.



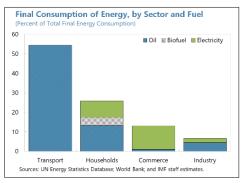
6. Electricity utility companies tend to be vertically integrated monopolies focused on reliability. These companies are a mix of state owned and privately owned, and typically hold monopolies on electricity generation, transmission, and distribution. While this structure may be necessary given the small size of grids, when coupled with inadequate regulatory frameworks (e.g., those governing the licensing of private utility-scale Independent Power Producers), it can stifle innovation and competition, leading to higher consumer costs (Atlantic Council, 2024). Most companies prioritize reliable power supply over RE generation goals. The lack of an independent regulator in many countries is an impediment to new market entrants, given the need to assure them of a level playing field (McIntyre and Ashram, 2017). Despite high costs and challenges, electricity access is near universal in the ECCU, with a significant improvement over the past two decades.

⁴ Electricity generation efficiency measures electricity output versus fuel input. A 37 percent efficiency means 37 units of electricity are produced for every 100 units of fuel, with 63 units of energy lost (e.g., as waste heat).

Energy Consumption

7. Final energy consumption patterns in ECCU countries reflect their economic structures.

Transport is the largest sector, accounting for over half of final energy consumption in 2021, highlighting its importance for tourism. Households consumed 24 percent, the commercial sector (mainly hotels) about 13 percent, and industry only 7 percent. Each sector exhibits different fuel requirements. The transport sector relies entirely on oil (mainly gasoline) due to the dominance of internal combustion engine (ICE) vehicles. The commercial sector uses electricity for over 90 percent of its total energy



needs, driven mainly by air conditioning, which accounts for more than half of electricity consumption by hotels (Coony and Johnson, 2024). Finally, households use oil (as LPG) and biomass for cooking, and electricity for air-conditioning and lighting.

C. Strategies for a Successful Energy Transition

- **8.** A successful ET requires ECCU countries to shift from imported oil to domestically produced RE. The ET has two key components: replacing oil with RE in electricity (about 40 percent of oil use); and replacing oil in end-uses through electrification—e.g., switching to electric vehicles (EVs) for domestic transport, or using electric cookers instead of biofuels. Some uses may need alternative fuels like green hydrogen or methanol (particularly for international transport). The region can deliver this transition by utilizing its substantial solar and wind potential and possible geothermal resources.
- **9.** A successful ET must lower energy costs while ensuring a reliable energy supply. Careful planning, for example, through a National Integrated Resource Plan (IRP), can be vital in this regard. IRPs help ensure countries can meet energy demand, incorporate RE potential, and ensure reliable and cost-effective solutions. ECCU countries could adopt a strategic approach focused on combining energy efficiency and RE generation, with a more gradual electrification of other sectors (Table 1):
- Energy efficiency can be among the most cost-effective approaches and should be prioritized. Economically viable measures such as upgrading appliances and installing efficient lighting can directly reduce energy demand and oil imports with far lower investment needs compared to RE or EVs, resulting in significant savings. For example, a US\$0.9 billion investment in energy efficiency from 2020-2040 could lower CARICOM's energy consumption by 18 percent, resulting in a net reduction in energy expenditure of US\$6.1 billion—5.2 percent of 2023 GDP (Masson and Erhardt 2020).
- Replacing oil-based electricity generation with RE sources has significant investment needs but can directly reduce oil dependency. A rapid expansion of RE will reduce oil

- dependency in electricity generation, potentially lowering costs. The intermittent nature of solar and wind, however, requires investment in energy storage and grid upgrades.
- Electrification of other sectors such as transport should be gradual, given high investment needs and limited RE generation. Moving from ICE vehicles to EVs will require substantial investments in EVs, charging infrastructure, and grid expansion. The effectiveness of this strategy in reducing oil dependence rests on the RE share in the electricity mix. Currently, EV adoption may not lower oil imports, but merely shift oil usage from gas-powered cars to electricity generation.
- 10. Energy security must be central to the ECCU's ET strategy for resilient economic growth. While solar and wind will play significant roles, challenges arise from their daily and seasonal cycles and weather variations that can lead to unstable supply, with adverse economic impacts. Mitigating risks requires incorporating a mix of RE sources, investing in energy storage and backup generation (such as conventional energy), implementing smart grid solutions (including demand flexibility), and introducing insurance mechanisms. Countries that develop geothermal energy, such as Dominica, Grenada, St. Kitts and Nevis, and St. Vincent and the Grenadines, will be less affected, but must ensure their energy infrastructure is resilient to natural disasters.

D. The Energy Transition as an Opportunity to Strengthen the ECCU

- 11. The macroeconomic impact of the ET will differ in the short and medium term, depending on its effect on energy costs. Technological developments have sharply reduced the cost of solar, wind, and batteries (IRENA 2024). However, RE entails large upfront capital investment (but lower operating costs), unlike fossil fuels, which have lower initial investment needs (but higher ongoing costs). For example, reducing energy costs in Antigua and Barbuda by about 40 percent could require up-front capital equivalent to 25 percent of GDP (IRENA, 2021). The financing approach will be critical, especially the distribution of funding from the public and private sectors.
- 12. In the near term, RE projects may boost growth via increased public and private investment. The impact on energy prices will depend on how the upfront costs are initially financed, and targeted measures may be needed to protect vulnerable households from potential cost increases. Beyond transfers, the ET could have significant fiscal implications as governments either invest directly (e.g., in grid infrastructure) or incentivize RE adoption through taxes and subsidies. While these create initial pressures, reduced fossil fuel subsidies and potential green tax revenues could provide offsetting effects, though implementing carbon pricing remains politically challenging given already high energy costs. Current account deficits may temporarily widen due to RE technology imports (e.g., solar panels, EVs), but reduced oil imports and higher foreign direct investment in RE should provide partly compensating effects although potentially with timing lags

⁵ Proactive measures such as reducing import duties and VAT on hybrid vehicles and EVs in Grenada and St. Vincent and the Grenadines illustrates the fiscal trade-offs that arise due to foregone revenue.

(Jaumotte et al., 2024). Investments in RE could create new jobs—e.g., solar installation—partly compensating for losses in fossil-fuel related sectors (e.g., ICE mechanics).

13. In the medium term, the ET is a transformative opportunity for the ECCU to boost growth and competitiveness, build resilience to oil price shocks, and enhance macrofinancial stability. The ET could boost sectors such as tourism by lowering energy costs, while also fostering economic diversification into new industries. For instance, a two-thirds reduction in the electricity costs in St. Kitts and Nevis could increase GDP by 1.1 percent (IMF 2024). It will also improve external balances by permanently reducing oil imports, although foreign financing of RE projects will need future repayments, resulting in financial outflows. By reducing vulnerability to oil price shocks, the ET would lower inflation variability and strengthen monetary policy transmission as inflation becomes less sensitive to external shocks. Higher growth would also boost tax revenues and improve long-term debt dynamics, although the overall impact will depend on governments' policy mixes and financing approaches.

E. Policy Options

- **14.** Policies for the ET in the ECCU must balance maximizing opportunities with minimizing adverse effects. High government debt limits the fiscal space for the ET, while potential growth is expected to slow). Crowding in private investment will be critical, requiring sound fiscal frameworks, sustainable incentives, and clear regulatory policies to incentivize private finance, while protecting vulnerable households from rising energy costs or job displacement through targeted interventions.
- **15. Sound, stable, and credible macroeconomic frameworks are essential for a successful ET.** The currency union provides a strong anchor for stability in the region, but high debt levels demand prudent fiscal management to create fiscal space for the ET. This involves mobilizing revenue and rationalizing spending (e.g., better targeting of transfers and subsidies, including on fossil fuels), alongside a rules-based fiscal framework (IMF, 2022). Strong institutions, a stable business environment, and clear and easy permitting processes for RE, can reduce potential risks for investors and foster investment.
- **16.** Well-designed fiscal incentives can help accelerate the ET and attract private investment, but they must be fit for the ECCU. Carbon pricing is often considered an efficient tool to encourage adoption of RE technology and generate revenue; however, the ECCU's already high energy costs call for a cautious approach, involving an assessment of the financial soundness of public utility companies, and targeted household support. Alternative options include feebates and tax credits, import tariff exemptions for energy-efficient appliances, and phasing out explicit fossil fuel subsidies. This can be complemented with energy efficiency standards in building codes or fuel efficiency regulations (Ivanova et al., 2024). Fiscal and other government policies will also need to address key equity issues arising from the ET, for example, managing energy affordability through progressive pricing and targeted support and facilitating workforce transition with retraining programs.

- 17. Strengthening energy regulatory frameworks with independent energy regulators is also vital to catalyze private sector investment in the ECCU. Regulations should incentivize investment from both large-scale RE producers (e.g., through robust power purchase agreements) and smaller producers, such as households (e.g., net metering for rooftop solar), while avoiding grid cannibalization. Transparent public-private partnership frameworks with strong governance can protect government interests while attracting private investment (Queyranne et al., 2019).
- 18. Regional cooperation can play a key role in facilitating a successful ET. Coordination across ECCU members can unlock economies of scale through harmonized policies and energy regulations, standardized processes, and consistent incentive structures. Innovative financial instruments (e.g., guarantees and blended finance), supported by Multilateral Development Banks, can derisk energy investments and unlock private finance. Initiatives like the Caribbean Resilient Renewable Energy Infrastructure Investment Facility can help overcome policy, institutional, and technical barriers to improve the access to finance to accelerate RE investments, with first projects taking place in Grenada and St. Lucia (Mukhi, 2022; Antoine, 2022). The Sustainable Energy Facility (SEF) for Eastern Caribbean Countries, can also help reduce financial, technical and institutional barriers to geothermal energy development in five Eastern Caribbean countries, while providing institutional strengthening and capacity building to their governments and partners.

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ECCU CBI PROGRAMS: REGIONAL SIGNIFICANCE AND RISKS¹

The Citizenship-by-Investment Programs (CBI) have long been recognized in their importance to fiscal revenue in the ECCU, but there is less clarity over their broader economic contributions. At the same time, investor demand in this market can be highly unpredictable, especially as the programs have come under increased international scrutiny. This chapter takes stock of recent CBI developments in the ECCU and estimates that total investments under these programs far outweigh those directly contributing to government revenue. This underscores the need for ongoing regional efforts to reduce the CBI programs' risk susceptibility as well as to strengthen management of residual risks, including through: (i) clearer provisions for CBI revenues' budget use to mitigate fiscal risks; and (ii) enhanced transparency standards and ex-post assessments of CBI projects to inform regional best practices, assessments of the program's systemic significance, and development of contingency plans.

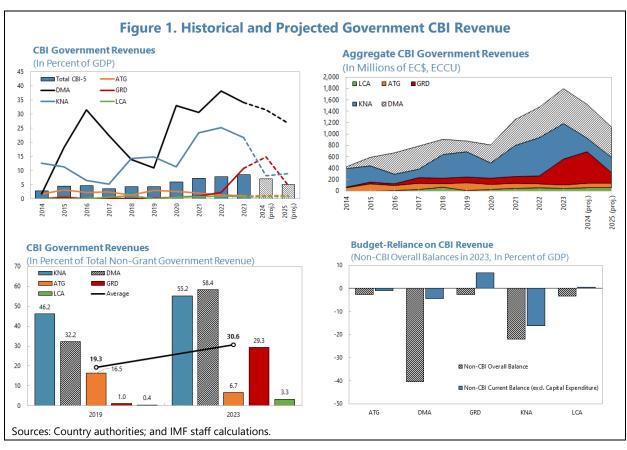
- 1. Over the past decade, the CBI programs have become an important source of government revenue in the ECCU. Although globally a niche market, the scale of the investment flows can be substantial to small island state governments. For the five ECCU members with existing programs ("CBI-5", Table 1)², government CBI revenue averaged 6½ percent of GDP between 2019 and 2023 and increased to nearly a third of total non-grant revenue in 2023. These funds have primarily financed public capital investment, but the level of budget dependency on CBI revenue varies considerably among the individual members.
- 2. Limited transparency obscures the total scale of ECCU CBI investments. CBI investment options include donations to government-owned funds and direct investment in government-approved projects, typically in tourism real estate managed by an external developer (the latter investment is often organized through an escrow account, and the investor's share in the project, typically a new hotel development, is subject to a minimum holding period). While the ECCU members generally disclose aggregate annual government donation amounts, information on direct project investments is largely lacking. Only three members periodically publish CBI application data, with only Grenada releasing high-frequency figures that include granular breakdowns and direct investment volumes. This limited transparency, albeit common in the industry beyond the ECCU, hinders accurate assessment of the program's economic contributions.³

¹ Prepared by Janne Hukka.

² CBI programs allow investors to obtain a second citizenship by making financial contributions to a country without a residency requirement. Outside the ECCU, other notable active CBI programs include those in Turkey, Malta, Vanuatu, Nauru, Jordan, Egypt, and Cambodia.

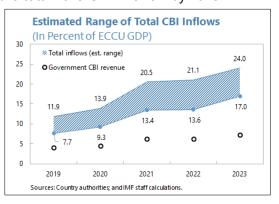
³ Reflecting data constraints, empirical research on CBI program economic impacts is limited. A cross-country study by Clerides et al. (2025) on a panel of residency and citizenship programs finds no convincing impact on real economic variables. Xu et. al. (2015) and Surak (2024) observe that the CBI program benefits may also be outweighed by risks (such as reputational and overreliance on such volatile flows) and can depend on investment structures and how the resources are used. Negative impacts may include real estate price pressures, although in the ECCU this is likely limited due to segmentation of investments in qualifying large-scale tourism projects.

Country (Authority)	Year established	Government Investment Option	Direct Investment Options	Data Availability	
Anituga and Barbuda (CIU)	2013	National Development Fund (NDF)	Approved Real Estate (5 year holding period); Approved Business Project; University of West Indies Fund.	Semi-annual reports on applications received, NDF investment contributions, number of passports issued, NDF government transfers, geographic distribution of applications.	
Dominica (CBIU)	1993	Economic Diversification Fund (NDF)	Approved Real Estate (3 year holding period).	Fiscal accounts only	
Grenada (IMA)	2013	National Transformation Fund (NTF)	Approved Real Estate (5 year holding period).	Monthly statistics on applications received and processed, passports issued, NTF and real estate investment volumes, fees, NTF government and contingency fund transfers, geographic distribution of applications.	
St. Kitts and Nevis (CIU)	1984	Sustainable Island State Contribution (SISC)	Real Estate (7 year min. holding period); Private Real Estate (7 year holding period); Approved Public Benefit Project.	Fiscal accounts only	
St. Lucia (CIU)	2016	National Economic Fund (NEF)	Approved Real Estate (5 year holding period); CBI Government Bond (5 year holding period); Approved Enterprise Project.	Annual reports on applications received and processed, NEF and bond investment volumes, fees, geographic distribution of approved applications and CIU unit financials.	



3. CBI programs appear to have become an increasingly important source of FDI and foreign exchange in the ECCU. Staff estimates suggest the total 2023 CBI inflows may have

amounted to around a fifth of the union's GDP, far exceeding recorded government revenue.⁴ This scale suggests a substantial contribution to private construction and tourism development, though high import-content may temper their GDP growth impact.⁵ CBI inflows may have also provided important foreign exchange stability during the Covid-19 pandemic when tourism exports suffered a major shock.⁶ However, lack of uniformity in CBI project investment structures and absence of information on the use of CBI project



inflows precludes a precise quantification of the CBI programs' economic impacts.⁷

4. While they have significant potential economic benefits, CBI programs are subject to risks for the host countries. The determinants of CBI demand, typically associated with international mobility, are varied and difficult to predict. Where this uncertainty is not carefully managed, abrupt demand shortfalls can expose fiscal and macro-stability vulnerabilities. For example, in St. Kitts and Nevis, the recent sharp decline in CBI revenue widened the 2024 fiscal deficit to 11 percent of GDP.⁸ The programs also expose host countries to AML/CFT and financial integrity risks, where lapses in investor due diligence could have consequences to correspondent banking

⁴ Staff estimates are based on published CBI application data from Antigua and Barbuda, Grenada, and St. Lucia, and application data, application data and estimates included in the European Commission (2024) and Surak (2024), available fiscal data on government CBI revenues, and available investment option pricing information published by the national CBI authorities. Given data gaps, the estimated range extrapolates on known shares of government donation and other investment options in total application volumes, which may give rise to estimation errors for specific years and CBI programs for which no data is available. Uncertainty over the estimated range is large also due to lack of complete record on effective prices over the period, application processing and payment delays and potential non-completed applications.

⁵ Due to data limitations, the CBI inflows' contribution to FDI inflows may be only partially recorded in the ECCB's BoP statistics. On aggregate for the ECCU CBI-5, the estimated range of direct CBI project investment in 2023 amounts to about 100-170 percent of the total recorded FDI inflows. Recent CARTAC external sector capacity development recommendations have focused on challenges in recording developer escrow account in- and outflows to better capture them in BoP financing flows.

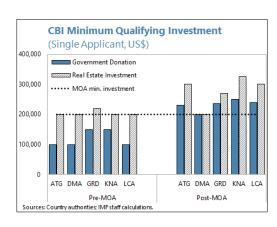
⁶ In 2023, the estimated range of total CBI inflows corresponds to around 40-55 percent of ECCU aggregate tourism exports, which made up around ³/₄ of total ECCU exports. However, the CBI project investments' contribution to FX inflows also depends on the financing arrangements including use of developer escrows. With the tourism collapse in 2020-21, the ECCU current account deficits widened to nearly 20 percent of GDP and were largely financed by capital account (including government CBI donation) and FDI (including direct CBI project investment) inflows in addition to official sector loans.

⁷ CBI investment benefits may be delayed due to temporary escrow account accumulation, including as in some instances investors may purchase project shares in the pre-construction phase. Some programs also allow re-investment in existing CBI project shares after closing of holding periods, and developer buy-back guarantees. Project valuation uncertainties can lead to project overfinancing. Surak (2024) offers a detailed analysis of how CBI investment terms can affect their economic benefits.

⁸ St. Kitts and Nevis: Staff Concluding Statement of the 2025 Article IV Mission.

relationships. The implied risk to host citizens' international mobility, should they materialize, can also involve economic costs.

5. Recent heightened international scrutiny has prompted greater regional coordination. ECCU CBI-5 countries have undertaken substantial regulatory reforms to strengthen the programs' risk management and integrity in the context of an ongoing US-Caribbean roundtable process. A March 2024 Memorandum of Agreement (MoA) standardized the minimum investment amount and launched ongoing work to establish a regional CBI regulator. Some programs are also investigating past irregularities, resulting in a few cases in revoked investor passports.



US-Caribbean Roundtable Principles (February 2023)	Memorandum of Agreement (March 2024)		
1. Collective treatment of denied CBI applications. <i>Implemented</i>	1. Harmonization of minimum investment thresholds to US\$ 200,000. Implemented in Summer 2024.		
2. Interview requirement for all CBI applicants. <i>Implemented</i> .	Strenghtened information sharing through the Joint Regional Communications Centre (JRCC), enhanced transparency standards and conduct of independent financial and operational audits. Standards and audits in progress.		
3. Additional application screening through the Financial Intelligence Unit of the respective country. <i>Implemented</i> .	3. Establishment of a regional CBI regulator charged with setting standards in accordance with international requirements and best practices. In progress. An interim regulatory commission has initiatied legislative drafting		
4. Conduct of annual/biennial CBI program audits. In progress.	 Additional due diligence assessment procedures for approved CBI citizens and enhanced cooperation to support cancelled passport retrieval. In progress. 		
5. Strenghten processes for retrieval of revoked/recalled passports. <i>In progress</i> .	5. Common standards for communication and promotion and for regulation of CBI agents. <i>In progress</i> .		
6. Suspend processing of new applications from Russia and Belarus from end-March 2023. <i>Implemented</i> .	6. Agreement to facilitate joint training programs and capacity building initiatives. <i>In progress</i> .		

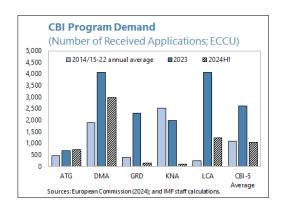
6. The outlook for CBI inflows is highly uncertain. The recent international scrutiny and member actions have dampened new investor demand in some members. However, the longer-term impact of CBI program reforms remains unclear. Unwinding of processing backlogs and a temporary

⁹ FATF/OECD (2023) highlights the potential for CBI programs to be exploited for financial crime, as they can facilitate the alteration of identities, enhance freedom of movement, and enable the establishment of illegal identities in other jurisdictions. The European Union is adapting its visa suspension mechanism to potentially include CBI programs as grounds for suspending a country's visa-free access to the Schengen area.

¹⁰ ECCU CBI countries follow a multi-layered applicant screening process, involving authorized agents, banks' assessment of the origin of funds and screenings by international due diligence firms, a Joint Regional Communications Centre (JRCC) under the CARICOM Implementation Agency for Crime and Security, and domestic Financial Intelligence Units (FIUs).

early-2024 demand increase ahead of the MoA price increases have for now mitigated the impact on recent ECCU-wide investment inflows.

7. Collaborative efforts to strengthen CBI program design and resource use would support the management of downside risks. A sustained abrupt decline in CBI inflows would substantially weigh on ECCU members' fiscal sustainability, tourism investment, and union-wide foreign exchange inflows. The authorities have undertaken and initiated important safeguarding processes to strengthen investor screening, national AML/CFT frameworks, and mitigation of security risks in collaboration with third-party stakeholders. Although



these measures cannot fully mitigate CBI demand risks beyond the ECCU economies' control, these can be more effectively managed. Key measures include:

- Reducing budget-reliance on CBI revenues. Clearer provisions for CBI revenues' budget use
 would also help manage their potential volatility and facilitate medium-term fiscal and public
 investment planning.¹¹
- Enhancing CBI investment transparency to help maximize economic benefits and plan against contingencies. The planned regional CBI regulator is an important opportunity to establish common data transparency standards on all CBI inflows and their use. Beyond supporting the programs' financial integrity, greater accountability can help the development of regional best practices on CBI investment option design to optimize the programs' economic benefits. This could be further informed by standardized ex-post CBI project assessments on economic outcomes. Greater data transparency would also support union-wide monitoring of the CBI flows, better identification of these investments' systemic importance, and the development of contingency plans.

¹¹ For recent examples regarding strengthening of fiscal management of CBI revenue, see <u>2024 Article IV Staff Report for St. Kitts and Nevis (IMF Country Report No. 24/126)</u> and <u>2024 Article IV Staff Report for Grenada (IMF Country Report No. 25/39)</u>.

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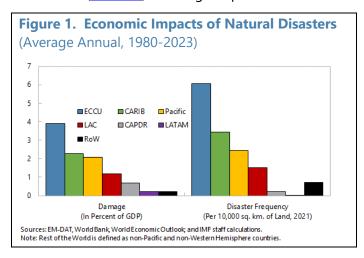
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FISCAL SUSTAINABILITY AND NATURAL DISASTER RISKS IN THE ECCU¹

ECCU countries are highly vulnerable to recurring and increasingly severe natural disasters (NDs). Evidence suggests that severe NDs have negative impacts on fiscal balances and debt in the region. This underscores the need for comprehensive disaster resilience strategies to mitigate immediate economic losses, finance post-disaster needs, and safeguard fiscal sustainability.

1. **ECCU member states are highly vulnerable to NDs.** These economies experience one of the highest frequencies of such events relative to their geographic size (right-hand side panel in Figure 1). Data from the International Disasters Database (EM-DAT) covering the period from 1980 to

2023 shows that the region has sustained substantial economic losses from NDs, averaging 4 percent of GDP annually (left-hand side panel in Figure 1).² The size of these losses is significantly higher than for the entire Caribbean and the Pacific, where ND losses average 2 percent of GDP per year.³ These statistics, while not capturing human losses, underscore the unique challenges ECCU member states face in building resilience to NDs.



2. Losses from NDs have been

intensifying and compounding over time. Since 1990, the Caribbean has experienced devastating damages. Extreme events, such as hurricanes Luis (1995), Georges (1998), Ivan (2004), Erika (2015), Irma (2017), Maria (2017), and the volcanic eruption of La Soufrière (2021), have each caused losses exceeding 5 percent of GDP. In some instances, these losses have exceeded the size of the economy, like Hurricane Maria in Dominica (225 percent of GDP). Recently, initial reports estimated that Hurricane Beryl (2024) caused damages of about 16 percent of GDP in Grenada and 20 percent of GDP in St. Vincent and the Grenadines.⁴ These events inflict severe economic losses and a prolonged recovery (Figure 2). With the projected increase in the frequency and intensity of severe tropical

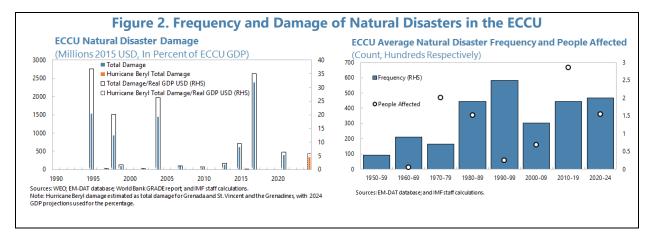
¹ Prepared by Sophia Chen, Spencer Siegel, and Camilo E. Tovar.

² The International Disaster Database (<u>EM-DAT</u>) compiles data on the occurrence and impacts of mass disasters worldwide. The data is sourced from United Nations agencies, non-governmental organizations, reinsurance companies, research institutes, and press agencies, and is distributed by the Centre for Research on the Epidemiology of Disasters (CRED). In this data, "loss" refers to the <u>direct or indirect</u>, immediate <u>economic damage</u> and destruction caused by the disaster, including damage for property and infrastructure.

³ ECCU countries are geographically located in the Atlantic hurricane belt, making them directly exposed to frequent tropical storms and hurricanes. Moreover, several countries are subject to potential volcanic eruptions.

⁴ Calculated based on reported damages in World Bank GRADE reports for <u>Grenada</u> and <u>St. Vincent and the Grenadines</u>, and projected 2024 GDP figures.

cyclones across the globe (Categories 4 and 5),⁵ coupled with costly recovery processes, the adverse effects of NDs are likely to increase over time. This underscores the potential for escalating NDs-related losses to the region.



- **3. Extreme NDs can undermine fiscal sustainability.** Two complementary quantitative approaches are employed to examine how NDs affect the fiscal position in the ECCU countries over the period 1990-2023. The first is an unconditional event-case analysis of 18 severe ND-occurring years, and the second is an econometric analysis using local projections (Jordà, 2005). The latter controls for pre-ND fiscal and debt dynamics, which is important because countries tend to have different fiscal trajectories in the absence of NDs. Countries with stronger pre-existing fiscal positions may also display greater fiscal space to respond effectively after a ND. Results show that:
- **Event case.** Within three years of an ND, gross public debt increases by an average of 7 percentage points of GDP, and the primary balance deteriorates by 2 percentage points of GDP—or 2.6 percent of GDP, excluding citizenship-by-investment (CBI) revenue (Figure 3, bottom charts). However, there is no statistically significant evidence of a change in average real GPD growth over the three-year window of the analysis (Figure 3, top-right chart). These results suggests that the negative impact of the ND on economic activity is offset by the positive impact of reconstruction.
- **Local projections.** Gross public debt increases by 7 percentage points of GDP over a three-year period following the ND, and the primary balance response (with and without CBI revenue) is

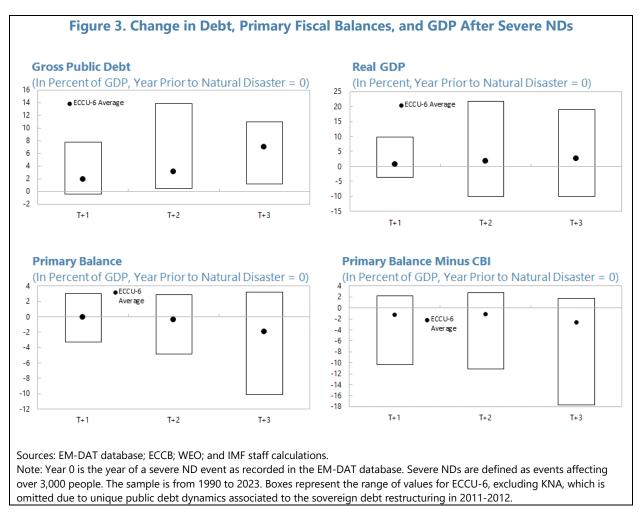
⁵ For an overview of current research on global warming and hurricanes see https://www.gfdl.noaa.gov/global-warming-and-hurricanes/.

⁶ The analysis defines a severe ND event as those affecting at least 3,000 people, where "affecting" is <u>defined</u> as "requiring immediate assistance due to the disaster".

 $^{^7}$ The regression takes the form $y_{i,t+h} = \alpha^h + \sum_{k=0}^2 \theta_k^h D_{i,t-k} + \sum_{k=0}^2 \Gamma_k^h X_{i,t-k} + v_i + \tau_t + u_{i,t}^h$, where i and t index country and year respectively. The superscript $h=1,\dots,3$ denotes the horizon being considered. The dependent variable is primary balance or gross public debt (both in percent of GDP) or real GDP. D is a dummy variable for natural disasters. X is a vector of controls including primary balance and gross public debt (both in percent of GDP) and real GDP. v_i is country fixed effects. τ_t is time fixed effects. $u_{i,t}^h$ is the error term. See Jordà, Òscar. 2005. "Estimation and Inference of Impulse Responses by Local Projections", American Economic Review, 95 (1): 161-182.

negative and significant, reaching a 5-percentage point drop in GDP after three years (Figure 4). The output response to an ND shock is negative but lacks statistical significance (Figure 4, top-right chart). As with the event case analysis, the muted output response may reflect lower production capacity due to ND destruction, offset by post-ND reconstruction.⁸

In sum, these results confirm that severe NDs negatively impact fiscal balances, leading to higher debt.

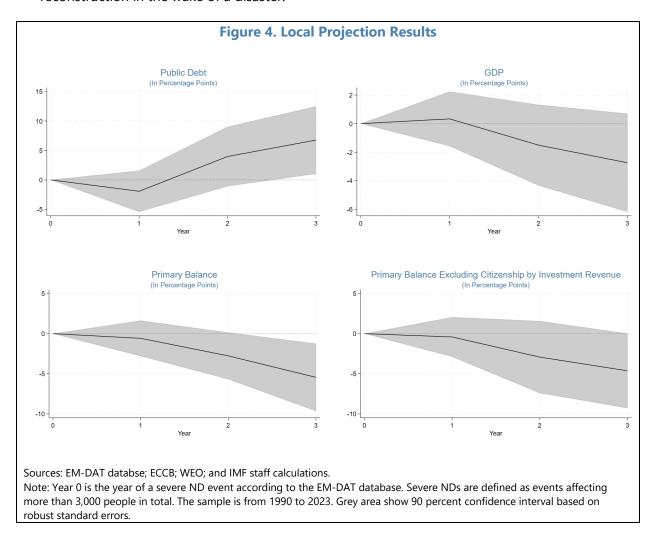


4. The detrimental impact of NDs on the fiscal position reinforces the urgent need for comprehensive ND resilience strategies to ensure long-term fiscal stability. A multilayered risk approach to limit the fiscal impact of NDs requires a strategy that prioritizes building:⁹

⁸ Recent studies for a broader sample of countries and defining natural disasters as those that exceed 1 percent of GDP in damages, show that natural disasters may be contractionary in the year of the event (1.3 percent) and that the subsequent recovery does not fully offset the initial decline (0.8 percent), thus implying a permanent loss in the level of output. See H. Nguyen, A. Feng, M. Garcia-Escribano, 2025, "Understanding the Macroeconomic Effects of Natural Disasters," IMF Working Paper WP/25/46.

⁹ Also see "Building ex-ante resilience to Natural Disasters" in IMF (2019), Eastern Caribbean Currency Union: Selected Issues Paper, IMF Country Report No. 19/63, Volume 2019: Issue 063. February.

- Structural resilience through targeted investments in resilient infrastructure, land-use planning, building codes, and robust targeted social safety nets to protect vulnerable populations before, during, and after NDs.
- **Financial resilience** by establishing fiscal buffers (e.g., dedicated contingency funds¹⁰), utilizing parametric insurance (e.g., the Caribbean Catastrophe Risk Insurance Facility (CCRIF)¹¹), and securing contingent financing options (e.g., catastrophe bonds and sovereign bonds with natural disaster clauses). These measures ensure timely access to resources for recovery and reconstruction in the wake of a disaster.¹²



¹⁰ Some countries have established these funds, such as St. Lucia's under the National Emergency Management Organization (<u>NEMO</u>), Grenada's under the National Disaster Management Agency (<u>NadMA</u>), Dominica's <u>Disaster Management Fund</u>, or Antigua and Barbuda's operating under the National Office of Disaster Services (<u>NODS</u>).

¹¹ CCRIF paid over 3 percent of GDP to Grenada following Hurricane Beryl.

¹² For a broader discussion see, for instance, the accompanying Selected Issues Paper, "Property Insurance Challenges in the ECCU"; IMF (2021), "<u>Dominica: Disaster Resilience Strategy</u>," IMF Country Report No. 21/182; IMF (2022), "<u>Grenada: Disaster Resilience Strategy</u>," IMF Country Report No. 22/80; and The World Bank's <u>Managing Disaster Funds for Response and Recovery</u>.

5. For the ECCU, enhancing ND resilience is essential for immediate recovery and for long-term economic stability and fiscal sustainability. A robust, multilayered resilience strategy is crucial to prepare for the inevitable impacts of NDs, safeguard fiscal health, and ensure a sustainable future. Policy coordination and information sharing between countries, including through regional bodies such as the Organization of Eastern Caribbean States and the Caribbean Disaster Emergency Management Agency, can boost disaster resilience and response. For example, implementing regional infrastructure standards for hurricane-resistant buildings, investing in microgrids and renewable energy to reduce dependence on fragile electricity networks (see Selected Issues Paper "Powering the Future: Energy Transition Strategies for the ECCU"), and jointly improving early warning systems, could be highly impactful. With rising disaster frequency and intensity, proactive measures are paramount for building resilience.

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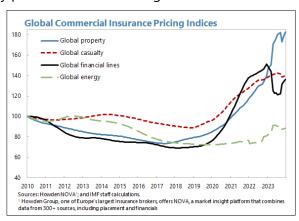
PROPERTY INSURANCE CHALLENGES IN THE ECCU¹

Property insurance affordability presents a growing challenge for the ECCU. With a high reliance on global reinsurance to manage risks in high-exposure products like property, the recent tightening of global reinsurance market conditions has largely passed through to local premiums and constrained capacity to extend coverage. The rising costs exacerbate the already acute non-and under-insurance challenges in the region. These can worsen the economic and fiscal impacts of natural disasters and, if further exacerbated, raise broader macro-financial stability risks by weakening asset quality and credit conditions. Enhancing the ECCU'S readiness to manage these risks calls for concerted efforts to strengthen insurance data collection, risk analysis, and regional supervision. These would inform the appropriate design and calibration of policies to help close protection gaps, contain future market pressures, and mitigate broader financial system risks.

Context: Property Insurance Developments and Risks

1. Global property reinsurance market conditions have significantly tightened in recent years. After a decade of favorable conditions, reinsurance pricing and contractual exclusions saw notable increases in the early 2020s, with a particularly pronounced shift during 2022-23. These

increases were driven by record-breaking global losses and an evolving assessment of climaterelated catastrophe risks, compounded by higher inflation and asset-side revaluations from changed global monetary conditions. As a result, primary insurance premiums have also surged (e.g., Keys & Mulder, 2024). Recent market conditions in 2025 show early signs of softening following increased global capital supply, driven by higher asset values and growth of catastrophe bonds (Financial Times, 2025). However, future trends remain highly



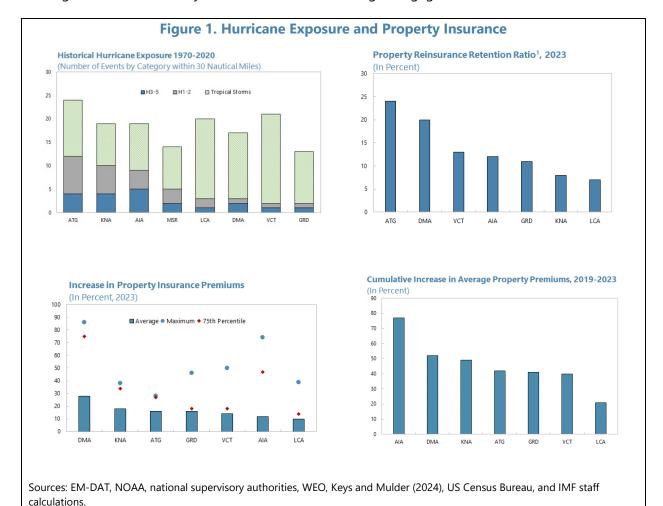
uncertain, and even near-term renewals could be affected by significant losses from recent catastrophe events (Howden Re, 2025).

2. Tighter reinsurance market conditions exacerbate affordability challenges to developing small island states in disaster-susceptible regions like the Caribbean.

Weather-related disaster risks for the region's primary insurers are highly correlated, and their balance-sheet depth is not sufficient to retain substantial liability risk for high-exposure products like property. Furthermore, the limited scale and maturity of local capital markets largely preclude the development of alternative risk management solutions. Accordingly, primary insurers' capacity to extend coverage relies heavily on availability and terms of reinsurance. In the ECCU, the average 2023 retention ratio—the portion of gross premiums not ceded to reinsurance—for property lines

¹ Prepared by Janne Hukka and Jonas Nauerz.

was just 13 percent. The implied high pass-through of reinsurance market pressures to local premiums (Figure 1) exacerbates existing severe protection gaps (the difference between optimal and actual coverage), as low affordability contributes to widespread non-and underinsurance where coverage is not mandated by the terms of an outstanding mortgage.^{2,3}



¹The reinsurance retention rate, calculated as Net Written Premium/Gross Written. Premium is the share of premiums an insurer

does not cede to a reinsurer.

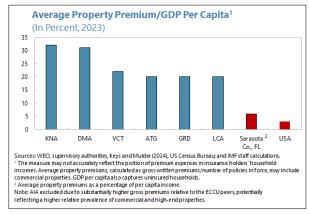
exposure.

² Swiss Re (2024) estimates that 75 percent of economic global losses from natural catastrophes are uninsured, and the estimated insurance protection gap in emerging markets is 85 percent. In many cases, including in the ECCU, quantifying this gap is difficult due to a lack of detailed data on retail real estate valuations and, thus, potential loss

³ In 2023, ECCU's property insurance penetration (gross premium income relative to GDP) was 2.3 percent, similar to non-OECD economies but lower than in the US and OECD countries, despite a greater vulnerability to disasters. The International Association of Insurance Supervisors identifies several factors contributing to underinsurance: low awareness and understanding of risks and insurance products, lack of affordability, and a general belief that governments will provide support (IAIS, 2023b).

3. A more sustained rise in property insurance premiums can have several adverse macro-financial stability implications. A weaker debt service capacity of existing borrowers would raise lender credit risks. Higher costs of new credit can suppress housing market activity and

investment, contributing to greater uncertainty over collateral values. Such risks would be amplified should the reinsurance pressures cause some primary insurers to stop underwriting new policies or to withdraw from property product lines (BIS, 2023). Although there is no indication of imminent widespread reinsurer exits from the ECCU market, the region faces an "affordability gap" compared to higher-income regions with similar risk profiles like the coastal US, suggesting a comparably weaker capacity to absorb



correlated pressures on future reinsurance costs. Should the affordability constraints become binding in the longer term, reinsurance capital may increasingly be redirected to markets where returns can more flexibly adjust to evolving risks.

B. Policy Implications

- 4. Managing property insurance risks would benefit from a regionally coordinated approach. The first step is to enhance risk monitoring and regional insurance market supervision to support the assessment of the ECCU market's reinsurance capacity, early identification of pressures and their transmission to local insurance conditions, and the associated financial stability risks. This would also inform the design of policies to enhance the private sector's disaster resilience and close protection gaps, which would not only help contain future insurance cost pressures but also alleviate the fiscal and social costs of natural disasters. It would also build readiness to consider the potential need for, and the appropriate design of more direct mechanisms to support availability of affordable property insurance.
- **5.** Risk monitoring can be enhanced through more systematic monitoring frameworks for regional property risk exposures, protection gaps, and reinsurance capacity. Effective assessment of protection gaps would benefit from a real estate cadaster (a public record of ownership) mapping out property values to disaster risk exposures. This cadaster should incorporate historical and, with the development of technical capacity, forward-looking model data, differentiated by geography and risk type (IAIS, 2023a). Additionally, a regionally standardized supervisory collection of pricing data for primary insurance products—including average property premiums and rates (the price per unit of exposure) by risk category—would allow for more accurate

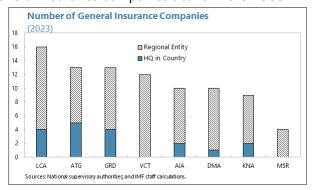
⁴ The ECCU is undergoing a shift toward more granular IFRS17-based supervisory reporting, and national supervisors also collect information on reinsurance treaties. A more risk-tailored approach to data collection can nonetheless help fill remaining gaps and ease capacity constraints to data processing and analysis. Over time, standardized periodic dissemination of aggregated data on regional primary and reinsurance market conditions could also support insurance uptake by limiting information asymmetries and the development of currently lacking independent market benchmarks for the industry.

and regionally harmonized monitoring of local market conditions. Assessments of regional reinsurance capacity and risks can be strengthened by more systematic tracking of the number of reinsurance providers by product line, their provided capital capacity, and the prevalence of proportional versus non-proportional contracts (see Selected Issues Paper "Property Insurance Challenges in the ECCU" Table 1 for definitions). For example, monitoring treaty reinsurance limits and quota shares would support the evaluation of the amount and type of risk primary insurers retain. Tracking the average price of catastrophe excess of loss cover set by reinsurers would also give important insights into the drivers of pricing pressures.

Reinsurance Product	Explanation			
Reinsurance	The practice where one insurance company (the ceding insurer) transfers a portion of its risk to another insurer (the reinsurer).			
1. Treaty Reinsurance	The reinsurer accepts a specified portion of all risks in a category f a set period. Terms are pre-agreed, covering all policies in scope.			
a. Proportional Treaty	The ceding insurer and reinsurer share premiums and claims in a fixed proportion.			
i. Quota Share	The ceding company transfers a fixed percentage of all its risks to th reinsurer.			
ii. Surplus Share	The reinsurer takes on the surplus risk beyond a certain retention limit.			
b. Non-Proportional Treaty	The reinsurer covers losses exceeding a certain amount, while the ceding insurer retains losses up to a threshold.			
i. Excess of Loss	The reinsurer covers losses above a specified amount, with the ceding insurer retaining the amount below the threshold.			
ii. Stop-Loss	The reinsurer covers losses that exceed a certain percentage of the ceding insurer's total premiums.			
2. Facultative Reinsurance	The ceding insurer offers specific individual risks to the reinsurer on case-by-case basis.			
3. Catastrophe Reinsurance	Provides coverage for losses from large, unforeseen events like natural disasters. Often structured as excess-of-loss reinsurance.			
4. Parametric Insurance	Offers payouts based on predefined triggers (e.g., wind speed, rainfall), bypassing traditional claims assessment.			
5. Catastrophe Bonds	Bonds issued to investors, with payouts triggered by pre-specified catastrophic events.			

6. The ECCU insurance market would be better served by a more regional supervisory approach. In contrast to credit institutions, most general insurance companies active in the ECCU

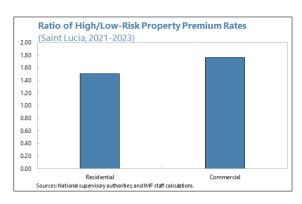
operate across jurisdictions. This calls for consolidated cross-border supervision of their disaster and reinsurance risk management, which can be resource-intensive and exacerbate capacity constraints under the currently fragmented regulatory and supervisory framework. The planned establishment of common regional regulatory standards under the Eastern Caribbean Financial Standards Board (ECFSB) will support more effective supervision, but ultimately, this



would be best facilitated by a more centralized oversight structure. In the meantime, close supervisory collaboration and a regional approach to enhanced data collection and information exchange can aid in monitoring evolving reinsurance market conditions, timely identification of risks, and development of contingency responses.

7. Encouraging private resilience investment to mitigate disaster risks can help contain reinsurance pressures and support insurance uptake. Property (re)insurers increasingly discriminate their pricing based on location, elevation level, and structural resilience. In St. Lucia, for

instance, average premiums for high-risk properties are 50 percent or more above those classified as low risk. Regulatory risk mitigation efforts (strengthening and enforcing regional building codes and land use standards) and financial incentives (such as carefully targeted subsidies or tax credits for retrofitting resilience investment) can thus alleviate both the insurance gaps and costs (see, e.g., IMF (2024) and WBG (2022)). Derisking investment and insurance uptake can also be supported by collaborative efforts



with the insurance industry to enhance public disaster risk awareness and financial literacy, including over insurance policy terms.

8. More direct public policy interventions to improve property insurance affordability and uptake would necessitate a careful evaluation of the regional and national risk-bearing capacity. As high-exposure assets like property warrant significant scale for effective risk pooling and management, any broad-based scheme in small ECCU economies would likely require a regional scope and private sector participation. It would thus require the development of robust union-wide monitoring of exposure risks and protection gaps, ensuring the adequacy of the regional supervisory framework, and considering the public sector's risk absorption capacity given existing fiscal fragilities

⁵ The 2024 GRADE for GRD and VCT argues that introducing resilient structural improvements to buildings could result in potential savings of more than US\$ six for every US\$ one spent for highly vulnerable asset classes.

in several ECCU members. International experience with public-private insurance programs (PPIPs) also highlights the need for careful calibration of program objectives and design features (G7, 2024). This includes prioritizing broad insurance coverage and adequately risk-based premiums to support the scheme's financial sustainability and containment of contingent liability risks. A cost-effective program structure, well-calibrated public-private risk-sharing arrangements and the incorporation of effective risk prevention and reduction incentives can help ease the inherent tension between these objectives (Surminski, 2017). Finally, the PPIP design should aim to minimize disruption to existing private insurance markets, ensure a competitive playing field, and the prompt handling of policyholders' claims (which could be facilitated by parametric insurance components where cost-effective).

Box 1. Selected International PPIP Examples and Lessons Learned

Configuring the role of government and types of coverage depends on the desired aim of the program. A program could involve (1) public reinsurance for assumed risks, (2) a co-insurance arrangement among private insurers combined with a government backstop with risk transfer or liquidity support, or (3) a targeted, publicly provided, direct insurance for specific hazards distributed by private insurers to eligible policyholders. Additionally, achieving broad coverage for targeted hazards may require compulsory purchase or default options.

Experience with existing PPIPs underscores policy trade-offs and the importance of establishing proper incentives for risk prevention. For example, while subsidies could help support affordability of coverage and thus enhance insurance uptake, they strain public finances. On the other hand, fully risk-based premium-setting can effectively incentivize policyholder investments in risk reduction, but likely presents affordability challenges. Therefore, programs could include premium discounts conditional on risk-prevention measures and/or targeted funding for policyholder risk reduction, supported by public sector investments in risk adaptation.

	Flood Re (UK)	National Flood Insurance Program (US)	Catastrophe Risk Insurance Pool (Türkiye)	Earthquake Insurance System (Japan)
Objective	Provide broad coverage for households in flood- prone areas	Make flood insurance available to anyone in participating communities	Help homeowners and businesses recover from earthquakes.	Provide broad coverage for all property owners, including buildings and contents.
Scope	Limited to pre-2009 homes in risk areas, excluding commercial properties	Nationwide availability with some exclusions	National, targeting residential earthquake insurance	National, integration with residential fire insurance.
Government Role	Primarily a public reinsurer and backstop	Public direct insurer and government guarantee	Primarily a public reinsurer and backstop	Primarily a public reinsurer and backstop
Private Market Utilization	Private insurers sell flood insurance policies and transfer flood risk	Government program offering coverage (through private providers) in high-risk areas.	Private insurers handle policy sales, and the government manages catastrophic risk pool.	Private insurers sell policies, with the government acting as a reinsurer.
Promote Adaptation Measures	Discounted premiums for homes that take measures to reduce flood exposure	Risk-based pricing and implementation of risk mitigation measures (floodplain mapping).	Focus on insurance, but also promotes earthquake risk awareness and resilience	Discounted premiums for homes that take measures to enhance resilience.
Compulsion	Voluntary participation by homeowners	Mandatory for high- risk properties with federal loans; voluntary for others.	Insurance mandatory for homeowners in high-risk earthquake zones	Voluntary participation, earthquake insurance is attached to fire insurance.
Premium Setting	Premiums are based on a capped, intermediate method (by council tax band) rather than full risk- based pricing	Premiums were set below flood insurance costs, shifting to risk- based approach in 2023.	Intermediate method, premiums based on risk but also adjusted to ensure affordability for low-income households	Intermediate pricing, with discounts for seismic resilience and risk-based adjustments.
Timeline	Designed to operate until 2039	Ongoing program	Ongoing program	Ongoing program

1/ <u>Surminski (2017)</u> emphasizes that insurance must be supported and integrated into a solid flood risk management approach, which is critical for countries with insurance but even more so for developing countries. Furthermore, to alleviate concerns that flood insurance de-incentivizes resilience by creating a false sense of security, Flood Re should send signals that would help to prepare homeowners for a risk-reflective approach to insurance.

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