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Item Type	event;event
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Download date	2024-12-04 08:51:05
Link to Item	<a href="https://hdl.handle.net/20.500.14394/49466">https://hdl.handle.net/20.500.14394/49466</a>

# **Safeguarding Caribbean lives and livelihoods for regenerative tourism: Surveying the stringency-resiliency nexus in small island tourism economies**

## **Introduction**

The COVID-19 pandemic and the government measures to contain its spread have taken a heavy toll on the Caribbean, affecting both livelihoods and lives (Murphy et al., 2020). Economically, Caribbean small island economies contracted by at least 10 percent in 2020 (IMF, 2021). Although governments in the Caribbean acted swiftly to safeguard lives and contain the spread of COVID-19 (Murphy et al., 2020), they faced a clear and present economic dilemma in the wake of the COVID-19 pandemic and the self-imposed government stringency measures, i.e., a halt to foreign exchange earnings and economic activities resulting in severe loss of jobs and income (OECD, 2020; IMF, 2021; WB, 2021). Recently, the World Bank (2021) concluded that governments face an unavoidable tradeoff between saving lives or protecting livelihoods; a sentiment that also seems to resonate across the Caribbean (IMF, 2020; Murphy et al., 2020; OECD, 2020).

Although governments implemented diverse interventions, with different degrees of stringency and speed, these control measures imposed substantial economic costs, including increased fiscal, financial, and monetary pressures, hence affecting economic resiliency (Curdia, 2020; IMF, 2020; Harjes et al., 2021; Kongsamut et al., 2021; Murphy et al., 2020). In essence, the COVID-19 pandemic resulted in an economic crisis through two shock transmission channels, i.e., the loss of lives and productivity from infections and mobility control measures, in addition to the shortfall in financial flows and foreign exchange earnings from trade and tourism service exports (Mooney & Zegarra, 2020; Murphy et al., 2020).

However, while control measures, such as national lockdowns and strict shelter in place measures were relatively effective in controlling the spread in some SITES, others experienced a rise in COVID-19 cases despite implementing government measures (Asahi et al., 2021; IMF, 2020; Murphy et al., 2020; OECD, 2020). Thus, whereas lockdowns halted the economy, they were not effective enough to reduce the spread of the virus (OECD, 2020). In the aftermath of the COVID-19 pandemic, this catch-22 situation continues to play out across the Caribbean as many struggle to restore their post-pandemic island economy and develop tourism in a regenerative manner.

Caribbean SITES indeed continue to face an existential conundrum between safeguarding livelihoods and saving lives in the short-term, in addition to balancing short-term and medium-term financial and fiscal risks (Deb et al., 2020; Murphy et al., 2020). Recently, the International Monetary Fund (IMF, 2021) concluded that Caribbean SITES risk a COVID-19 economic long-haul due to the lasting scarring in terms, e.g., structural unemployment, health costs, surging fiscal deficits, and a post-pandemic debt trap. The virus may indeed be fading, but its legacy is likely to linger across the Caribbean over the medium term (Mooney & Zegarra, 2020).

The purpose of this study is to explore government COVID-19 stringency measures taken by a select sample of Caribbean SITES, and, subsequently, analyze the dynamic relationship with economic resilience as measured by the level of net foreign assets and the development in international reserves during the course of 2020. Building forth on recent COVID-19 economic impact studies, this paper describes the specific SITE case of Aruba and surveys the developments in international reserves, government stringency measures, residential mobility, capital controls, and fiscal support during 2020. Specifically, this study explores the short-run nexus between government stringency measures and international reserves, and questions the popular belief that there is a tradeoff between preserving livelihoods and saving lives. The paper concludes with several directions for future research as well as policy recommendations.

## **Literature Review**

For small island tourism economies (SITES) in the Caribbean, the export of tourism services is the main source of income and foreign exchange earnings. In some Caribbean SITES, tourism services account for more than 50 percent of GDP and at least 70 percent of foreign exchange earnings (see Table 1). Besides generating employment and (tax) revenues, tourism foreign exchange earnings are integral to maintaining monetary stability by managing required international reserves to meet financial obligations, foster confidence, and fend against foreign exchange fall-outs and economic shocks (Carasco et al., 2013; Harjes et al., 2021; Mooney & Zegarra, 2020). Thus, the adequacy of international reserves are pivotal to strengthening economic resilience.

Caribbean SITES need a foreign exchange requisite for shielding against external shocks and safeguarding confidence. Tourism-dependent economies hinge largely on foreign exchange earnings from the export of tourism services (IMF, 2020; Mooney & Zegarra, 2020). These foreign exchange earnings are integral to support an economy's international reserves and, thus, maintain monetary stability, especially in Caribbean SITES that enjoy a fixed-exchange regime under the purview of a central bank or monetary authority. In general, international reserves are defined as external assets that are readily available to and controlled by the monetary authorities for meeting balance of payments financing needs, for serving as a basis for foreign borrowing, for intervening in exchange rate markets to affect the currency exchange rate, and for maintaining confidence in the (domestic) currency and the economy (IMF, 2020). In the case of Caribbean SITES with fixed or pegged exchange regimes, international reserves are used by central banks to maintain the external value of their currency at a fixed level. Reserves are a critical liquidity and generally associated with lower crisis risks as well as policy responses to external sector shocks for mitigating the adverse effects (IMF, 2020).

*Table 1. Stylized indicators of select small island tourism economies (CBA, 2021; Hale et al., 2021; IMF, 2021; Mooney & Zegarra, 2020; WTTC, 2021).*

Small Island Tourism Economy	Population density	Tourism export receipts (% of Current Account; Ave. 2015-2019)	Direct contribution of tourism to GDP (%; Ave. 2015-2019)	Real GDP growth 2020 (%)	Current Account balance 2020 (% of GDP)	Net Foreign Assets ( $\Delta\%$ 2019-2020)	Government Debt ( $\Delta\%$ 2019-2020)	Total COVID-19 cases (# of infected people)
Aruba	638.8	77	27.6	-22.3	-12.7	+23.3	+44.8	11,108
Antigua & Barbuda	220.7	81	13.1	-17.3	-16.3	-20.5	+21.2	1263
The Bahamas	38.9	75	19.2	-16.3	-17.6	+38.2	+17.5	12,342
Barbados	667.5	41	13.1	-17.6	-7.4	+36.5	+29.6	4,043
Dominica	95.7	76	12.3	-10.4	-18.8	+6.1	+11.6	191
Grenada	329.4	83	6.9	-13.5	-17.2	+24.2	+10.9	161
St. Kitts & Nevis	203.2	63	6.6	-18.7	-8.1	+3.3	+9.2	341
St. Lucia	299.7	81	15.6	-18.9	-16.3	-11.3	+24.3	5,216
<i>Mean</i>	<i>311.7</i>	<i>72.1</i>	<i>14.3</i>	<i>-17.3</i>	<i>-14.3</i>	<i>+11.8</i>	<i>+20.1</i>	<i>4333.1</i>
<i>Standard deviation</i>	<i>231.5</i>	<i>14.0</i>	<i>6.8</i>	<i>3.6</i>	<i>4.4</i>	<i>19.2</i>	<i>11.5</i>	<i>4940.1</i>

Early March 2020, when the COVID-19 pandemic reared its head in the Caribbean, not only were lives at stake, but also livelihoods, especially for those depending directly and indirectly on tourism services for their income (IMF, 2020). In response to the dual demands of health safety and financial stability (Cross et al., 2020; Mooney & Zegarra, 2020), Caribbean governments resorted to implementing several non-pharmaceutical interventions (Murphy et al., 2020), including a mix of, e.g., public health, fiscal, monetary and foreign exchange policy controls (see Table 2).

Public health measures limit residential mobility to contain viral spread and infections, whereas monetary and capital control measures provide (additional) liquidity, and stem the outflow of international reserves by limiting capital outflow transactions (Achuo, 2020; Cross et al., 2021; Harjes et al., 2021; Kongsamut et al., 2021;). Likewise, fiscal measures provide liquidity to business and/or households in the form of, e.g., credit guarantees, term funding, repayment moratoria, and employee wage subsidies (Kongsamut et al., 2021). The latter fiscal measures are, however, largely contingent upon the available fiscal space, and may, consequently, result in increased foreign borrowing causing increased fiscal deficits and debt levels in the medium term.

In terms of mitigating the negative effect of the health shock transmission channel, previous studies indicate that, in general, government stringency measures were relatively effective in containing the widespread diffusion of the corona virus, despite the surge of several subsequent contagion waves (Achuo, 2020; Deb et al., 2020). The preliminary evidence suggests that targeted stringency policies can minimize both economic losses and deaths (Demirguc-Kunt et al., 2020). While early government stringency measures helped to slow down the pandemic, over time their effectiveness wore off due to numerous factors, including behavioral dynamics (i.e., residential mobility behaviors, non-compliance with stringency guidelines, and institutional distrust) and structural factors (i.e., high population density, early reopening of the economy, and weak institutional capacity) (IMF, 2020; OECD, 2020).

Nevertheless, Murphy et al. (2020) indicate that stringent controls and, specifically, the early timing and longevity of controls were instrumental in the COVID-19 containment in Caribbean small island economies. Likewise, Cross et al. (2020) report that timing and duration were fundamental in controlling the spread of COVID-19; governments which responded to the

pandemic faster and held on longer to control measures saw greater reductions in viral transmission. However, these countries also reported more severe economic contractions ranging from -8 percent to -15 percent (Cross et al., 2020). Demircuc-Kunt et al. (2020) reach similar conclusions and show that non-pharmaceutical interventions led to a decline of, on average, 11 percent in economic activities. They conclude that the sooner stringency controls are implemented, the better the economic and health outcomes (Demircuc-Kunt et al., 2020).

Similar magnitudes of output loss – ranging from -6 percent to -20 percent – are reported for Latin America and the Caribbean (IMF, 2020). Mooney & Zegarra (2020) present the case for economic losses in the Caribbean and conclude that the fallout from tourism flows has a significant negative impact on output, ranging from -4.6 percent to -19 percent in SITES. Asahi et al. (2021) indicate that early adoption of lockdowns in Latin America are associated with a drop of 10 percent to 15 percent in local economic activities. Alternatively, Ueda et al. (2021) report that less aggressive measures are associated with less economic contraction.

*Table 2. Sample of policy measures and interventions in response to the COVID-19 pandemic (Murphy et al., 2020; Curdia, 2020; Harjes et al., 2021; Kongsamut et al., 2021).*

Public Health measures (non-pharmaceutical)		Monetary, FX and Financial measures		Fiscal Measures	
<b>Mobility in country</b>	Border health checks and controls Full or partial border closure (travel bubbles and specific flight suspensions)	<b>Accommodative monetary policy</b>	Foreign exchange intervention  Reduce policy rates and reserve requirements  Liquidity support to financial institutions	<b>Foreign borrowing</b>	Increased foreign borrowing to cover shortfall in revenues or cover surge in expenses
	Curfews and shelter-in-place Full or partial stay-at-home orders (movement of essential workers allowed) Closure of public spaces and events		<b>Macro-prudential relaxation</b>		Release macroprudential buffers and provide regulatory flexibility  Provide credit guarantees, term funding and/or payment moratoria
	Limit public gatherings  Close or limit business services  Close educational and social service organizations Social distancing and mandatory use health masks in public	<b>Capital &amp; FX controls</b>	Capital flow management of outflows to ease pressures on international reserves  Restrictions on residents' investments and transfers abroad  Minimum holdings by non-residents Business restrictions on outgoing capital transactions	<b>Expenditure management</b>	Cut or postpone fixed and variables expenses  Public sector salary adjustments and wage cuts

However, the evidence on the tradeoff between saving lives and safeguarding livelihoods remains inconclusive. Kochanczyk & Lipniacki (2021) show that a high death toll correlates with a deep and long-lasting lockdown, causing a severe economic downturn. Contrary to Cross et al. (2020), they conclude that the tradeoff between health and wealth is illusory, and that saving lives and safeguarding livelihoods are not competing objectives (Kochanczyk & Lipniacki, 2021). Likewise, Demirguc-Kunt et al. (2020) conclude that a lives-livelihoods tradeoff in the short-run may not exist if stringency policies are feasible and targeted.

## **Methodology**

This study explores the impact of government stringency controls, residential mobility behaviors, capital flow management, and emergency (fiscal) liquidity support on the level of international reserves in Caribbean SITES. More specifically, it describes the case of Aruba, one of the most tourism-dependent islands in the Caribbean with a significant drop in real output during the COVID-19 pandemic in 2020 (see Table 1). The aforementioned measures cover public health, monetary, financial and fiscal interventions that have a hypothesized (negative or positive) impact on international reserves. This study employs secondary data and includes the following variables (see Table 3): international reserves, government stringency controls, residential mobility behaviors, capital controls, and fiscal support. Weekly data was collected for the period between January 1, 2020 and December 31, 2020, and is limited to a relatively short-run perspective.

To analyze the relationship between government stringency controls and international reserves, and considering previous studies, multivariate quadratic regression analysis was conducted with an autoregressive component. More specifically, based on the dynamic (non-linear) character of stringency controls (Cross et al., 2020; Kochanczyk & Lipniacki, 2021) and the lag effect of initial levels of international reserves (IMF, 2020), a quadratic function of the government stringency index (standardized from 0 to 100) was used in addition to a time-lag (t-1) for the stock of international reserves. All variable data was log transformed. To assess stationarity of the time-series, ADF tests of unit root were conducted and were found to be significant ( $ADF = -4.81$ ,  $p < .01$ ). To explore the mitigating effect of capital controls and fiscal support, two interaction components (i.e., capital controls\*stringency controls and fiscal support\*stringency controls) were included in the multivariate quadratic autoregressive analysis. To account for the effect of tourism inflows and lapse of time, these were considered as control variables.

*Table 3. Description of main variables.*

Variable	Description	Source
<i>International reserves</i>	Net foreign assets of commercial banks and the central bank, excluding revaluation differences of gold, foreign exchange holdings and security holdings (Dependent variable).	Central Bank (2021).
<i>Government stringency controls</i>	Government response and ( <i>de jure</i> ) stringency controls implemented by the Government to restrict mobility and maximize social distancing. Measured by the Government Response Stringency Index (indexed from 0 to 100) consisting of a composite of different control indicators (e.g., school closures, workplace closures, public event restrictions, stay at home restrictions, public transport restrictions, and travel bans) (Independent variable).	Hale et al. (2021), Our World in Data (2021).
<i>Residential mobility behaviors</i>	Residential behaviors and ( <i>de facto</i> ) movement in specific locations. Measured by the Community Mobility Index (indexed from 0 to 100) that describes the movement (number of resident's change) in workplaces, recreational and leisure spaces, and grocery and retail stores (Independent variable)	Hale et al. (2021), Our World in Data (2021).
<i>Tourism credits</i>	Foreign exchange earnings (inflow) from the export of tourism services activities recorded on the current account of the balance of payments (Control variable)	Central Bank (2021).
<i>Capital controls</i>	Capital flow management and foreign exchange restrictions on current and capital accounts of the balance of payments (Moderating variable).	Central Bank (2021).
<i>Fiscal support</i>	Government emergency liquidity support (from foreign borrowing) to cover financial assistance and wage subsidies to private sector (employees and business) (Moderating variable)	Department of Finance, Government of Aruba (2020), Central Bank (2021).

## Results

The results indicate that during 2020, international reserves remained stable and well-above minimum reserve thresholds, despite the plunge in tourism arrivals (-64.9 percent YoY) and tourism credits (-48.1 percent YoY), partially mitigated by the drop in imports of goods and services (-22.7 percent YoY) (see Figure 2.1 and Figure 2.2). The results show that international reserves averaged Afl. 1,897.1 million, ranging between Afl. 1,749.6 million (minimum) and Afl. 2,136.5 million (maximum). The level of international reserves rose by Afl. 386.9 million (+22 percent). In terms of reserve adequacy, the current account coverage, i.e., total months of imports of goods and services, increased from 4.9 months to 7.5 months (between January 1, 2020 and December 31, 2020).

By the second week in March, 2020, Aruba registered its first two COVID-19 cases, and consequently, the Government of Aruba responded with several stringency measures. These interventions escalated within two weeks with the announcement of a total lockdown, e.g., including stay-at-home orders, curfew announcements, (non-essential) workplace restrictions, school closures, public event restrictions, and a travel ban. By early April, 2020, the government stringency index (GSI) increased from 0 to 86.2, averaging 44.1 for the complete year (see Figure 2.3). Conversely, the residential mobility index (RMI) dropped to -65.5 with the escalation of government stringency controls, albeit with a lag of two weeks, and remained largely negative for the rest of the year, averaging -20.1 (see Figure 2.3).

Figure 2.1. Developments in international reserves.

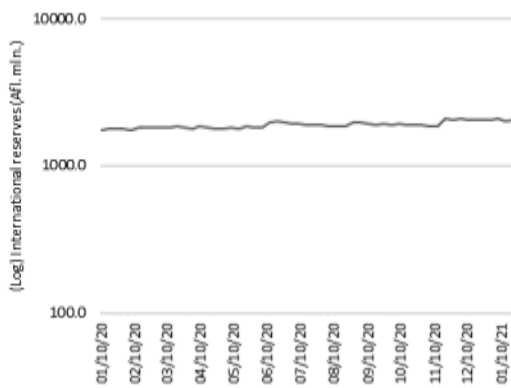


Figure 2.2. Tourism and trade developments.

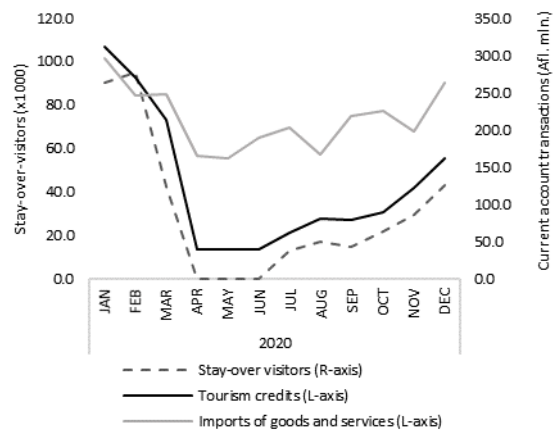


Figure 2.3. Stringency controls and residential mobility.

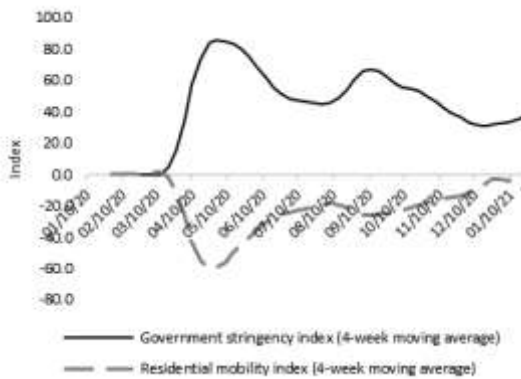
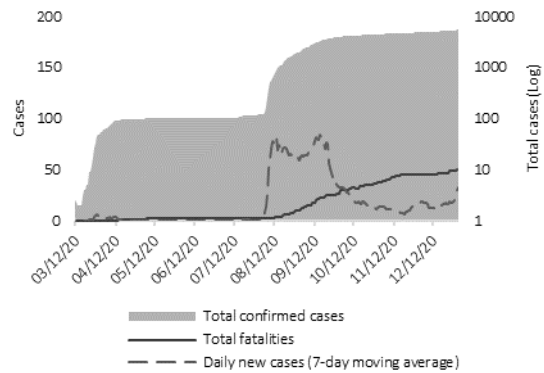


Figure 2.4. Waves of COVID-19 contagion.



\*The Aruban florin is pegged to the US dollar (Afl. 1.79 = US\$ 1.00).

After three (3) months of national lockdown, the travel ban was (partially) lifted in July, 2020. Consequently, the GSI fell in tandem with an upturn of the RMI as mobility increased. However, within three weeks after the reopening of the borders and the de-escalation of some stringency controls, there was significant surge in COVID-19 cases ( $p < .05$ ). By October, 2020, this second wave resulted in at least 4000 registered total cases. Although stringency controls re-escalated during this period, residential mobility behaviors did not change significantly ( $p > .05$ ). The evidence suggests that although stringency controls and residential mobility behaviors are two sides (de jure and de facto) of the same intervention phenomenon, their relatively independent effects, especially after the reopening of the economy, are associated with the increase in total cases.

In fact, this latter surge is largely explained by residential mobility behaviors ( $\beta_2 = 1.62$ ,  $R^2 = .45$ ,  $p < .05$ ), with a limited (non-significant) curbing effect of de jure stringency controls ( $\beta_2 = -.59$ ,



$R^2=.25$ ,  $p>.05$ ). Beyond a GSI of 41.3 (vertex point), de jure interventions did have, however, a significant impact on reducing total cases ( $p<.05$ ). With the COVID-19 pandemic response by the Government of Aruba and the announcement of a total lockdown and travel ban, the Central Bank of Aruba (CBA) swiftly eased monetary and macroprudential policies during the third week of March, 2020. Reserve requirements were lowered from 12 percent to 7 percent, thereby injecting almost Afl. 200 mln. into the commercial banking sector. From a macroprudential policy perspective, the minimum capital adequacy ratio was cut (from 16 percent to 14 percent), the prudential liquidity ratio was lowered (from 18 percent to 15 percent), and the maximum loan-to-deposit ratio was increased (from 80 percent to 85 percent) (CBA, 2021). Furthermore, new foreign exchange licenses for all outgoing capital transactions were suspended as well as restricting certain current account (outgoing) transactions in order to manage and limit the outflow of foreign reserves (CBA, 2021).

To absorb the economic losses and adverse labor market impacts, the Government of Aruba announced a sizeable emergency fiscal package – 15 percent of GDP – by mid-April, 2020 (CBA, 2021). The fiscal package, largely externally financed, entailed minimum income support, partial wage subsidies, and quarterly liquidity assistance to small businesses, in addition to providing financial support to the General Health Insurance and the Social Security Bank. Operational expenditures on goods and services were also cut, however, not merely enough to compensate for the budget deficit, which reached 18 percent in 2020. The government debt burden surged by 45 percentage points to an estimated 115 percent of GDP, of which more than half (57 percent) is in the form of foreign debt (CBA, 2021). To finance the deficit, the Government of Aruba resorted to foreign borrowing and sought emergency fiscal assistance (liquidity support) from the Kingdom of the Netherlands. In 2020, the Netherlands offered liquidity support in the form of conditioned, 2-year interest-free loans, amounting to 9 percent of GDP (US\$230 million). Additionally, the Government of Aruba borrowed on the international market to finance its pre-existing debt servicing and liquidity needs to the sum of almost US\$250 million (10 percent of GDP).

The results show that government stringency controls have a curve-linear impact on international reserves, with a significant positively moderating effect from capital controls and liquidity support, in addition to reduction in consumption and imports. The analysis confirms that government stringency controls had a dynamic (non-linear) effect on international reserves ( $\beta_2=-1.23$ ,  $p<.001$ ,  $R^2=.46$ ). More specifically, the concave relationship shows an optimum government stringency index point (i.e., the vertex) of 42.9, after which there is a significant negative association between GSI and international reserves.

## **Conclusion and Discussion**

Caribbean SITES have been profoundly struck by the COVID-19 pandemic and the rippling effects that followed – and still continue – in its aftermath. In the case of Aruba, despite being one of the hardest hit SITES in terms of both economic contraction and COVID-19 cases, it fared relatively well in monetary and financial terms, albeit causing significant surge in pandemic-driven government debt. Although the results are limited to a single case study, the initial findings yield several policy insights, and hold important implications for policy makers and future research.

The findings show that government stringency controls have a dynamic effect on internal reserves. In the specific case of Aruba, the results reveal that there is an optimum bandwidth or critical

threshold for government stringency controls that ranges between a GSI of 41 and 44 index points. Rather than a trade-off, the results reveal that safeguarding lives and livelihoods is a prudent balancing act of managing and adapting policy controls and interventions, contingent on both health safety and financial stability considerations.

Continuous (re-)adjustment and (re-)alignment of policy controls are pivotal to economic resilience. In order to maintain adequate reserve levels, the swift and coordinated execution of health, monetary, FX, macroprudential, financial and fiscal policy measures is quintessential in both absorbing economic losses as well as mitigating the adverse effects of these losses. Hereto, accommodative monetary and macroprudential, as well as supportive fiscal policies are key to maintaining financial stability and health safety in the short run. More importantly, the findings of this study underscore the importance of maintaining (pre-crisis) and managing (post-shock) adequate international reserve buffers to strengthen monetary stability and macroeconomic resilience, especially in times of crisis.

The results suggest that, in addition to effective reserve management, a sound and holistic macroeconomic tourism policy framework are quintessential to regenerative tourism and strengthening small island tourism economic resilience. More specifically, strengthening foreign reserves and (re-)building fiscal space, i.e., fiscal consolidation for debt sustainability is integral to post-pandemic economic stability. In the case of Aruba and many other Caribbean SITES, the post-pandemic debt surged to unsustainable levels, thereby depleting fiscal space and raising fiscal risks, which are likely to impose significant pressures on international reserves when liquidity support and loan repayments are due.

Beyond fiscal reforms, structural transformation is critical to foster sustainable and resilient economic development in a post-pandemic Caribbean. In the specific case of Aruba, this structural transformation includes, e.g., (renewable) energy reforms, service export diversification, as well as significant health reforms, and the expansion of digital education and electronic government infrastructures. Likewise, labour market reforms for safeguarding inclusion and income (equality), and maximizing mobility, flexibility, and productivity are called for. As many Caribbean SITES reopen their economies and tourism gradually regains traction, prudence is similarly warranted to manage the sustainable flow of tourism visitors in order to mitigate past perils and risks of overtourism. In fact, the COVID-19 pandemic merely exposed the tourism overdependence of some Caribbean island economies and exacerbated their structural vulnerabilities.

Therefore, akin to the systemic impact of the COVID-19 pandemic, the required reforms should be equally systemic and structural. Considering the likely long-run impact of the pandemic and policy measures, in addition to island idiosyncrasies, it should be recognized there is no 'quick fix' or 'one-size-fits-all' to regenerative tourism and building small island tourism economic resilience. In pursuit of economic resilience and wellbeing in a post-pandemic Caribbean, future research is required to analyze and assess the long-term effects of contextualized government and private sector reforms, as well as community values and behaviours, in response to the current crisis and future economic shocks.

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