

# Fostering Economic Resilience: From Roots to Routes

Centrale Bank van Aruba  
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Fostering Economic Resilience: From Roots to Routes

Edited by Ryan R. Peterson

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## FOREWORD

It is a truism that small islands face significant economic, social, and environmental vulnerabilities. With increasing geopolitical uncertainties, accelerating digital technologies, and mounting ecological fragilities, the quest for economic resilience not only endures but also has become a prime directive for the sustainable development of small island societies. Reflecting on past and present economic development has resulted in a growing acknowledgement that, despite relatively high GDP per capita levels and notwithstanding a multiplicity of international assistance and structural reforms, small island economies continue to experience extreme vulnerabilities with low growth, low productivity, and increasing fiscal, social, and environmental pressures (IMF, 2013; 2017). In fact, when compared to other small island states, Caribbean small island tourism economies have become economically less sustainable and more vulnerable over the past decade (IDB, 2014; IMF, 2017; World Bank, 2015), underscoring a clear and present need to develop and strengthen economic resilience.

At the 2017 High Level Caribbean Forum on “Unleashing Growth and Strengthening Resilience”, the previous IMF Managing Director, Mrs. Christine Lagarde concluded that:

*“Stronger economic growth is the essential foundation for a more resilient Caribbean. It is also a foundation for building defenses. Unfortunately, economic growth in the Caribbean has been low for several decades. This has led to rising social and economic challenges, including poverty, inequality, unemployment, and crime. While many authorities in the Caribbean were successful in their efforts to create a stable macroeconomic environment, growth still remains elusive”* (IMF, 2017).

Caribbean economies need to make a concerted effort to improve several macroeconomic fundamentals, including fiscal deficits and financial sector strains, as well as to eliminate structural impediments, such as high costs of business, limited financial deepening, and social exclusion (IMF, 2017). Similarly, the Inter-American Development Bank emphasizes that the Caribbean needs structural transformation to break through economic ‘sclerosis’ and stagnation (IDB, 2014). Persevering along the path of structural reforms is necessary, yet insufficient to shift from recovery to resilience, transform from stability to sustainability, and lead from an emerging future rather than the established past. The challenge, therefore, is to move from past roots to future routes.

Using the specific case of Aruba, this report presents a series of thematic macroeconomic studies on the resilience of Aruba's economy. The basic questions addressed by this report are: *How resilient is Aruba's economy, when compared to other Caribbean small states? How can Aruba strengthen its economy and foster economic resilience?*

Despite a significant body of research on the economic resilience of small island states in the Caribbean, previous research remains focused largely on independent and Anglo-Saxon small states. The Dutch, non-independent Caribbean has been relatively excluded from comparative studies on economic development and resilience, thus creating a significant void in our understanding of and policies to foster economic resilience. More important, from a political-economic perspective, this knowledge gap oftentimes induces a 'not-invented-here' syndrome, which tends to promulgate the status quo. This report aims to close the gap in previous studies on economic resilience and presents a contemporary macroeconomic research perspective on fostering the economic resilience of Aruba.

The Dutch Caribbean consists of six small island economies with differing subnational jurisdictions in the Kingdom of the Netherlands. Despite the stylized diversity in terms of their political status and cultural nuances, these Dutch island economies share several geo-economic invariants, including, e.g., island geology and small economic size, in tandem with relatively high degrees of economic openness, trade dependency, and export specialization. Consequently, similar to Small Island Developing States (SIDS) in general, the Dutch Caribbean is highly exposed to economic shocks and climate change (IDB, 2014; IMF, 2017; World Bank, 2015), thus requiring significant abilities to foster and strengthen economic resilience.

*The introduction (chapter 1) presents the concept and operational definition of economic resilience.* Beyond the traditional conceptualization of resilience as the ability to absorb shocks and recover from disturbances, this report frames economic resilience from the perspective of adaptability and transformability, thus also emphasizing the ability to anticipate and accelerate economic growth after recovering from economic disruption. Hereto, economic resilience describes the capacity of an economic system to anticipate and adapt in response to both short-term disturbances ('crisis') and long-term changes ('slow-burn') in economic and socio-ecological conditions, while supporting the economy to grow within responsible ecological limits and intergenerational equity.

In general, sound macroeconomic and financial policies leading to improved macroeconomic stability is a fundamental prerequisite for fostering economic resilience. Macroeconomic stability concerns the interaction between an economy's aggregate demand and aggregate supply. If aggregate expenditure moves in equilibrium with aggregate supply, then the economy is characterized by an internal balance (i.e., a sustainable fiscal position), as well as an external balance (i.e., the current account position). Both internal and external balances are influenced by economic, fiscal, and monetary policy, and are key indicators of an economy's resilience.

*In chapter 2, the role of monetary policy in building economic resilience in small open economies is described.*

Prudent management of international reserves and maintenance of an adequate level of reserve assets are essential for withstanding and absorbing external shocks, engendering market stability, and maintaining confidence. Monetary policy and instruments are used as a first-line-of-defense in absorbing and buffering external disturbances. A general discussion on the effectiveness of monetary policy in small open economies is provided, followed by a discussion on the case of Aruba.

*The relevance of fiscal space and policies in fostering economic resilience is addressed in chapter 3.* In tandem with adequate monetary policy, assuring fiscal space and debt sustainability is critical to small open economies that are prone to economic and ecological shocks. Fiscal policies serve as a basic (macroeconomic) buffer to absorb shocks and to manage the costs of post-crisis recovery. Most crucial, sound public finances reflected in prudent fiscal balances are a prerequisite for realizing the Sustainable Development Goals (SDGs) and a sustainable development for Aruba. Sound public finances contribute to credible government policies, macroeconomic and financial stability, and a pro-business and pro-growth climate.

*The dynamics of the external sector and the balance of payments are discussed in chapter 4.* In small open economies, fiscal deficits can lead to external current account deficits, giving rise to the emergence of twin deficits, as imports dominate both public and private consumption. Under a fixed exchange rate regime, a rise in the domestic price level relative to foreign prices leads to the appreciation of the real exchange rate, causing an additional problem in the external sector. In particular, strengthening current and capital accounts provide the basis for reducing economic vulnerabilities by mitigating dependency risks.

*Chapter 5 addresses the importance of productivity and a productive labor force, which are required to strengthen adaptability and flexibility in regenerating economic growth.* Therefore, increasing labor force participation and inclusion, as well as maximizing productive employment and developing human capital

are important means of fostering economic resilience. The state of Aruba's labor market and productivity is presented in this chapter, along with policy guidelines for fostering economic resilience.

*The importance of innovation for transitioning towards new economic growth paths increasingly is recognized as integral to economic resilience and is addressed in chapter 6.* National innovation is regarded as a key driver for sustainable development, and both public and private sectors play important roles. The adoption of renewable energy and digital technologies is presented as two complementary modes of national innovation. Chapter 6 describes the state of renewable energy adoption and the use of digital technologies in Aruba and closes with a discussion of innovation pathways for strengthening economic resilience.

*This report concludes in chapter 7 by presenting several macroeconomic policy guidelines for fostering the economic resilience of Aruba.* Although past policies have focused on restoring and improving the stability and efficiency of Aruba's economy, a clear, urgent, and present need exists to shift and extend (traditional) policies with a strategic focus on building dynamic resilience and new policy pathways. This policy mix, including both the coordination of monetary and fiscal policies, as well as labor reform and innovation policies, is essential in fostering the economic resilience of Aruba and safeguarding sustainable development. In leading from an emerging future, and transitioning towards a resilient, entrepreneurial, knowledge-driven economy, Aruba needs to innovate creatively and collaboratively brave a new future.

With this publication, the Central Bank of Aruba aims to contribute to realizing the much needed transformation to foster economic resilience in Aruba.

*Jeanette R. Semeleer*

*President*

*Aruba, September 2019*



## 1. INTRODUCTION

Ryan R. Peterson

*You never change things by fighting the existing reality.*

*To change something, build a new model that makes the existing model obsolete.*

*R. Buckminster Fuller*

### 1.1 Introduction

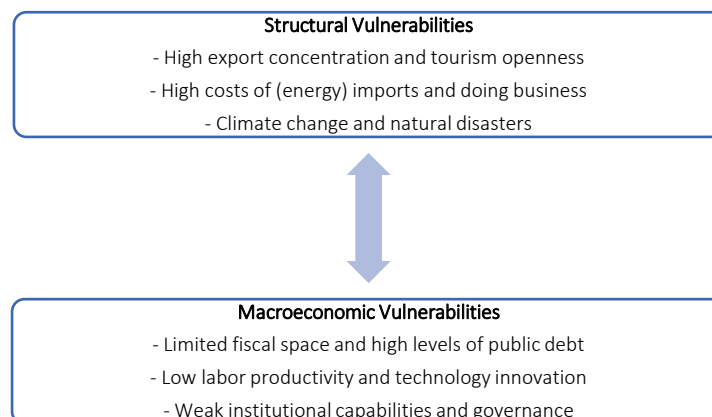
This chapter provides an introduction to the concept of economic resilience and presents an operational definition of economic resilience, with a specific focus on small island economies. The multidimensional nature of economic resilience is discussed, and an integrated model for fostering economic resilience is presented, which serves as a guiding framework throughout the report.

### 1.2 Aruba: A small open economy

The economic characteristics of small states<sup>1</sup> are well-documented and include (a) very high degree of economic openness due to their dependence on exports and imports, mostly because of their small domestic markets and lack of natural resource endowments; (b) high degree of export concentration, due mostly to their small economic size, leading to diversification constraints, and (c) high dependence on strategic imports, such as fuel and food. These characteristics are associated with economic vulnerability as they render a country highly exposed and prone to external shocks (Briguglio et al., 2006). Economic vulnerability has both structural and macroeconomic components as shown in Figure 1.1.

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<sup>1</sup> The study used the standard international classification of Caribbean small states (IMF, 2017; World Bank, 2017). Although Trinidad and Tobago, Jamaica, and Guyana are not small states (by population size), and notwithstanding the fact that Belize and Guyana are not islands (by geological definition), they are included in the list of select Caribbean small (island) states. Therefore, prudence is warranted when drawing any specific island-based conclusions.



*Figure 1.1. Structural and macroeconomic vulnerabilities in Caribbean perspective (IDB, 2014; IMF, 2017).*

In terms of trade openness (ratio of imports and exports to GDP) and tourism concentration (ratio of tourism service exports to GDP), analysis<sup>2</sup> indicates that, comparatively, Aruba is the most vulnerable small open economy in the Caribbean (Table 1.1, Figure 1.2). Measured by (total) exports and imports as percentage of GDP, Aruba scores the highest on trade openness, followed by St. Kitts and Nevis and Belize. Aruba also scores the highest on tourism concentration, followed by Antigua and Barbuda and The Bahamas.

The highly vulnerable economy of Aruba is reflected in its volatile economic growth over the past two decades (see Figure 1.3). Whereas Aruba's real GDP growth averaged 2.0 percent (between 1990 and 2017), the output growth volatility is an estimated 3.8 percent, significantly higher than the rest of the Caribbean, Latin America, and the World economy.

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<sup>2</sup> To provide comparative analysis and a standardized measure of Caribbean small states, throughout this report available country data (CBA, 2018; CBS, 2018; ECLAC, 2018; IMF, 2018; World Bank, 2018) is normalized by using a (min-max) scaling method. The general formula for a min-max of [0, 1] is:  $y = (x - \min_x) / (\max_x - \min_x)$ , where  $x$  is an original value and  $y$  is the normalized value [0, 1].

Table 1.1 Trade Openness and Tourism Concentration (World Bank, 2018; World Tourism & Travel Council, 2018)

	Trade Openness	Tourism Concentration	Economic Vulnerability
	Index	Index	Index
<b>Aruba</b>	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>
Antigua & Barbuda	0.20	0.60	0.40
The Bahamas	0.00	0.48	0.24
Belize	0.53	0.41	0.47
Barbados	0.10	0.39	0.24
Dominica	0.38	0.36	0.37
Grenada	0.48	0.22	0.35
Guyana*	0.37	0.00	0.19
Jamaica	0.03	0.27	0.15
St. Kitts & Nevis	0.55	0.25	0.40
St. Lucia	0.30	0.42	0.36
Trinidad & Tobago	0.26	0.01	0.14
St. Vincent & the Grenadines	0.18	0.19	0.19
Caribbean Small States	0.34	0.35	0.34
Pacific island small states	0.16	0.22	0.19

\*Guyana is not an island state

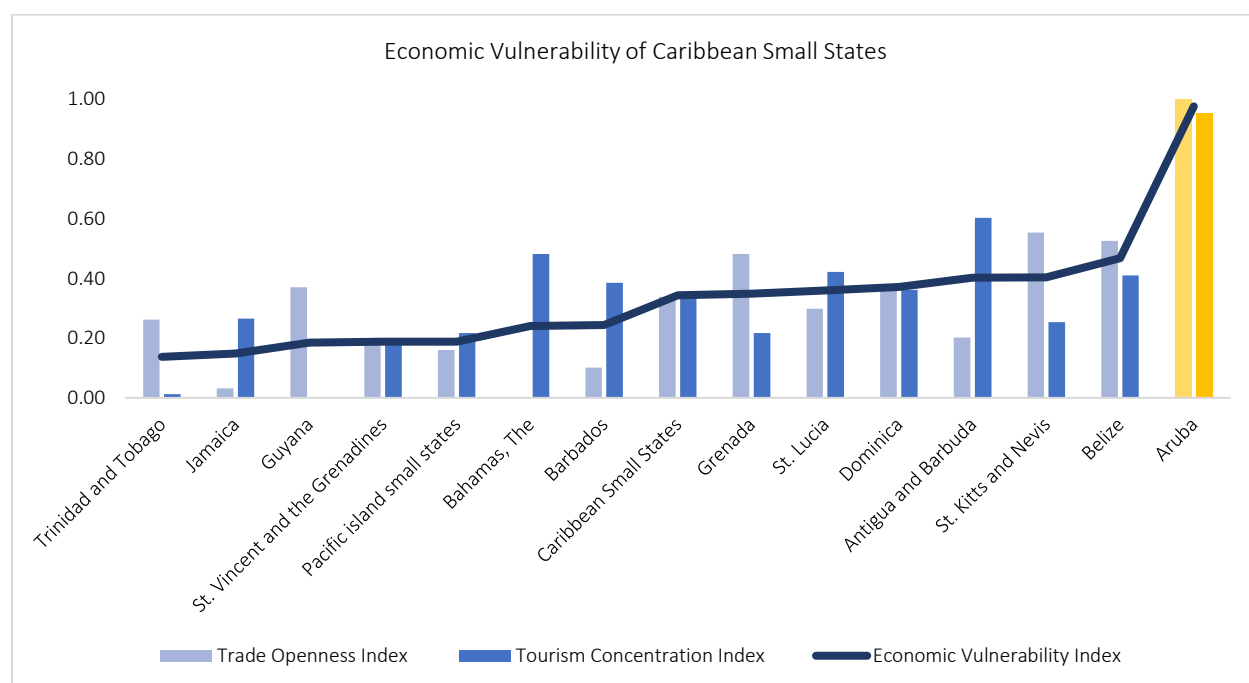


Figure 1.2. Aruba ranked as most vulnerable economy in the Caribbean (World Bank, 2018; World Tourism & Travel Council, 2018).

The confluence of both high trade openness and high tourism concentration, in addition to significant growth volatility, underscore the economic vulnerability of Aruba as a small open economy (see Figure 1.4). Whereas Aruba may be relatively less prone to natural disasters than some other small open economies, its high degree of export concentration and import dependence creates significant economic risks, as witnessed by different economic shocks occurring over the past decades. Within this context, a policy-as-usual approach is detrimental to productivity and prosperity. With public debt growing and economic growth receding, fostering economic resilience is no longer a luxury.

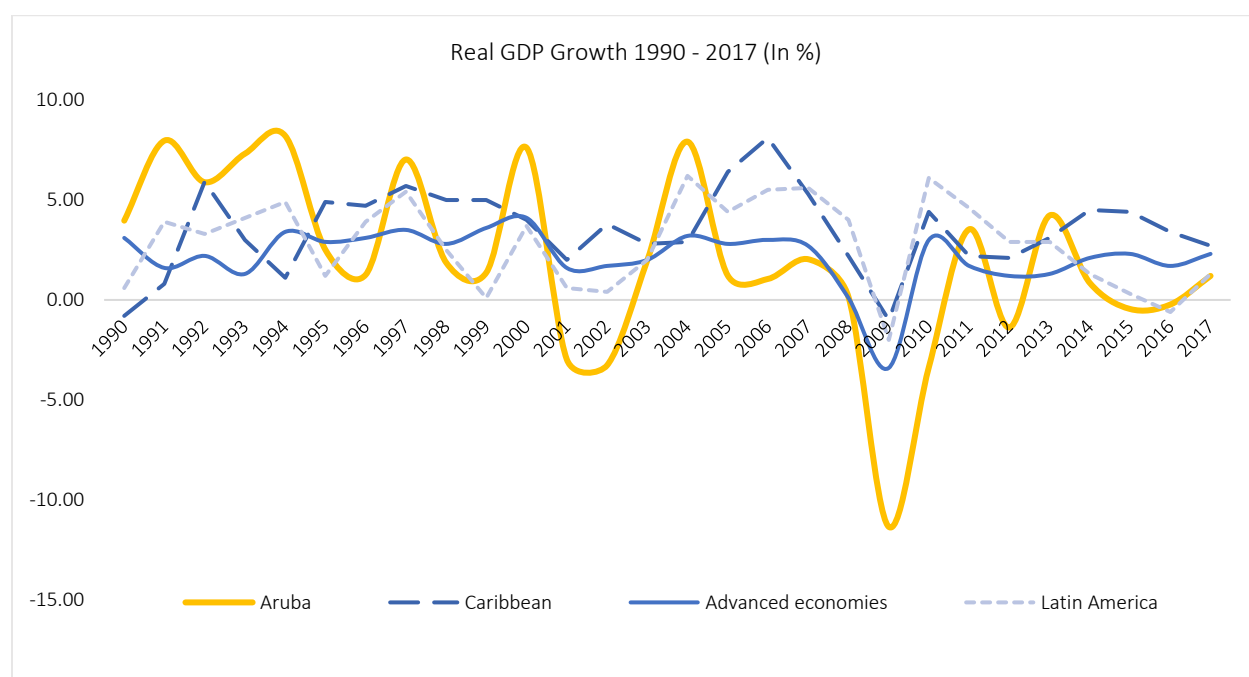


Figure 1.3. Aruba's real GDP growth relative to other economies<sup>3</sup>.

Aruba's historical economic growth trajectory demonstrates a decelerating output in conjunction with increasing volatility. Rising economic vulnerability and volatility beget concerted policy efforts at fostering economic resilience in order to strengthen economic growth and safeguard economic stability amidst global and regional economic shocks.

<sup>3</sup> CBA (2018); IMF (2018).

While Aruba weathered major several economic disturbances in the past and is still recovering from recent shocks, the main question addressed in this study is: *to what extent and how is the Aruban economy able to transform beyond a state of recovery, i.e., not merely absorbing economic shocks and returning to a previous (stable) state but more importantly transition and transform towards new pathways of reinvigorated economic growth?* The pertinent policy question is no longer if economic resilience matters, but rather, *how* to foster and strengthen economic resilience to stimulate new pathways for future economic growth.

Table 1.2 Average real GDP growth and output volatility of select Caribbean Small States 1990-2017 (In %; IMF, 2018).

	Real GDP Growth (%, 1990- 2017)	Output volatility	Real GDP Growth (%, 1990- 1999)	Output volatility	Real GDP Growth (%, 2000- 2007)	Output volatility	Real GDP Growth (%, 2008- 2017e)	Output volatility	Real GDP Growth (%, 2018- 2023f)
<b>Aruba</b>	<b>2.0</b>	<b>3.8</b>	<b>4.7</b>	<b>2.8</b>	<b>1.9</b>	<b>4.2</b>	<b>-0.7</b>	<b>4.3</b>	<b>1.1</b>
Antigua & Barbuda	2.7	4.8	3.5	3.3	5.4	5.3	-0.1	5.7	2.5
The Bahamas	1.2	2.6	2.2	3.8	2.0	1.7	-0.5	2.3	1.8
Barbados	0.8	2.6	0.5	3.6	2.3	2.5	0.1	1.6	0.9
Belize	4.5	3.4	5.9	4.7	5.7	3.8	2.2	1.6	1.8
Dominica	1.8	2.8	2.3	1.6	2.6	3.2	0.5	3.5	2.4
Grenada	2.9	4.6	3.5	3.9	3.9	5.9	1.7	4.0	3.0
Guyana*	3.5	2.8	4.8	4.1	1.7	3.1	3.7	1.2	2.7
Jamaica	0.9	1.5	1.4	1.9	1.6	1.1	-0.1	1.5	2.0
Saint Kitts & Nevis	3.4	3.6	4.3	1.9	3.5	5.3	2.3	3.4	2.9
Saint Lucia	2.3	3.1	3.4	3.5	1.9	3.6	1.6	2.3	2.1
Saint Vincent & the Grenadines	2.5	2.0	3.5	2.5	4.2	2.1	0.2	1.5	2.7
Trinidad & Tobago	4.1	3.4	5.2	3.4	8.2	3.7	-0.3	3.1	1.7
Caribbean	3.5	2.0	3.5	2.4	4.4	2.1	2.8	1.6	3.9
Memorandum item: Pacific Islands	3.7	3.6	4.2	5.2	2.4	2.7	4.4	2.9	3.1

\*Guyana is not an island state

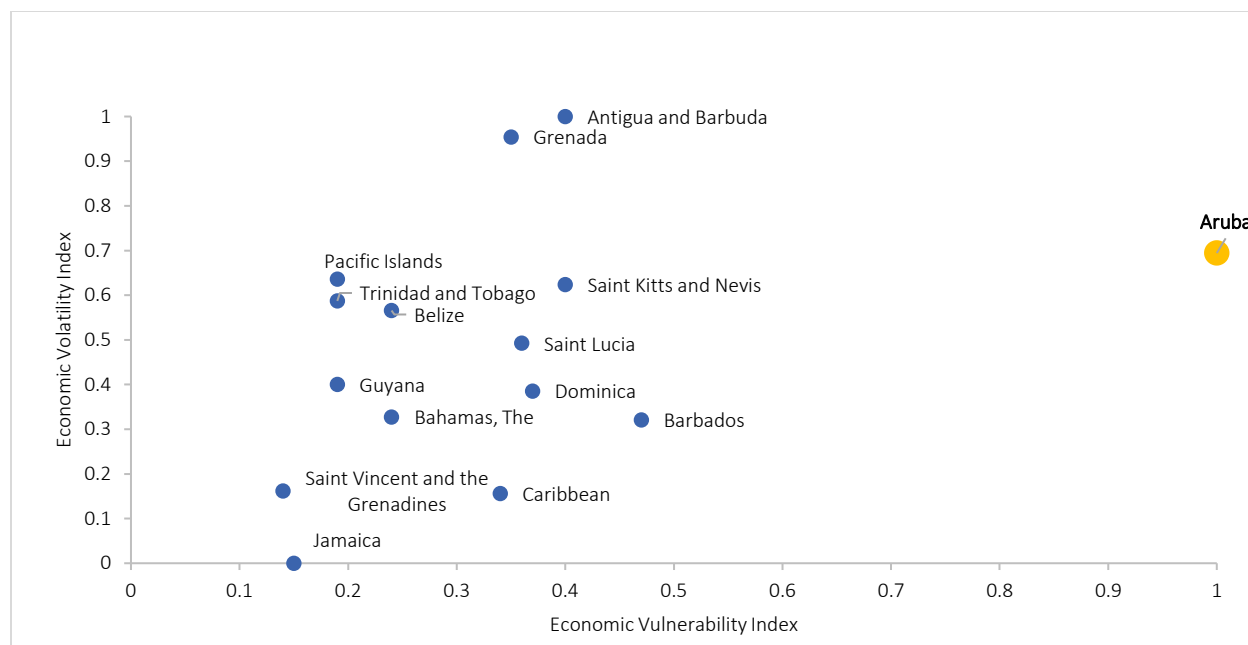


Figure 1.4. Economic vulnerability and volatility of Caribbean small states.<sup>4</sup>

### 1.3 Conceptualizing economic resilience

The concept of economic resilience has a long-standing history in discussions on economic development in the Caribbean.<sup>5</sup> Acknowledging the significant vulnerabilities of small states, the United Nations, the World Bank, and the Commonwealth pioneered several early studies on conceptualizing and measuring the economic resilience of small island developing states.<sup>6</sup> Today, economic resilience is well-established in the policy nomenclature of many international monetary and financial institutions, especially in the wake of the global financial crisis, geo-political tensions, and natural disasters.

Economic resilience has been defined as the ability of an economy to bounce back or recover following an adverse external shock.<sup>7</sup> It is generally conceptualized as the capacity to minimize output losses after an adverse shock has hit the economy<sup>8</sup> or as the set of structural policies for increasing the capacity of averting or recovering from the negative effects of external shocks.<sup>9</sup> Likewise, the International Monetary Fund

<sup>4</sup> CBA (2018); IMF (2017); WB (2018); WTTC (2018).

<sup>5</sup> Benedict (1967).

<sup>6</sup> Briguglio et al. (2006).

<sup>7</sup> Briguglio et al. (2006).

<sup>8</sup> Sondermann (2016).

<sup>9</sup> Zaman & Vasil (2015).

(IMF)<sup>10</sup> distinguishes between *ex-ante* and *ex-post* resilience, emphasizing the importance of creating structural and financial buffers before a shock, as well as post-shock capacity to respond efficiently. Previous studies identify at least three *shock-absorbing* policy instruments for insuring and buffering against adverse shocks and vulnerabilities: (1) monetary policy and reserves, (2) fiscal policy and debt sustainability, and (3) external sector and balance of payments.<sup>11</sup> Beyond averting or absorbing economic shocks, the concept of economic resilience also entails (post-shock) economic adaptability and regeneration beyond the initial (pre-shock) equilibrium (see Figure 1.5).

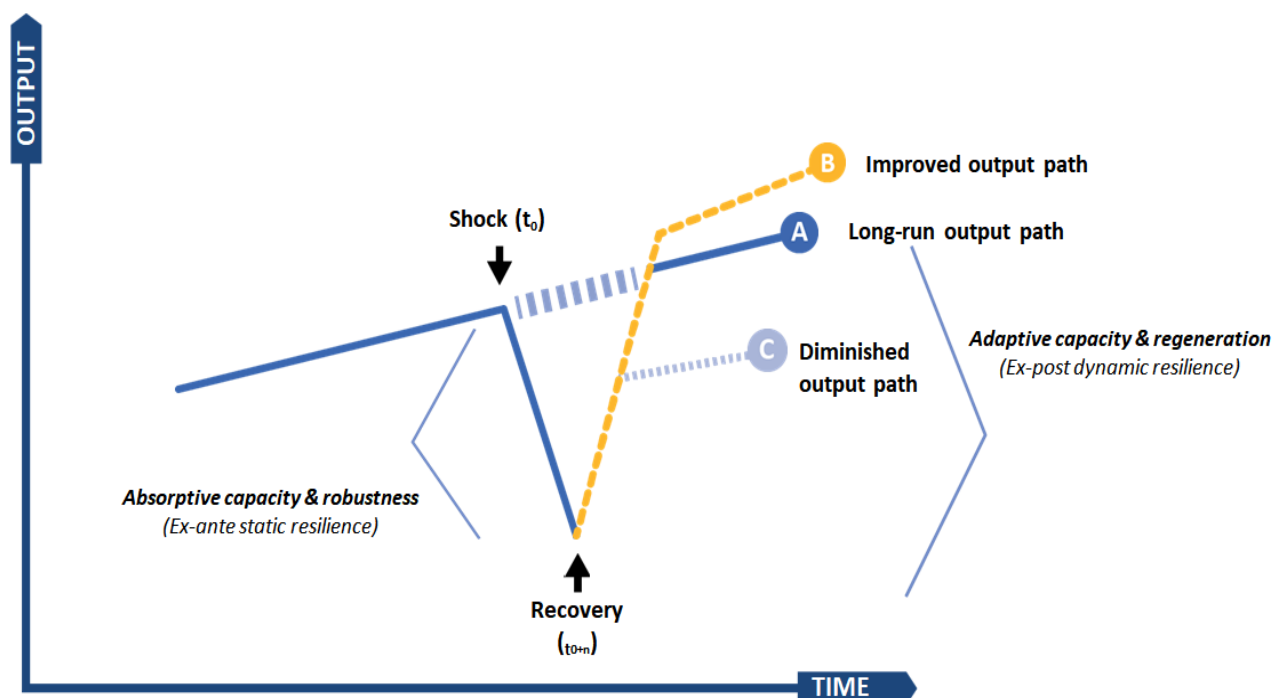


Figure 1.5. Stylized scenarios of economic resilience.<sup>12</sup>

<sup>10</sup> Cebotari et al. (2019).

<sup>11</sup> Briguglio et al. (2006).

<sup>12</sup> Adapted from Simmie & Martin (2009).

Research indicates, however, that traditional economic vulnerability-resilience frameworks do not adequately meet the risks and impacts of the increasing frequency and severity of economic shocks as witnessed over the past decade.<sup>13</sup> Post financial crisis developments and climate change raise important questions about the systemic character of economic (after-) shocks, and thus the requisite structural resilience of institutional adaptation, learning, and innovation.<sup>14</sup>

More important, post-shock resilience requires efficient and concerted response of multiple institutions in the wake of economic crisis and natural disasters.<sup>15</sup> The World Bank (WB) distinguishes between two components of economic resilience: (1) *static resilience*, which is the ability to limit the magnitude of immediate production losses for a given amount of asset losses, and (2) *dynamic resilience*, which is the ability to reconstruct and strengthen production and output after the initial shock.<sup>16</sup> While the former describes a metaphor of robustness and ‘bouncing back’ (to an initial path of long-run development; scenario A in Figure 1.5), the latter is akin to ‘bouncing forward’ and regeneration towards a relatively higher level of economic production and output (scenario B in Figure 1.5). Alternatively, economies may experience economic hysteresis,<sup>17</sup> i.e., get locked into lower and diminished growth paths after experiencing significant shocks, without the capacity to recover completely (scenario C in Figure 1.5).

Static resilience is based on the analysis of economic balances (equilibrium) and describes the ability of an economic system to return to the pre-existing state by absorbing, buffering, or withstanding a disturbance. In contrast, dynamic resilience is based on the concept of evolutionary and complex adaptive systems, and refers to the ability to adjust and change a system *in response to* or *in anticipation of* growing pressures, increasing shocks, and risks.<sup>18</sup> Innovation and experimentation are integral to (post-shock) adaptation and acceleration for strengthening economic resilience. Previous studies identify at least two distinct policy instruments for fostering dynamic economic resilience: (1) labor market efficiency and productivity, and (2) technology adoption and innovation.<sup>19</sup>

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<sup>13</sup> Seth & Ragab (2012).

<sup>14</sup> Acemoglu & Robinson (2010).

<sup>15</sup> Cebotari et al. (2019).

<sup>16</sup> Hallegate (2014).

<sup>17</sup> Simmie & Martin (2009).

<sup>18</sup> Holling (1973); Simmie & Martin (2009).

<sup>19</sup> Briguglio et al. (2006); IDB (2014); Peterson (2016); World Bank (2017).



*Economic resilience describes (1) the capacity of an economic system to return to a previous (optimum) state of balance without fundamentally altering the structure of the system; and (2) the response and reaction capacity of the system to external or internal shocks in (3) regenerating a new balance and economic growth path.*

In summary, economic resilience describes (1) the capacity of an economic system to return to a previous (optimum) state of balance without fundamentally altering the structure of the system; (2) the response and reaction capacity of the system to external or internal shocks in (3) regenerating a new balance and economic growth path. Institutional learning and change are fundamental differentiators between static and dynamic resilience, and depict the ability of economic agents to anticipate change and shape future economic production.<sup>20</sup> Although the difference between static and dynamic economic resilience is gradual, the capacity of institutions to reassess, redirect, and redesign new economic capabilities is quintessential. Absent this institutional capability, economies tend to get locked into old policies and captured by existing structures.<sup>21</sup>

The combination of these different conceptualizations of economic resilience yields four different dimensions of economic resilience with complementary macroeconomic policies and instruments (see Figure 1.6). Building on previous conceptualizations and existing measurements of economic resilience, this study incorporates the different dimensions of economic resilience and employs multiple indicators to provide a holistic perspective of macroeconomic resilience in Aruba.<sup>22</sup>

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<sup>20</sup> Gunderson & Holling (2002); Martin (2012).

<sup>21</sup> Acemoglu & Robinson (2010).

<sup>22</sup> Whereas other (non-economic) indicators (e.g., social, political, and environmental) are recognized as relevant to economic development and resilience, this report focuses on the macroeconomic fundamentals of economic resilience based upon available national and regional economic indicators and data up to 2018. The results and conclusions of this study are, thus, confined to contemporary macroeconomic challenges and policies in select Caribbean small states.

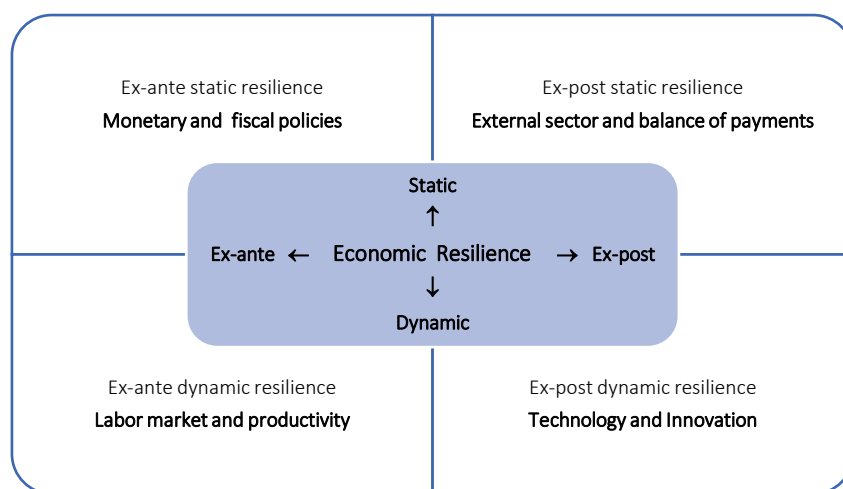


Figure 1.6. Conceptualization of macroeconomic resilience.

## 1.4 Structure of the report

This report is organized according to the different dimensions of economic resilience (see Figure 1.7). We conclude with a summary and discussion of the main findings, and present a compass of policy guidelines for fostering economic resilience from the roots to routes.



Figure 1.7. Outline of this report.

## 2. MONETARY POLICY AND INSTRUMENTS

Jos Smeehuijzen and Calix Ashby

### 2.1 Introduction

Monetary policy refers to the actions undertaken by a central bank to influence the availability and cost of money and credit to help promote national economic goals. It is used to achieve several objectives, including economic growth, full and stable employment, exchange rate stability, and price stability.

The basic guiding principles of standard monetary policy are based largely on experiences of developed countries. Mishkin<sup>23</sup> identifies nine basic scientific principles for the conduct of monetary policy. These guiding principles can be summarized as follows: (1) price stability should be the main monetary policy objective, (2) inflation targeting is the monetary policy regime implemented by most central banks in the larger economies, (3) the use of indirect monetary policy instruments is recommended, and (4) central independence, in particular instrument independence, is an important institutional device for central banks to achieve their policy objectives.<sup>24</sup>

Nevertheless, these principles generally are not valid for small open economies in the Caribbean. Many of these economies have exchange rate stability as the ultimate goal of monetary policy with the (stable) exchange rate as an intermediate target of their monetary policy. Caribbean monetary authorities rely primarily on direct instruments in the conduct of their monetary policy, although a shift toward the use of indirect instruments has been observed. The focus on exchange rate stability and exchange rate targeting implies that these countries lose the possibility of using monetary policy for stabilization purposes. However, the majority of these countries use capital controls to retain some control over the domestic money supply to conduct independent monetary policy, which entails the use of monetary policy for domestic objectives such as domestic inflation.

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<sup>23</sup> Mishkin (2011), *Monetary Policy Strategy: Lessons from the Crisis* (NBER Working Paper 16755). Cambridge: National Bureau of Economic Research.

<sup>24</sup> For an extensive discussion, see Pereira (2018), *Small and Smart? An Exploratory Analysis of Economic Institutional Choices of Small Countries and Territories in the Caribbean*. Groningen: University of Groningen, SOM Research School, pp. 61-81. This introduction is based on this discussion.

The small size constraint seems to have been decisive for the exchange rate regime choice. Because these small economies are price takers and a large part of their inflation is being imported, it makes no sense for them to pursue a price stability objective that is largely not in the hands of the central banks. Other factors relevant for their exchange rate choice are their high degree of trade openness, the required confidence in their currency, and their concentration of trade settled in the US dollar.

This chapter focuses on the role of monetary policy in building economic resilience in small open economies such as Aruba. It starts with a general discussion of the theory on the effectiveness of monetary policy in these economies, including some relevant country studies. The focus then shifts towards Aruba. Aruba's monetary instruments and policies are described including cross-country comparisons. Finally, the results of a recent study on Aruba's vulnerability and resiliency are summarized and recommendations presented.

## **2.2 Monetary policy and economic resilience**

Monetary policy as a tool for strengthening resiliency and/or making an economy less vulnerable to economic shocks remains largely underexposed in existing economic studies. The Bank of International Settlements (BIS) recently stated that there is global consensus that monetary policy alone cannot lead to balanced growth and that the limitations of these policies have become more evident.<sup>25</sup> In this respect, the BIS argues for a macro-financial stability framework, which accounts for both aspects of resilience, i.e., the absorption of exogenous shocks and the ability to tackle the financial cycle head on. In this framework, prudential, monetary, and fiscal policies should complement each other in systematically leaning against the financial cycle. Previous studies on economic resilience indicate that monetary policy plays an important, yet indirect role in maintaining macroeconomic stability as a reserve buffer to external shocks.<sup>26</sup> Likewise, international monetary authorities and central banks view monetary policy as a first line of absorbing exogenous shocks, and thus a critical policy instrument for withstanding economic disturbances.

The implementation of monetary policies depends heavily on country-specific features, where the influence of a central bank in a small open economy is limited, especially regarding the influence of borrowing costs and liquidity conditions. Increasing the policy rate in such an economy ultimately leads to the attraction of further capital flows and raises the risk-taking channel of exchange rates. These outcomes

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<sup>25</sup> BIS (2016), *Economic Resilience: A Financial Perspective*, p. 12; also G20 Leaders' Communique Hangzhou Summit (2016).

<sup>26</sup> Briguglio et al. (2006); Mwase (2012).

are caused by a narrowing of domestic currency liquidity conditions and result in a currency appreciation. In this kind of economy, it would be advisable to focus on macroprudential measures, foreign exchange intervention, and fiscal policies.

At the beginning of this millennium, Worrell noted the existence of a wide consensus that monetary policy is ineffective in small open economies with fixed exchange rates and that in such cases, any displacement of monetary equilibrium results in capital flows rather than changes in expenditure, even in the presence of capital controls.<sup>27</sup> Jayaraman has affirmed that the role of monetary policy in small, open economies under fixed exchange rate regimes is generally limited. Furthermore, the monetary transmission mechanism has been observed as weak. As a result, fiscal policy increasingly has been relied upon as a tool for development.<sup>28</sup>

Only a handful of case studies exist on monetary policy and its influence on economic resiliency in small island states. The only study known in the Caribbean is Barbados.<sup>29</sup> The study concluded that when battling the negative effects of a balance of payments crisis in 1991/1992, monetary policy played only a small role in the adjustment process and that the only monetary measure with a notable effect was a temporary international credit standstill in Barbados. Nevertheless, the central bank played a vital role in advising Barbados on fiscal policy, providing public information, and reconciling fiscal and monetary policy with economic projections.<sup>30</sup>

Other small island studies are mainly from islands in the Indian Ocean and the Pacific. Studies in Vanuatu, Mauritius, Tonga, and Fiji (all islands with a fixed exchange rate regime) conclude that the effectiveness of a monetary policy transmission mechanism is limited when money and capital markets are underdeveloped with limited financial assets.<sup>31</sup> Furthermore, macroeconomic stability cannot be achieved by monetary policy alone; prudent management of fiscal affairs by the government also is required.<sup>32</sup>

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<sup>27</sup> Worrell (2000), *Monetary and Fiscal Coordination in Small Open Economies*, IMF Working Paper WP/00/56.

<sup>28</sup> Jayaraman (2006), *Macroeconomic Reform and Resilience Building in Small States*. In: Briguglio (ed.) - Building the Economic Resilience of Small States.

<sup>29</sup> Worrell (2003), *Economic Resilience with an Exchange Rate Peg: The Barbados Experience, 1985-2000*, IMF Working Paper, WP/03/168.

<sup>30</sup> Worrell (2003), *Economic Resilience with an Exchange Rate Peg: The Barbados Experience, 1985-2000*, IMF Working Paper, WP/03/168.

<sup>31</sup> Jayaraman, Choong (2008), *Channels of Monetary Policy Transmission Mechanism in Pacific Island Countries. A Study of Fiji: 1970-2006*. University of South Pacific, Working Paper 2008/18.

<sup>32</sup> Jayaraman (2009), *Monetary Policy Response of Pacific Island Countries to Global Economic Downturn*. University of South Pacific, Working Paper 2009/06.

It can be concluded that according to the existing theory and the (sparse) number of case studies that monetary policy can play only a supporting role in fostering economic resiliency. A sound fiscal policy is, however, a necessary condition for attaining this goal.

## **2.3 Monetary policy instruments of Aruba**

The Central Bank of Aruba (CBA) currently determines the monetary policy with the aim of maintaining the stability of the value of the Aruban florin. Stability in this context refers to a stable development of domestic prices (internal price stability) and the maintenance of the purchasing power of the Aruban florin vis-à-vis the U.S. dollar (external price stability). Upon attaining a Status Aparte in 1986, the Aruban florin was introduced as the domestic currency with an exchange rate set at Afl. 1.79 with the U.S. dollar. The former currency, the Netherlands Antillean guilder, had a fixed exchange rate of 1.79 with the U.S. dollar; so this was a practical decision. The decision meant that the monetary transition would be smooth and without measurable effects on inflation. The monetary policy of the CBA is geared primarily towards the activities of the commercial banking sector, which can influence the money supply by granting credit, supported by foreign exchange policy instruments, including capital controls.

### Advance facility

The advance facility exists to meet the banks' credit requirements. Banks are entitled to make use of this facility under condition of pledging security or collateral. The advance has to be repaid before the maturity of any collateral item expires. The CBA regularly publishes the advance rate charged to commercial banks. However, because commercial banks historically have had high levels of liquidity, they have had little need to access the CBA's advance facility. In fact, the advance facility has not been used since 1997. The height of the advance rate has no direct effect on market interest rates. Currently, its use as an indicator of economic development is virtually nonexistent as the advance rate has remained unchanged at 1.0 percent since October 2010. The advance rate determines the legal interest rate (the interest rate that can be charged in case of default of payment), which is 2 percentage points higher.

### Capital controls

Foreign exchange transactions with nonresidents are limited by certain conditions, regulations or provisions. Other important elements of the capital control arrangements are the cap on the level of net foreign assets the commercial banks may hold (the B9 arrangement) and the obligation of institutional investors to invest a certain part of their funds locally (the 40-60 investment rule). The amount to be invested in Aruba is related to the total liabilities of the institution concerned.

### Credit ceilings

The CBA tightened its monetary policy in September 1988 by introducing credit ceilings to the commercial banks in an effort to curb the surging imports and the accompanying decline in international reserves. Credit growth initially was set at a maximum of 5 percent on a half-year basis and was reviewed annually. The growth restriction for 1989 was set at 15 percent, and was gradually reduced to limitations of 3 to 7 percent. The system of direct credit control remained in place for almost a decade. Eventually, credit growth ceilings were suspended in April 1999 and replaced by the use of moral suasion in which the commercial banks were persuaded to remain within the credit ceiling, while regular bilateral discussions about the specific conditions and interests of the individual institutions took place. The credit ceiling system was abandoned in 2009.

### Monetary cash reserve and reserve requirement

In October 1992, an interest-bearing monetary cash reserve requirement was introduced as a first step towards a more market-oriented monetary policy. Under this directive, commercial banks were obligated to deposit 5 percent of their short-term liabilities at the CBA as a supplement to prudential liquidity requirements. The requirement was raised in four steps (1995, 1998, 2004, and 2006) to 9.5 percent, including a penalty clause in case of shortfalls. The monetary cash reserve was replaced by the reserve requirement in July 2009. Under the new reserve requirement, the commercial banks are still required to deposit funds at the CBA, but now these deposits are unremunerated and with a different rate calculation. In 2010, the reserve requirement was raised from 9.5 to 11 percent, and, subsequently, from 11 to 12 percent in 2019.

### Certificates of deposits

In 2003, the CBA introduced certificates of deposits (CDs) with the intention of pursuing a more market-oriented monetary policy. CDs are negotiable registered instruments with a certain maturity and interest rate. Their purpose is to gradually create an interbank money market through which the CBA can influence the liquidity position of commercial banks and steer the short-term interest rate via the purchase and sale of the CDs. In this way, the CBA can exert an indirect influence on the credit potential of the commercial banks and, thereby, on the spending of the economic subjects. The CDs can be used as a complementary instrument to the reserve requirement. By 2005, the CBA discontinued the use of CDs due to a limited interest by the commercial banks.

### Towards a more dynamic monetary policy

The aim of monetary policy has remained unchanged over the years, i.e., maintaining the fixed exchange regime with the U.S. dollar. Nevertheless, the monetary policy instruments of the CBA have been adapted. The most significant change was the move away from a set of direct instruments to indirect instruments of monetary policy in 2009. This move entailed the elimination of the credit ceiling, meaning that the commercial banks were no longer restricted to a maximum level of credit provision. Moreover, monetary policy became more dynamic as the rate of the policy instruments could be amended on a monthly basis, instead of setting annual targets for credit growth, which was the main monetary policy instrument for well over two decades.

In May 2010, following its move towards indirect monetary policy tools, the CBA established a Monetary Policy Committee (MPC) to formulate its policy stance. Timely and regular communication of CBA's policy stance is regarded as a factor conducive to providing transparency and accountability to the general public. To this end, the MPC aims to disseminate its policy decisions on a regular basis to policymakers and the general public. The MPC monitors the developments in economic and monetary fundamentals on a monthly basis, including trends in and forecasts of inflation, net foreign assets, banking sector credit, bank liquidity, and other important economic developments.



## 2.4 Operational target of monetary policy

The operational target of an adequate level of foreign exchange reserves is monitored by comparing the level of the net foreign assets of the monetary sector against current account payments. The traditional benchmark formulated by the IMF, a 3-month cover of current account payments (12-month average), currently is readily met: the actual coverage period is approximately 5.0 months (see Figure 2.1).

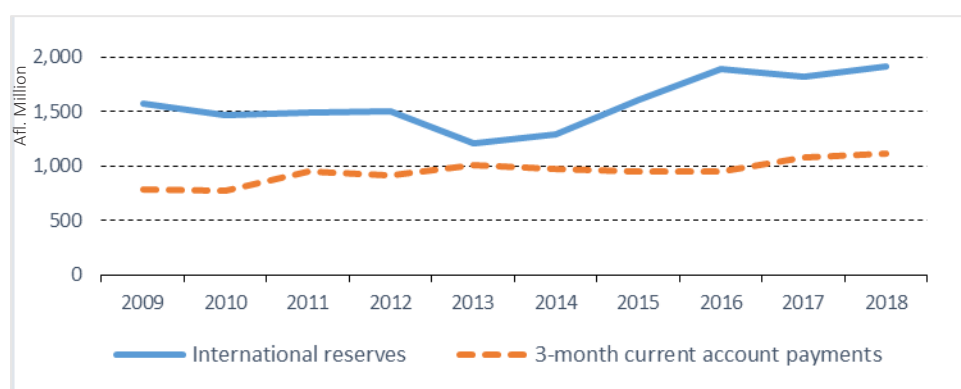


Figure 2.1. International reserves versus the current account coverage benchmark.

In September 2012, the CBA strengthened its framework to monitor international reserves. A multi-tier monitoring system was introduced whereby different thresholds of international reserves are set and followed. These are 100 percent of short-term debt at remaining maturity (known as the Greenspan-Guidotti rule), the expanded Greenspan-Guidotti rule, which also includes the current account balance, and 20 percent of broad money coverage. Other indicators considered by the CBA are the 12-month inflation rate (on average 1.3 percent since 2008), credit growth, GDP forecast, and liquidity in the banking sector (see Figure 2.2).

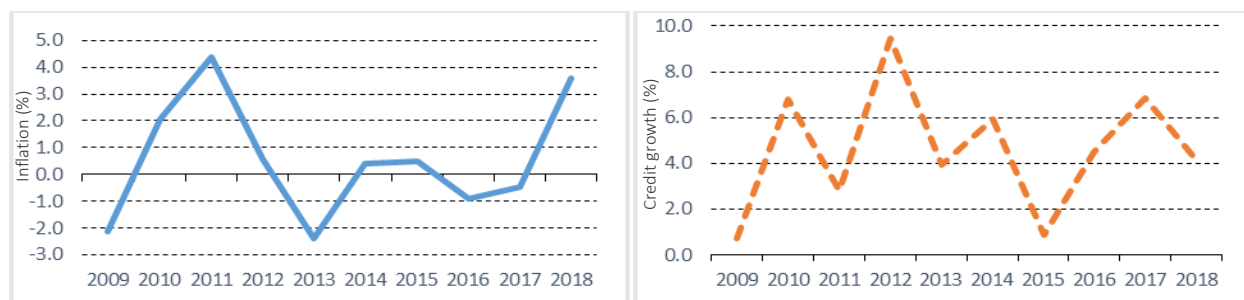


Figure 2.2. Inflation and credit growth (Aruba, 2009-2018).

In 2017, the IMF introduced a risk-based reserve benchmark, i.e., the IMF Reserve Adequacy (ARA) metric.<sup>33</sup> This metric broadens the analytical basis for determining the level of reserves needed for precautionary purposes. While traditional measures of reserve adequacy focus on a particular set of potential balance of payment risks, the ARA metric was designed to reflect a broader range of potential pressures, risks, and shocks. Specifically, it covers:

- Export earnings to reflect the potential loss from a 10 percent drop in external demand or a terms of trade shock;
- Broad money to represent a resident capital flight risk of 10 percent (5 percent with strict capital controls);
- Debt and equity liabilities to account for external liability stocks of 30 percent for short term and 20 percent for longer term debt.

Applying this formula, Aruba's minimum reserve adequacy slowly increased in the last decade towards the lower boundary (see Figure 2.3). At the end of 2017, Aruba's reserve adequacy amounted to Afl. 1,648 million, which was close to 100 percent, if considering a 5 percent broad money coefficient. However, when applying a 10 percent coefficient, Aruba's reserve adequacy falls below the threshold. A ratio between 100 and 150 is recommended by the IMF, with lower ratios considered as carrying a relatively higher risk.

<sup>33</sup> IMF (2013), *Assessing Reserve Adequacy – Further Considerations*. IMF Policy Paper, November.

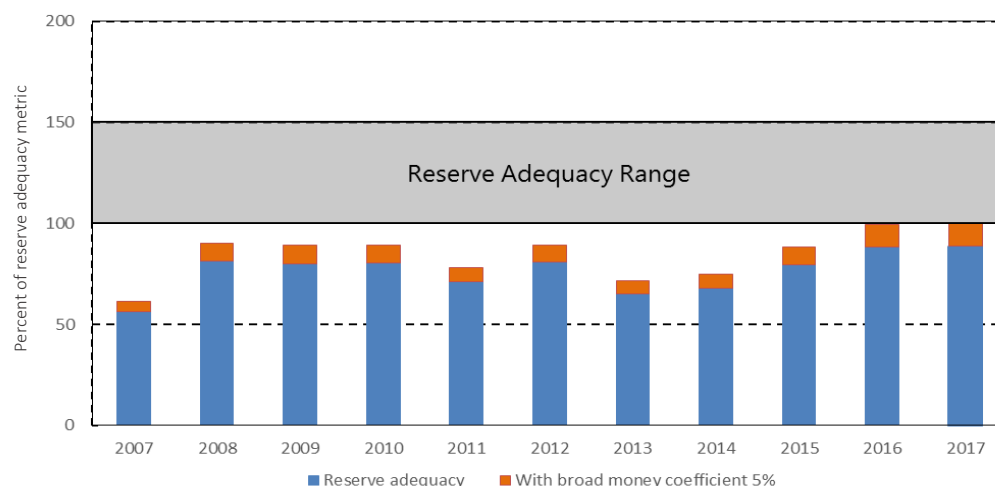


Figure 2.3. Reserve adequacy of Aruba (2007-2017).

When benchmarking Aruba's reserve adequacy among select Caribbean economies, the results indicate that Aruba's reserves are below the required threshold and the Caribbean average (see Figure 2.4). The findings suggest that (larger) commodity-based economies (Guyana and Jamaica) and more diversified economies with sustainable debt levels (Grenada, St Kitts and Nevis, and St Vincent and the Grenadines) enjoy reserve adequacy.

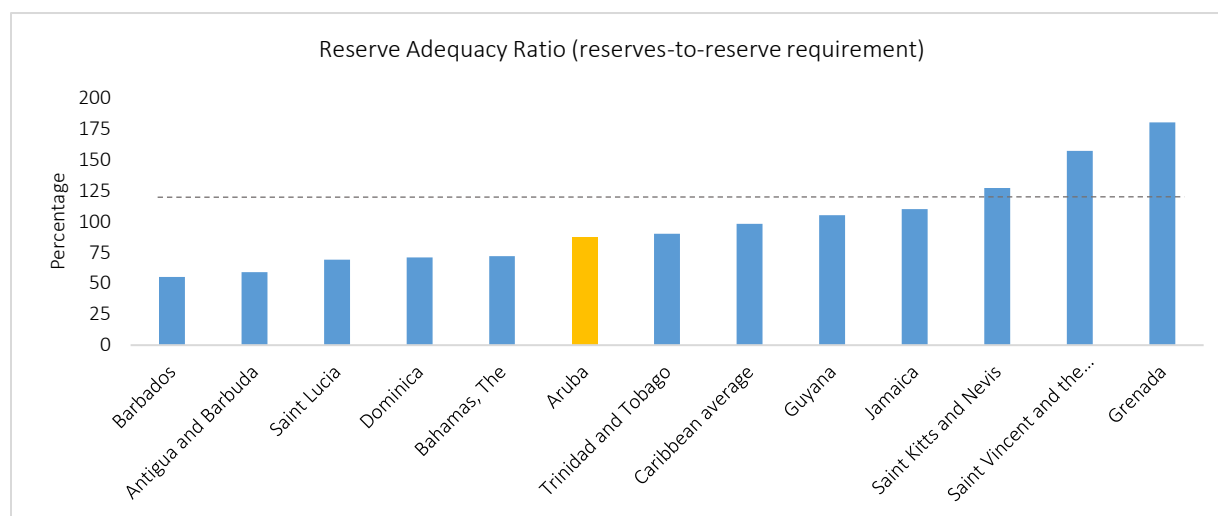


Figure 2.4. Benchmarking reserve adequacy in select Caribbean economies.<sup>34</sup>

<sup>34</sup> IMF (2017).

## 2.5 Aruba's financial and fiscal development

Previous studies indicate that relative to independent states, sub-national island jurisdictions have more successfully restructured their economies, most likely due to stronger legal frameworks and financial development.<sup>35</sup> Whereas Dominica, Antigua & Barbuda, Grenada, and Barbados are all independent countries, Aruba is part of the Kingdom of the Netherlands. Generally, such linkage results in dependent states being more modern as this dependency is often conducive to better institutions, stronger economic governance, and a more sound financial sector.<sup>36</sup>

The broad money (M2) to GDP ratio provides a proxy indicator for the performance of financial development within a country. Financial development contributes to economic growth, where countries with better-developed financial systems have been shown to grow at a faster rate over longer periods of time. Analysis reveals that the broad money to GDP ratio for Aruba noted a steady increase from 1986 to 2017. Various other Caribbean countries (Grenada, Antigua & Barbuda, Dominica, and Barbados) registered similar expansions of 40 to 80 percent during this period. Likewise, over the past decades, Aruba's reserve demand and monetary coverage also have risen steadily, albeit at a slower pace (see Figure 2.5).

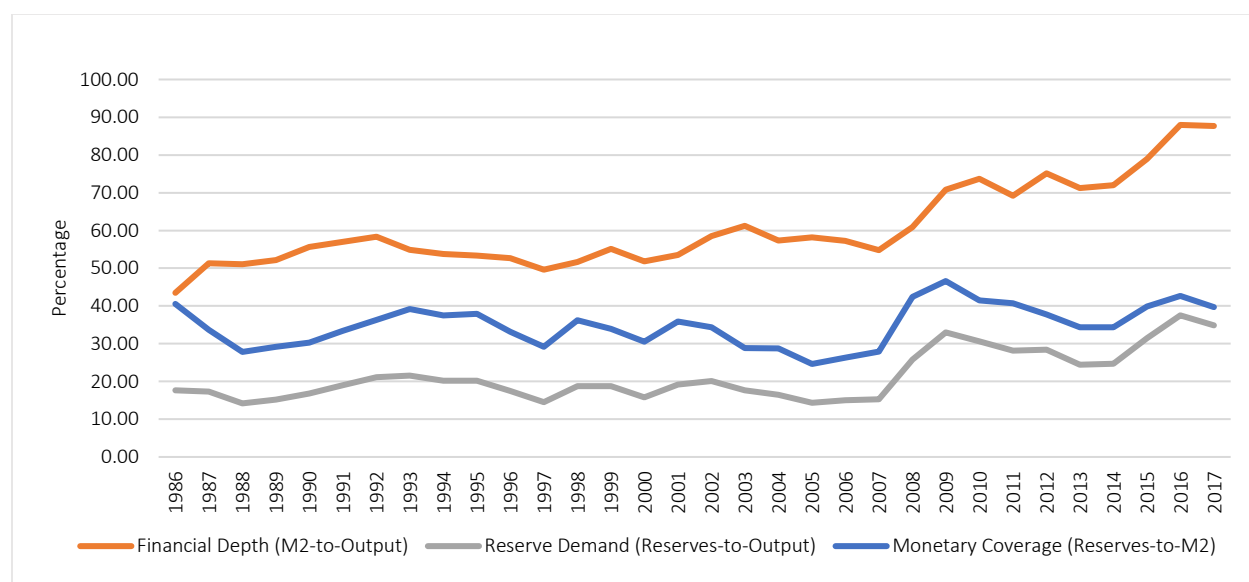


Figure 2.5. Financial depth, reserve demand, and monetary coverage (Aruba, 1986-2017).

<sup>35</sup> McElroy & Sanborn (2005); Pereira (2018).

<sup>36</sup> Pereira (2018).

The coordination of monetary and fiscal policies is fundamental to safeguarding macroeconomic stability and thereto, fostering (static) economic resilience. The general consensus in the literature is that imprudent fiscal policy impedes central banks from pursuing their objectives. Unsustainable government finances could lead to a situation in which fiscal policy potentially interferes with monetary policy actions.

Pereira<sup>37</sup> investigated the ability of central banks in the several Caribbean small open economies to achieve their monetary policy objectives supported by fiscal policy institutions. The findings indicate that in Caribbean countries, including Aruba, fiscal policy has not been supportive of monetary policy in achieving its objectives. This finding is supported by the fact that many Caribbean central banks in these countries - with the exception of Aruba - have in general provided central bank lending to the government, thereby accommodating fiscal deficits. In the case of Aruba, fiscal policies are the primary force influencing reserve developments and, thus, the level of reserve adequacy.

## **2.6 Conclusions**

Monetary policy is essential to maintaining macroeconomic stability. Consequently, monetary policy and policy instruments play an important, albeit indirect role in fostering economic resilience. In the case of small open economies, maintaining adequate levels of reserves is a primary buffer against external shocks and other adverse developments. It is a first line of absorbing exogenous shocks, and provides an important policy tool for maintaining macroeconomic stability and supporting economic recovery. In terms of fostering economic resilience, the findings show that Aruba's monetary policy has played a significant role in strengthening macroeconomic fundamentals.

The results confirm that whereas Aruba is highly vulnerable to economic shocks, reserves have remained relatively adequate over time, with suitable reserve demands and monetary coverage. However, recent fiscal and trade developments raise significant questions as to future policies for maintaining reserve adequacy in fostering economic resilience. The confluence of a high debt burden and import dependency is conducive to amplified economic vulnerabilities, and thus place pressure on monetary policy and reserve adequacy.

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<sup>37</sup> Pereira (2018), *Small and Smart? An Exploratory Analysis of Economic Institutional Choices Of Small Countries And Territories In The Caribbean*. Groningen: University of Groningen, SOM Research School.

An effective monetary transmission mechanism depends on actively using different (direct and indirect) monetary instruments with the aim of mitigating excess liquidity. Thus, the reactivation of the issuance of certificates of deposits should be considered, in addition to generating new sources of net foreign assets (export diversification), and eventually further increasing the reserve requirement in a gradual manner when needed. While maintaining adequate reserves is necessary and required, it is an insufficient condition for fostering economic resilience.

More important, the coordination between monetary and fiscal policy with regard to the (macroeconomic) policy objectives is essential, particularly in the case of Aruba. Despite its importance and relevance, monetary policy can play only a supporting role towards economic resilience. As fiscal prudence and policy remain key, developing the requisite fiscal (institutional) capabilities as well as improving fiscal space are prime directives.

### 3. FISCAL SPACE AND TAX BURDEN

Elmelynn Croes and Calix Ashby

#### 3.1 Introduction

Sound public finances reflected in prudent fiscal balances and supportable debt position are a prerequisite for fostering economic resilience. They provide the necessary structural and financial resilience to absorb and address economic shocks in a timely and adequate way. Prudent fiscal policy contributes to credible government policies, macroeconomic and financial stability, and a pro-business and pro-growth climate. Prudent fiscal policy also is essential to properly manage future pressures on the public finances, such as population ageing and rising public debt, in addition to safeguarding sustainable development.<sup>38</sup>

A review of Aruba's fiscal track record reveals that financial deficits have been recorded nearly every year since the eve of Status Aparte and are structurally rooted within the public finance system. Government debt levels have risen significantly over the past decade with decreasing levels of debt sustainability, thus reducing the fiscal space for absorbing economic shocks and government discretionary spending (see Figure 3.1).

Economic (after-) shocks, stagnant economic growth, and persistent fiscal deficits have driven debt from less than 40 percent of GDP (in 2000) to well over 75 percent (in 2018), thereby surpassing Aruba's critical debt thresholds as a small open economy.<sup>39</sup> Over the past decade, Aruba experienced significant fiscal deterioration as a result of the global financial crisis, the suspension of refining activities, and rapidly expanding social service provisions, in addition to unsustainable fiscal policies. A high debt level impairs the government's ability to respond effectively to future economic shocks and adverse events, thereby exacerbating the economy's vulnerability to shocks, such as interest rate hikes and economic contractions. Structural tax reform is necessary to reduce the current debt level and attain more sustainable government finances, even more so in light of the increasing economic vulnerability.

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<sup>38</sup> Centrale Bank van Aruba (2013).

<sup>39</sup> Debt thresholds for small island developing states are set between 40 and 60 percent of GDP.

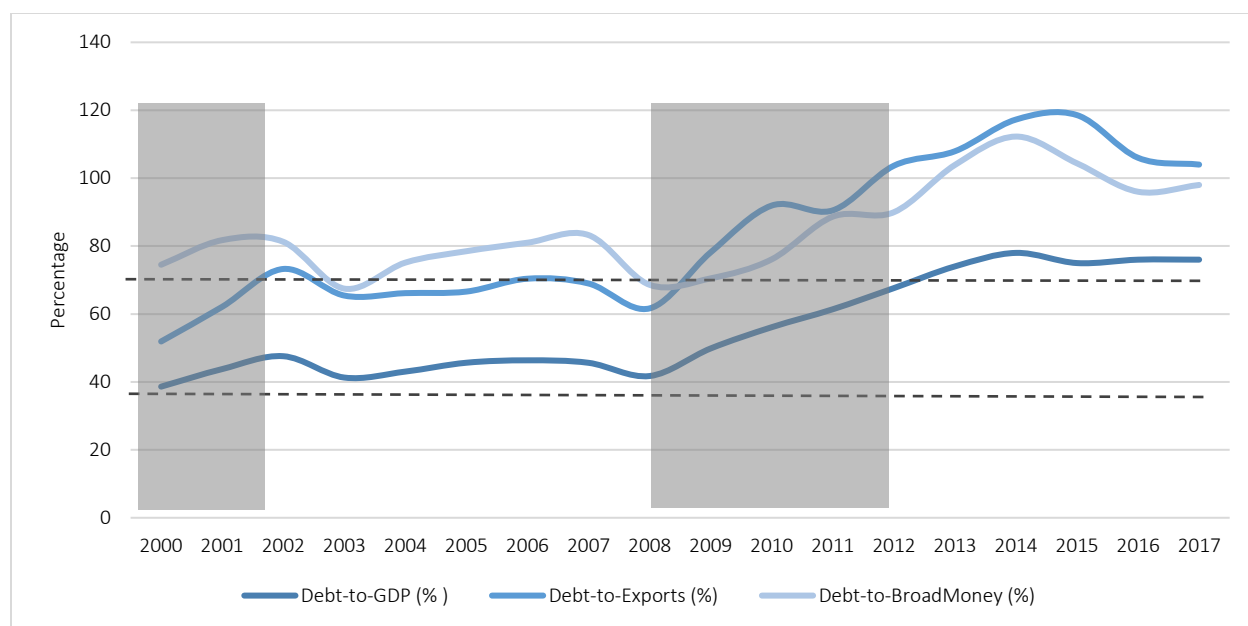


Figure 3.1 Debt Trajectory & Debt Sustainability Indicators - Aruba, 2000-2017.<sup>40</sup>

The key focus of tax policy reforms is to be growth-friendly, addressing not only short-term but also longer-term challenges (such as population ageing) to sustainable public finances. Taxes that have a smaller negative impact on economic decisions of individuals and firms are less negative for economic growth.<sup>41</sup> Therefore, a growth-oriented tax reform would shift part of the tax burden from income to consumption and/or residential property. This approach reduces the extent to which tax distorts business and household decisions, particularly incentives for work, saving, investment, and entrepreneurship; it also raises additional taxation through reforms that broaden the tax base, while reducing (top) marginal rates.

In addressing the necessary structural tax reform, this chapter compares Aruba's tax burden with that of its peers, using an internationally accepted broad measure of tax burden, thereby distinguishing between taxes and social security contributions. After introducing the measure of tax burden and discussing the data (section 3.2), comparisons of the total tax burden are made, both including social security contributions and excluding social security contributions (section 3.3), and final conclusions are drawn (section 3.4).

<sup>40</sup> Peterson & Croes (2018).

<sup>41</sup> OECD (2010).



### 3.2 Comparative analysis

The most commonly used measure of tax burden is the tax-to-GDP ratio, reflecting the share of a country's production that is collected by the government to finance public goods and services.<sup>42</sup> An advantage of this measure is that data are commonly available, facilitating international comparisons. The main indicators and available data include:

- *Gross Domestic Product* (GDP) in nominal terms for Aruba and for selected regional countries obtained from the online database of the World Bank (The World Bank, 2018);
- *Tax revenues* in nominal terms for Aruba compiled at the CBA and for selected regional countries obtained from the online database of the Organization for Economic Co-operation and Development (OECD, 2019).

In addition, based on available data, a comparative analysis was conducted of nine selected regional countries, including Aruba. These Caribbean small states include The Bahamas, Barbados, Belize, Costa Rica, Dominican Republic, Jamaica, St. Kitts & Nevis, and Trinidad & Tobago.

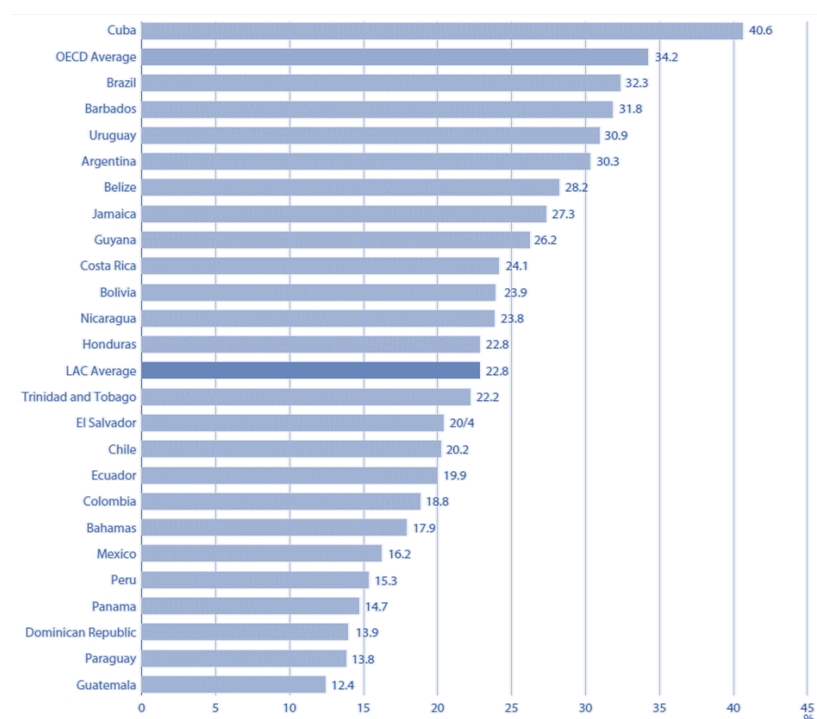


Figure 3.2. Total tax revenue to GDP (in percentage) in Latin America and the Caribbean.<sup>43</sup>

<sup>42</sup> Kiss, Tomasz, & Jirsakova (2009).

<sup>43</sup> OECD (2019).

### 3.3 Tax burden including social security contributions

Our initial comparison considers the tax burden (tax-to-GDP ratio) including social security contributions. Throughout the period under investigation, Aruba outpaces the selected regional countries with a relatively higher tax burden. In 2017, Aruba's tax to GDP ratio peaked at 37.5 percent, registering the highest tax burden in the Caribbean (after Cuba) (see Figure 3.3). Barbados ranks second behind Aruba, with a tax burden of 31.8 percent. The Bahamas and the Dominican Republic have tax-to-GDP ratios below 20 percent. The average tax-to-GDP ratio of the selected countries is 24.2 percent, with Aruba deviating 13.3 percentage points above the average, reflecting a significantly higher level of taxation. Furthermore, over the past decade, Aruba ranks consistently and substantially above the regional Caribbean.

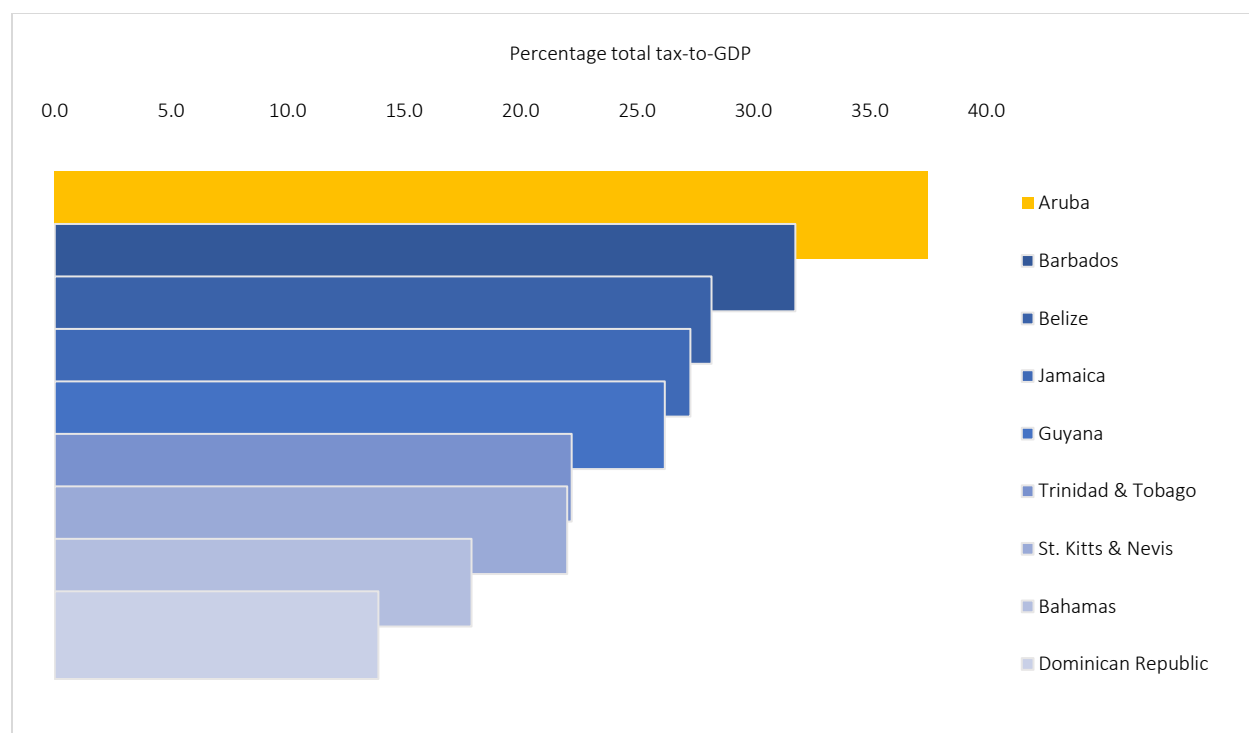


Figure 3.3. Tax-to-GDP ratio including social security contributions (in percent).<sup>44</sup>

<sup>44</sup> OECD (2019).

In the second comparison, the social security contributions are excluded from the estimation of the tax burden, as one could argue that these contributions are not taxes since the government provides a specific service benefit in return.<sup>45</sup> While this argument does have some validity, taxpayers, on the other hand, consider these compulsory contributions as burdens, especially when service quality lags. When social security contributions are excluded from the tax burden, Aruba no longer has the highest tax burden, but is in fourth place among the selected regional countries (Figure 3.4).

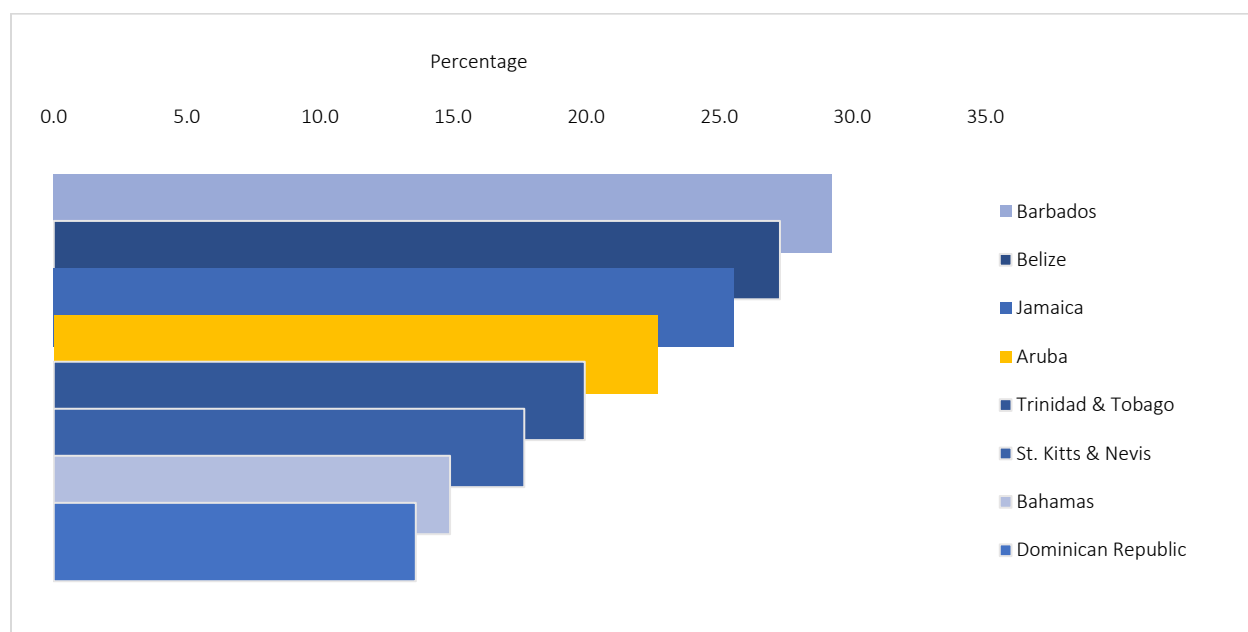


Figure 3.4. Tax-to-GDP excluding social security contributions.<sup>46</sup>

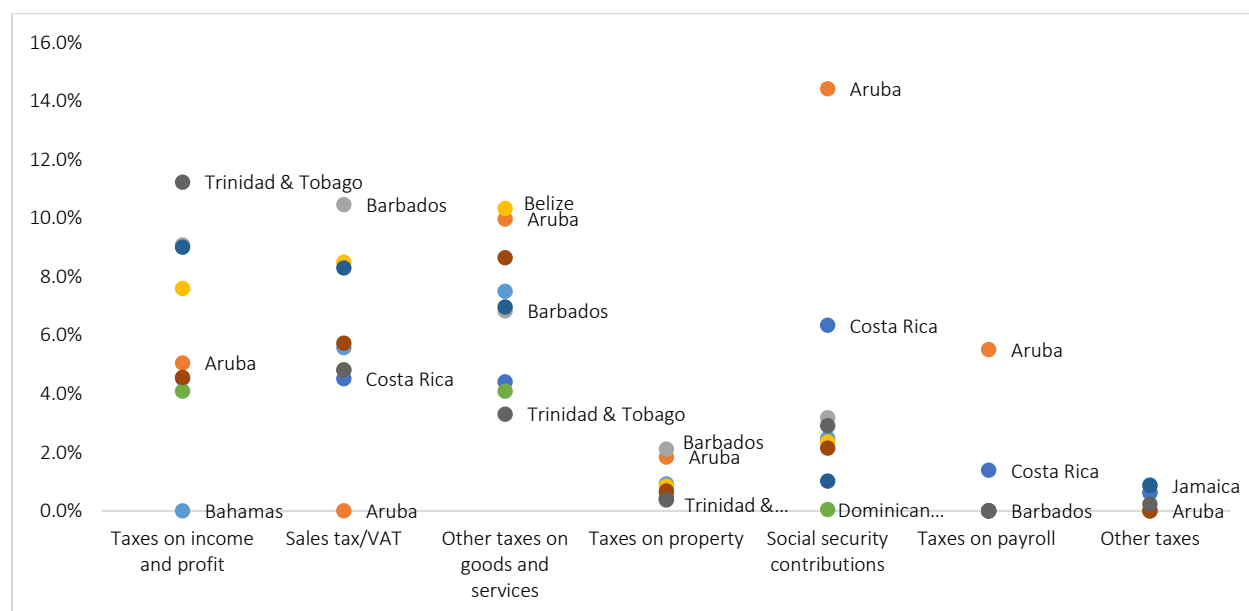
Excluding the social security contributions from the tax burden reduces the tax burden for all selected countries, particularly for Aruba. Aruba's tax burden is lessened by an estimated 14 percentage points. This decrease is due largely to Aruba's relatively higher social security contributions in the region; almost three times the Caribbean average.

<sup>45</sup> Kiss, Tomasz, & Jirsakova (2009).

<sup>46</sup> OECD (2019).

When analyzing *the tax burden per tax category*, Aruba also has one of the highest tax burden ratios for taxes on other goods and services, property tax, social security contributions, and payroll tax (see Figure 3.5). Trinidad & Tobago have the highest taxes on income and profit, with 11.2 percent of GDP, followed by Barbados with 9.1 percent, and Aruba placing fifth with 5.1 percent. The country with the lowest income and profit tax burden is the Dominican Republic (4.1 percent of GDP), while The Bahamas does not have an income and profit tax at all. All countries have either a sales or a value added tax (VAT), except for Aruba, which has a turnover tax, which is categorized as other taxes on goods and services.<sup>47</sup>

The country with the highest sales or value added tax burden is Barbados at 10.5 percent of GDP, followed by Belize at 8.5 percent, and the lowest is Costa Rica at 4.5 percent. Belize has the highest burden of other taxes on goods and services at 10.3 percent of GDP, with Aruba second at 10.0 percent. Belize and Aruba have the highest tax burden with regard to taxes on property, with 2.1 percent and 2.0 percent, respectively.



Note: Turnover tax and BAZV are included in the category "other taxes on goods and services" following OECD classifications. The category "other taxes on goods and services" excludes "sales tax" and "VAT" and includes all other taxes on goods and services, among which are "excises", "import duties", and "taxes on specific services".

Figure 3.5. Tax-to-GDP ratio per tax category.<sup>48</sup>

<sup>47</sup> See tax classifications and definitions by the OECD (2017).

<sup>48</sup> OECD (2019).

In reviewing Aruba's tax structure over the comparison period, the three top sources of tax revenue income are (a) other taxes on goods and services, (b) social security contributions, and (c) payroll taxes (see Figure 3.6). Social security contributions have contributed the most to tax revenue growth, resulting in a greater contribution to the overall tax burden.

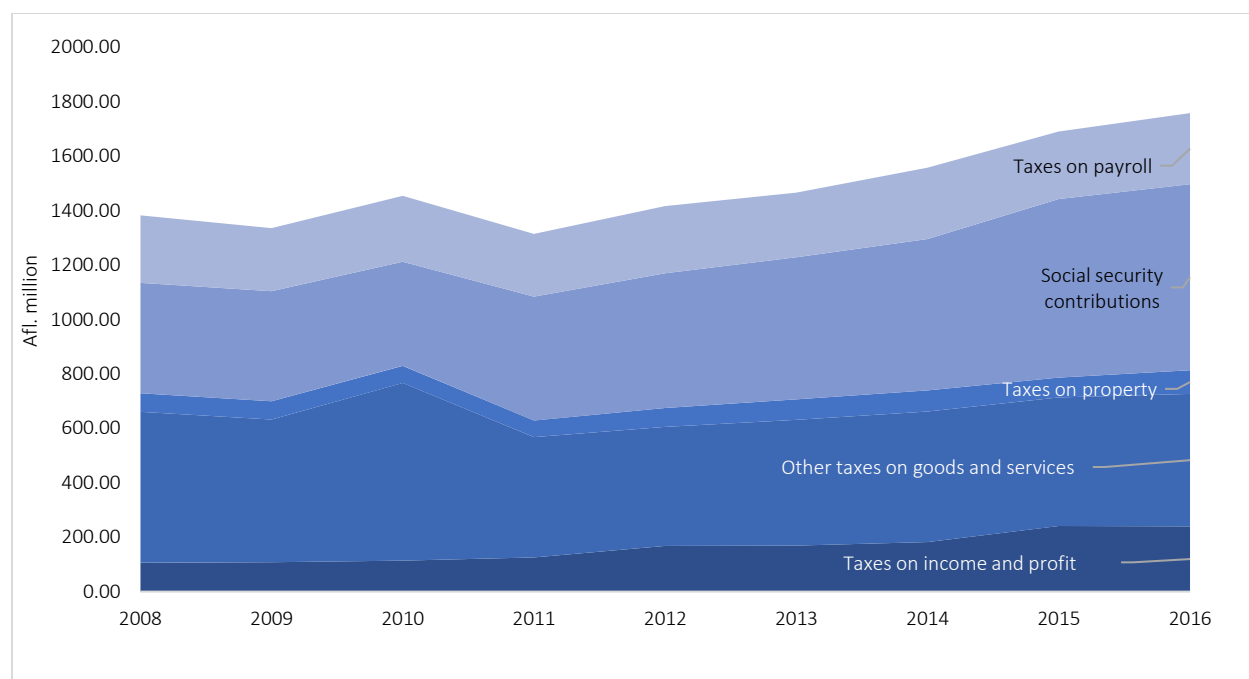


Figure 3.6. Aruba's tax structure (In Afl. million).

### 3.4 Conclusion

Fiscal space and policy choices are fundamental to safeguarding fiscal sustainability and macroeconomic stability. Increasingly, Caribbean small states have experienced limited fiscal space and surging levels of debt beyond critical thresholds. The resulting situation is a more vulnerable and less resilient economy, structurally exposed to economic shocks and natural disasters. Comparative analysis of fiscal space indicates that Aruba, relative to select Caribbean peers, is ranked below average due to a relatively high level of debt to GDP, and limited space for discretionary spending and capital investments (see Figure 3.7).

More important, the comparatively high tax burden limits fiscal policies to increase (direct) tax revenues. The resulting situation also contributes to the costs of doing business in Aruba, potentially crowding out not only government investments, but also capital investments by the private sector. In fact, research

indicates that private sector investments in Aruba contracted significantly over the past decade, and at least two-thirds of Aruban businesses indicate that the level and administration of government taxes are a significant burden to their business.<sup>49</sup>

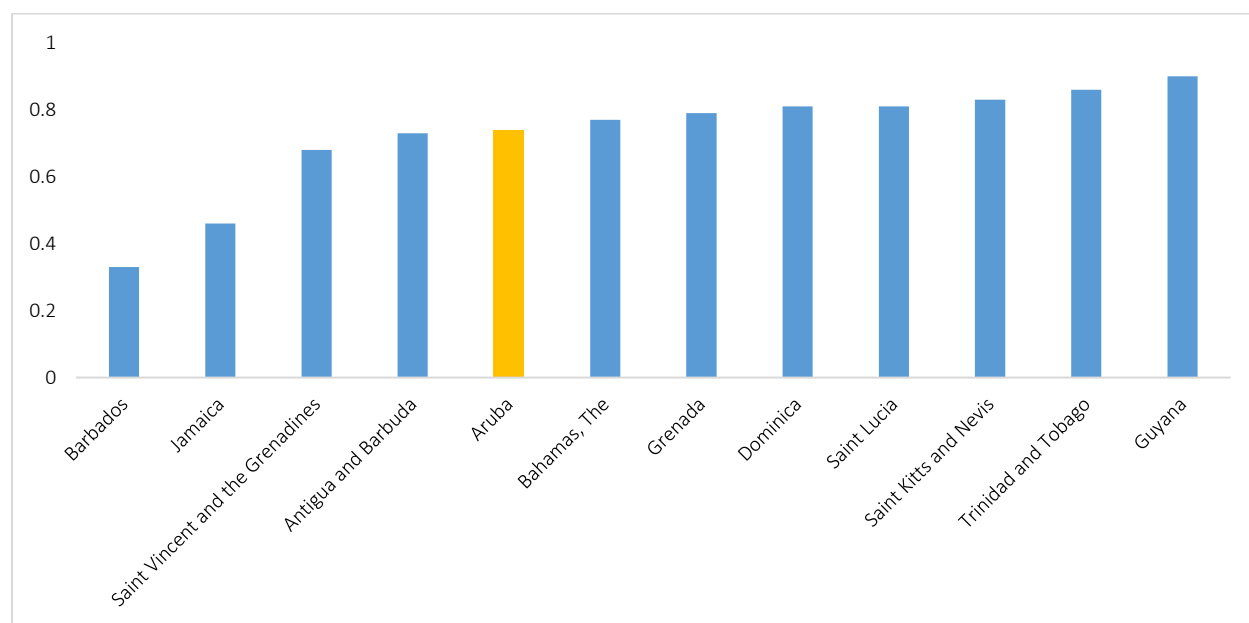


Figure 3.7. Fiscal space index across selected Caribbean small states.

A comparison of the tax-to-GDP ratio of Aruba with the eight other economies in the region reveals that Aruba registers the highest level of tax burden when social security contributions are included. In fact, the findings indicate that it has the maximum burden of social security contributions. Excluding social security contributions from the tax burden, it still holds the fourth highest place among the countries considered. Even excluding social security contributions per tax category, it also records one of the highest tax burdens on income and profit and on other goods and services. Aruba's main sources of tax revenue are taxes on income and profit, other taxes on goods and services, and social security contributions.

Social security contributions are compulsory and considered a burden by taxpayers. Aruba has limited space to increase the overall tax burden further. Countries with perceivably high tax burdens are unattractive for investors, thus potentially limiting economic growth. Furthermore, in Aruba's tax system, much of the tax

<sup>49</sup> Isla Innovativo, Centrale Bank van Aruba (2018).

burden is placed on higher income individuals, which is a disincentive for high-skilled or specialized labor. Increasing the level and nature of tax revenues should be carefully weighed and considered when designing fiscal tax reforms. The limited available space calls for the explicit consideration of controlling and containing government expenditures, without limiting capital investments.

The tax reform should increase government revenues by bolstering compliance, increasing efficiency, and broadening the tax base. Furthermore, a reduction in social security contributions also should be considered when reducing the overall tax burden. The tax reform proposed by the IMF (2018), and adopted by the Aruban government in 2018, entails a shift of the tax burden from direct to indirect taxes.<sup>50</sup> It also includes a rise in excise duties on specific consumer goods, such as alcohol and tobacco. Further, nonresident house ownership and commercial property are taxed higher. This intended reform, thus, broadens the tax base.

Beyond redesigning the tax revenue system, fiscal reform, and prudent fiscal policies require sound and solid fiscal institutional capabilities to: (1) bolster fiscal discipline and sustainable fiscal rules, (2) expose the costs of fiscal policies and deviations from fiscal targets, and (3) improve confidence in and credibility of fiscal policies.<sup>51</sup> In the case of small states, fiscal sustainability is considered pertinent to fostering economic resilience. Fiscal sustainability and effective fiscal policies enable both shock-absorbing and shock-counteracting resilience. Moving forward, Aruba's fiscal capabilities should be strengthened by considering:

- *Multiple, explicit, and prudent fiscal rules*, including, balanced budget requirements, expenditure controls, and/or debt anchors;
- *Enforcement of fiscal rules and tax compliance obligations*, which would broaden the tax base and potentially reduce the tax burden;
- *Independent, transparent, and competent fiscal institutions* that establish checks and balances, monitor fiscal performance, and hold policymakers and political agents accountable.

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<sup>50</sup> International Monetary Fund (2018).

<sup>51</sup> Peterson & Croes (2018).

In conclusion, while acknowledging the relevance of contemporary fiscal reforms, yet underscoring the need for systemic fiscal sustainability, several fiscal pathways exist for fostering economic resilience in Aruba. These pathways include:

- Enacting a fiscal responsibility law;
- Diversifying and designing comprehensive fiscal rules;
- Improving and enforcing tax compliance;
- Establishing a national fiscal council;
- Expanding the time-horizon of the medium-term framework;
- Implementing a standardized (General) Government Finance System; and
- Improving fiscal data analytics for forecasting, analysis, and modelling.



## 4. BALANCE OF PAYMENTS AND THE EXTERNAL SECTOR

Jonathan Upegui and Leo de Haan

### 4.1 Introduction

This chapter presents an analysis of Aruba's balance of payments (BoP) as determinant of international reserves and net foreign assets (NFA). The main questions addressed in this chapter are: (1) *To what extent is the current account of Aruba sustainable*, and (2) *How can the external sector be strengthened to foster economic resilience?*

Before analyzing the BoP, the concept of sustainability must be defined. It is often thought that a current account must be in surplus to be sustainable. However, this is not always true since other factors must be taken into account. The first part of this chapter discusses these factors. Next, the interactions between several BoP components and the influence of national and international economic developments on BoP items are analyzed by means of regression analysis. The implications for international reserves and strengthening the external sector are discussed, and conclusions are presented.

### 4.2 Current account sustainability

The current account of the BoP consists of net trade on goods and services, earnings on cross-border investments, and net transfers. The current account is the result of the general equilibrium interaction between many factors. These factors cover domestic rates of saving and investment, economic growth and trade, international investment and capital flows, prices and rates of return and the exchange rate, and fiscal and monetary policy.

From the domestic perspective, a sustainable current account trajectory is one where the feedback effects from the current account or net international investment position to consumption or business investment spending are relatively weak in comparison to other macroeconomic forces that affect these spending categories.<sup>52</sup> For example, if the country has to change its monetary policy or fiscal policy stance due to the magnitude and persistence of the current account deficit, then the current account is not sustainable.

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<sup>52</sup> Mann (2002).

Another supporting example of an unsustainable situation would be if the economic growth of a country is affected by the deterioration of investor confidence because of the current account deficit.

A current account deficit that is the result of low domestic savings is less likely to be sustainable than a current account deficit that is the result of high investment.<sup>53</sup> Higher levels of investment increase the economy's production capacity, which, in general, increases (future) output and trade surpluses. Nevertheless, several studies and benchmarks exist on how large a current account deficit can be and still be sustainable. Conventionally, structural deficits of more than 4 percent of GDP are a warning signal to policymakers and monetary authorities since large and unsustainable deficits strain the level of the country's international reserves and, moreover, have adverse implications for the country's ability to service its debt.<sup>54</sup> Previous studies provide a relative benchmark where current account deficits in excess of 5 percent of GDP are deemed excessive.<sup>55</sup>

### **4.3 Aruba's current account and components**

The current account consists of (a) the good & services balance, (b) the income account, and (c) the current transfers account. This section analyzes each component and the main determinants that drive the respective account.

#### Goods & services account

In the period 2008-2017, the goods (or trade) balance was always in deficit, while the services balance remained in surplus (Figure 4.1, panel 1).

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<sup>53</sup> Hudson & Stennett (2003).

<sup>54</sup> Alwyn & Suniella (2006).

<sup>55</sup> Summers (1996).



\*) Due to the uniform scale of the y-axis the oil exports and imports in 2008, 2009, 2011 lie outside the chart.

Figure 4.1. Goods & services account (Aruba, 2008-2017).

The goods balance can be split into oil and non-oil. The *oil balance* until 2012, when the refinery was closed, was the outcome of huge imports and exports of oil (Figure 4.1, panel 2). The percentage changes in oil imports for domestic use are explained largely by changes in the world oil price and show significant volatility over the past two decades (Figure 4.2). Regression analysis indicates that a 1 percent change in the world oil price translates into a 0.61 percent change in nominal imports of oil for domestic use.



Figure 4.2. Import of oil for domestic use and world oil price, 1999-2017 (Percent changes). World oil price – West Texas Intermediate (WTI) oil price per barrel.

Analysis reveals that the non-oil goods balance remained persistently in deficit over the past decade (Figure 4.1, panel 3), mainly because of imports of consumer goods. Aruba imports virtually all goods that are consumed. The imports of consumer goods are significantly correlated with private consumption (Figure 4.3). Regression analysis shows that a 1 percent change in private consumption in current prices results in a 1.2<sup>56</sup> percent change in nominal imports of consumer goods.<sup>57</sup>

<sup>56</sup> The coefficient has a standard error of 0.6, implying that the true coefficient could fall within a 95% confidence band of 0.0 to 2.4.

<sup>57</sup> When tourism receipts are included in the equation, it was not significant.



Figure 4.3. Import of consumer goods and (nominal) private consumption 1999-2017 (percentage changes).

On the other hand, the findings demonstrate that the services balance is persistently in surplus due largely to the contribution of tourism services exports (Figure 4.1, panel 4). Analysis indicates that U.S. economic growth drives the long-run tourism services exports. Regression analysis tells that a 1 percent increase (decrease) in nominal U.S. GDP growth translates into an estimated 2 percent expansion (decrease) in tourism services exports in Aruba.

#### Income account

The income account is persistently in deficit and consists mainly of interest payments on bonds and intercompany loans (ICLs, see Figure 4.4, panel 1). The outflow of interest income on intercompany loans is subject to model errors as the development of intercompany loans is exogenously determined. In contrast, the outflow of interest income on bond debt consists almost entirely of interest payments on foreign government debt (Figure 4.5), and is, thus, more readily measured as the amount of foreign government debt outstanding is known. Consequently, the amount of and the interest rate on outstanding foreign government debt are the main determinants of the income account. Thus, lowering the (share of) foreign government debt has a mitigating effect on the outflows through the income account in the order of magnitude of the amount of foreign debt reduction multiplied by the average interest rate on that foreign debt.

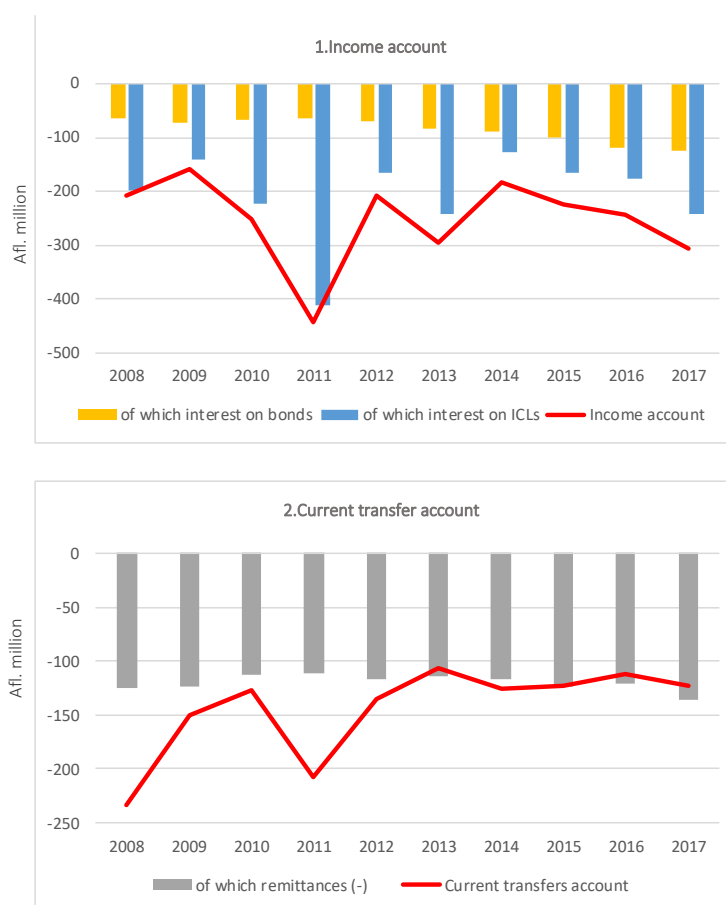


Figure 4.4. Income and current transfers accounts.

### Current transfers account

Analysis indicates that the current transfers account is persistently in deficit and consists mainly of remittances (Figure 4.4, panel 2). Remittances comprise wages and other income sent abroad by foreign employees working in Aruba. In general, remittances correlate with nominal GDP and the number of immigrants (e.g., foreign labor force participation). The findings confirm that remittances are indeed associated with nominal GDP in the previous year and the change in the number of new immigrants in the current year. Regression analysis indicates that a 1 percent increase in nominal GDP in the previous year leads to a 1.1 percent rise in remittances in the subsequent year.

#### 4.4 Benchmarking the current account

Time series analysis reveals that the current account fluctuates mainly with the goods & services account, as the income and current transfers accounts show persistent deficits (see Figure 4.5). When the results of the current account are compared with the benchmark of a deficit of 5 percent of GDP (see Figure 4.6), the results show that Aruba's current account deficit was below the benchmark for several years.

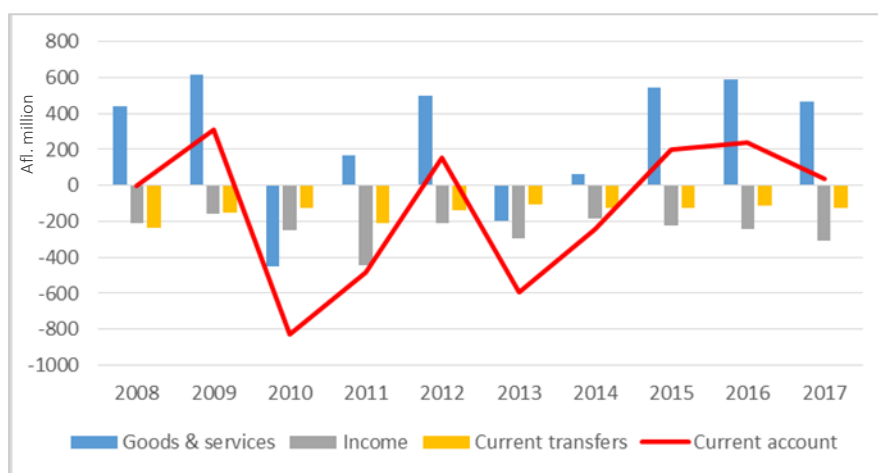


Figure 4.5. Aruba's current account 2008-2017.

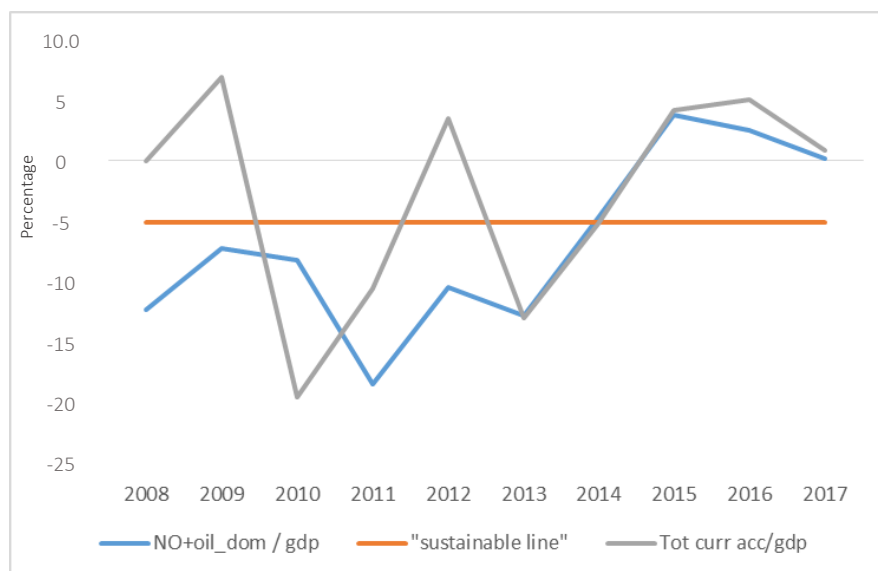


Figure 4.6. Current account deficit benchmark (in percent).

When benchmarking Aruba's current account against those of select Caribbean countries, the findings confirm that Aruba enjoys the highest degree of trade openness and a relatively more volatile external sector (see Figure 4.7). The results corroborate previous analysis on the significant vulnerability and volatility of Aruba's economic growth. More important, analysis indicates that over the past two decades Aruba's external sector weakened considerably from its position in 2006.

A comparison of the imports and exports of goods and services components of the current account shows that both imports and exports as a percent of GDP are significantly higher for Aruba than those of other Caribbean countries (Figure 4.8, panels 1-2). Relative to other Caribbean countries, Aruba's agricultural sector is small (accounting for less than 5 percent of GDP) with limited industrial food production. On the other hand, the results also confirm Aruba's strong dependency on tourism services, which is apparent in the high level of services exports to GDP ratio compared to those of the other Caribbean countries.

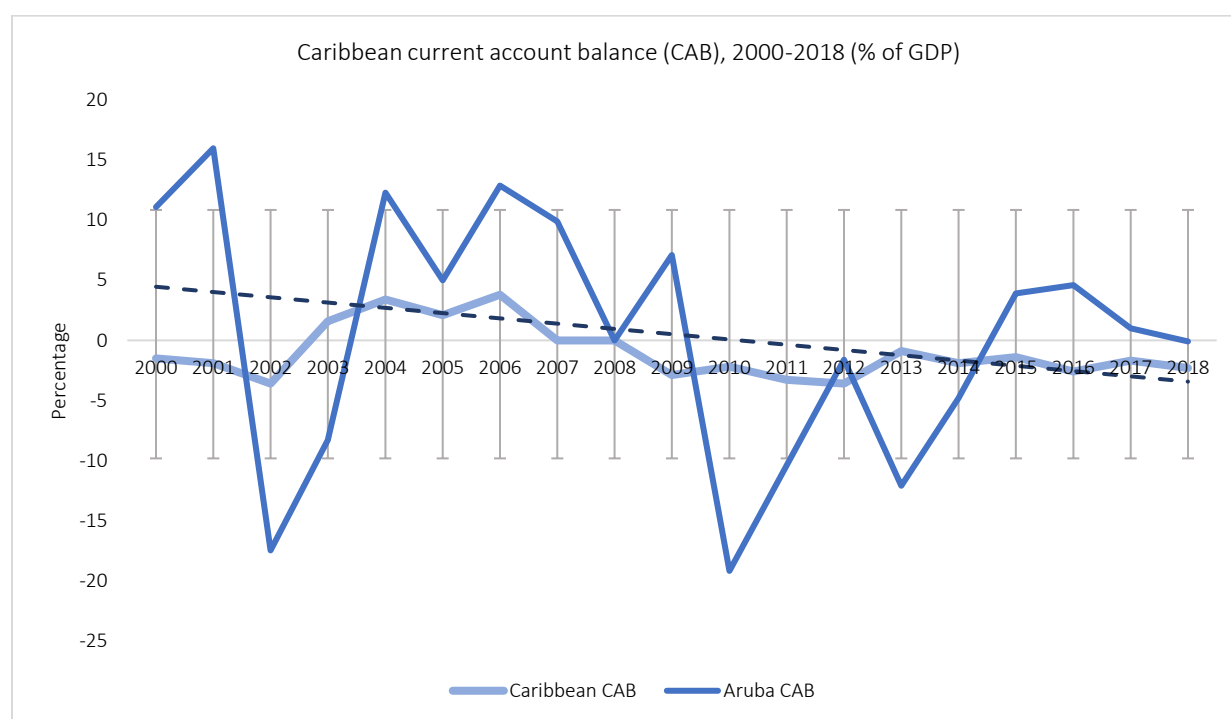


Figure 4.7. Benchmarking Aruba's current account balance.<sup>58</sup>

<sup>58</sup> CBA (2018); IMF (2018).



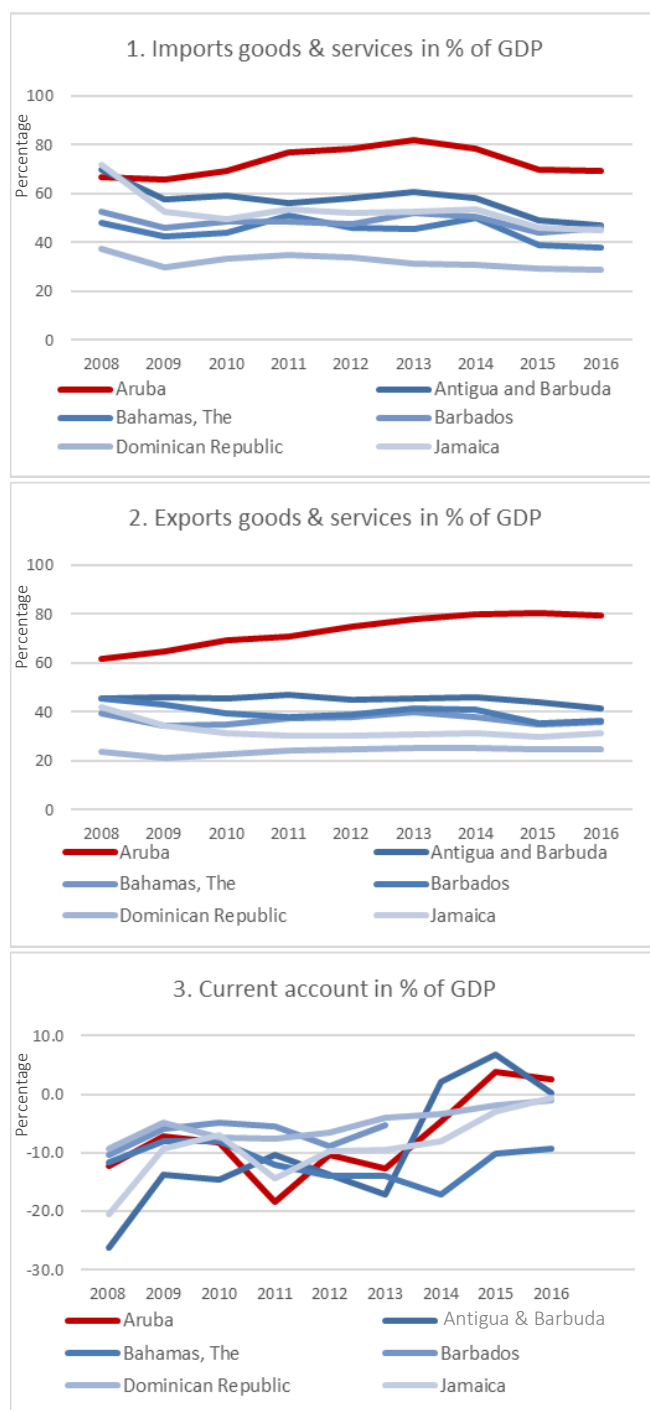


Figure 4.8. Imports, exports of goods and services, and the current account: Aruba and select Caribbean countries, 2008-2016<sup>59</sup>.

<sup>59</sup> The World Bank (2018).

## 4.5 Capital and financial account

The capital & financial account (Figure 4.9, panel 2) shows how the current account surplus (deficit) is invested (funded) from abroad. The capital & financial account moves largely as a mirror (inverted) image with the current account. A regression of the capital & financial account on the current account indicates that an estimated 85 percent of the current account balance has its complementary counterpart in the capital & financial account, thus underscoring the significance of capital flows and investments in strengthening the external sector.

The *direct investments* into Aruba are inward flows generally related to tourism and real-estate investment projects. Analysis indicates that over the past decade the flow of foreign direct investments (FDI) as a percentage of GDP decelerated (see Figure 4.10), with an estimated two-thirds of (the stock of) total foreign direct investments originating from the United States. The findings reveal that FDI are highly susceptible to (international) financial and economic shocks, consequently resulting in significant volatility in FDI flows. The contraction in FDI coincides largely with several interrelated factors, including the maturing of the Aruban tourism industry, in addition to the global financial crisis, and the closing of the oil refinery.

For *portfolio investments*, an important source of capital is the sale of domestic bonds to foreign investors. Part of the funding need of the issuer is assumed to be determined by repayments on existing debt and on interest payments. Regression analysis tells that the (gross) inflow of domestic bonds-related capital is a constant of Afl. 78 million plus a factor 1.3 multiplied by the (gross) outflow of domestic bonds-related capital. Hence, according to the equation, a net inflow always exists.<sup>60</sup> The remaining part of the current account surplus (deficit) that is not invested (funded) abroad is added to (subtracted from) the official reserves. On average, an estimated 15 percent is absorbed by the official reserves.<sup>61</sup>

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<sup>60</sup> Interest payments were not significant when added.

<sup>61</sup> Disregarding items not yet classified and bank transactions.

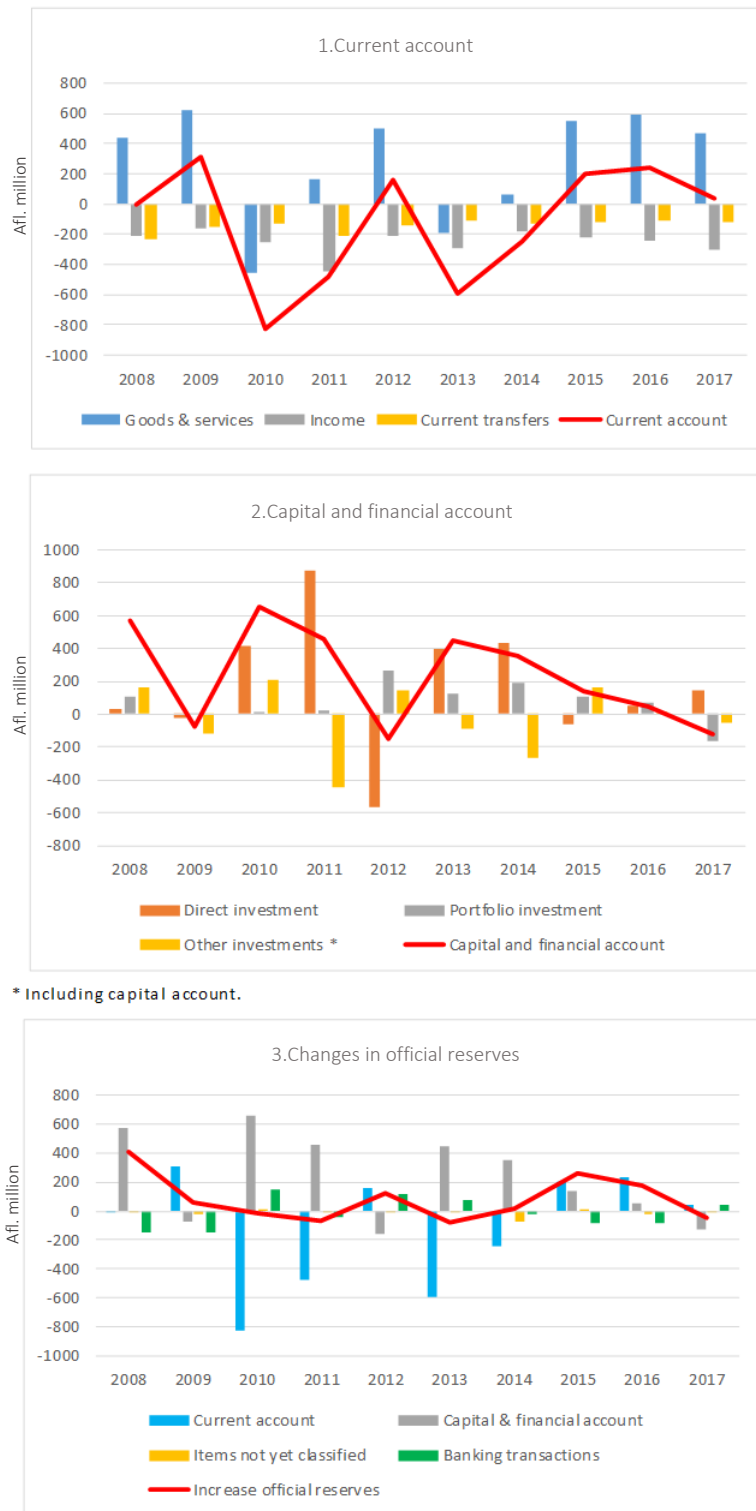


Figure 4.9. Current account, capital and financial account, and official reserves.

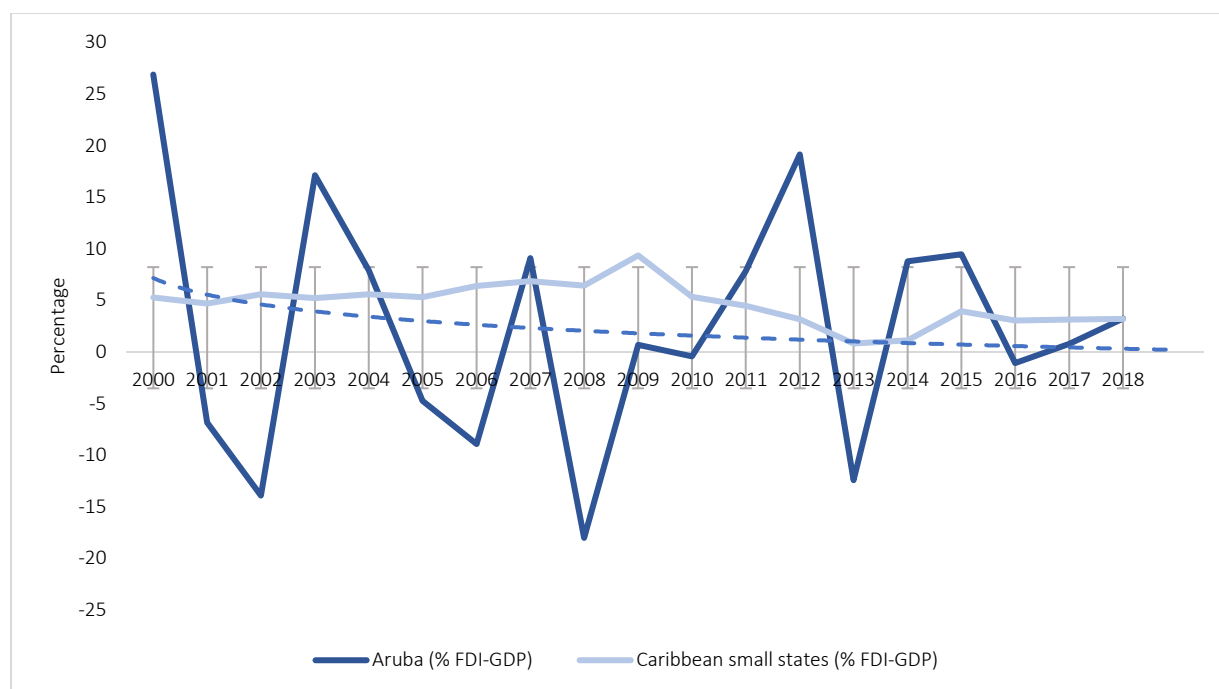


Figure 4.10. Foreign direct investments as percentage of GDP for select Caribbean small states.

## 4.6 Conclusion

As a small open economy, the strength of Aruba's external sector is fundamental to fostering economic resilience. Summarizing the different determinants of the balance of payments, the following main insights are gleaned from the results of the external sector analysis (see Figure 4.11).

In general, the results confirm previous studies that Aruba enjoys (one of) the highest degree of economic openness in the Caribbean, thus making it susceptible to economic vulnerability and significant volatility. The high degree of (fuel and food) imports places structural pressures on the current account and net foreign assets, in addition to the strains of government debt repayments and remittances. With the diminishing growth in foreign direct investments and foreign exchange earnings from tourism exports over the past decade, the external sector remains relatively weak and prone to exogenous shocks.

Strengthening the external sector for fostering economic resilience, thus, requires a multi-prong strategy of reducing economic vulnerabilities and regenerating new economic opportunities. Stimulating and attracting foreign direct investments that reduce import dependency and provide additional foreign exchange earnings from export are prime candidates. Investing and developing domestic food and (renewable) energy production facilities would serve this purpose well. Likewise, developing new avenues for service exports, either directly or indirectly related to tourism and (logistic) transportation, would foster economic resilience. More important, extending the fiscal space by improving government efficiency (e.g., lowering government expenditures by means of redesign, privatization, and digitization) and significantly lowering government debt would provide a significant source of economic resilience.

Goods account	Services account	Income account	Current transfer account	Financial & Capital account
<ul style="list-style-type: none"> <li>• Energy dependency and oil imports</li> <li>• Food and consumer goods imports</li> <li>• Prone to volatility in international markets and prices</li> </ul>	<ul style="list-style-type: none"> <li>• Tourism service exports</li> <li>• Long-run US economic growth rate</li> <li>• Prone to US consumer and business sentiments and trade policies</li> </ul>	<ul style="list-style-type: none"> <li>• Income outflow due to interest payments                             <ul style="list-style-type: none"> <li>• Subject to government debt level and interest rates</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Remittance outflows                             <ul style="list-style-type: none"> <li>• Influenced by (foreign) labor market participation and economic growth</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Diminishing foreign direct investments</li> <li>• Government bonds and repayment schedules</li> </ul>

*Figure 4.11. Main determinants of the balance of payments.*



## 5. LABOR MARKETS & PRODUCTIVITY

Ryan R. Peterson and Ryan Marapin

### 5.1 Introduction

Historical analysis of Aruba's economic growth indicates that since the early 2000s, real output growth has been on a downward trajectory. Although the economy recovered initially between 2011 and 2015, long-run real economic growth is projected at an estimated 1.1 percent, well below the sustainable development goal of 2 percent (UNSDG). This projection underscores the delicacy of economic sustainability. In a similar vein, economic productivity, as proxied by real GDP per capita, has decreased steadily since 2000 (see Figure 5.1). Although the compounding effects of economic shocks and demographic shifts provide a partial explanation for this diminished growth, developments in the domestic labor market and productivity provide a complementary explanation.

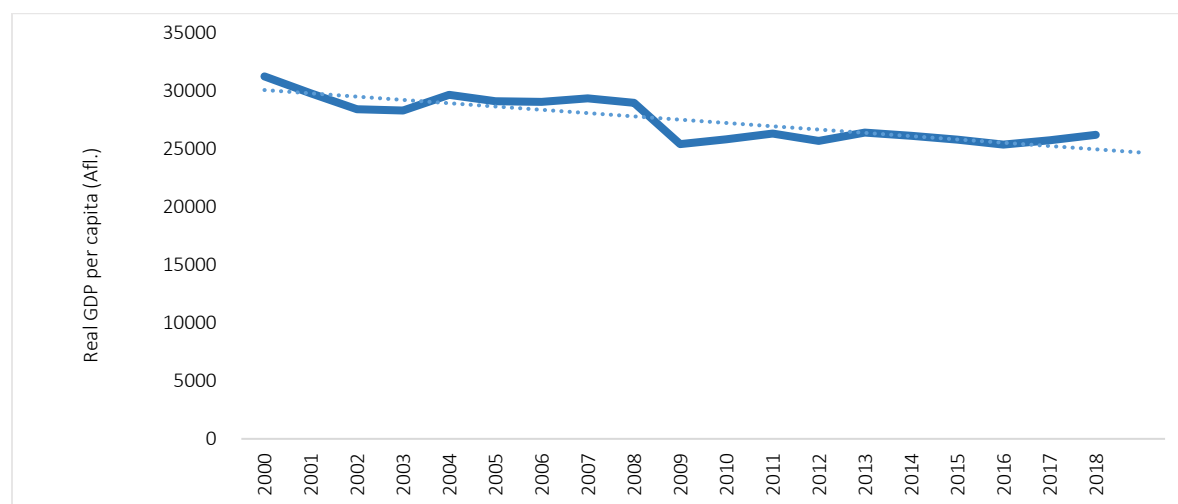


Figure 5.1. Estimate of real GDP per capita (Aruba, 2000-2018, CBA).

The interplay between the labor market and economic growth plays an important role in fostering economic resilience, where labor represents the human capital in producing goods and services within an economy. This interplay is especially relevant in the context of the Aruban economy, as its main source of economic growth is the tourism sector, which is characterized by relatively high labor intensity. With regard

to labor, an economy can grow either *extensively* by utilizing more labor or *intensively* by using the same amount of labor more efficiently. The latter is also known as labor productivity growth. This chapter addresses the labor market developments in Aruba and discusses several policy alternatives for improving labor productivity.

## **5.2 The state of labor in Aruba**

Analysis of the Aruban labor market over the past three decades yields three distinct stages, marked by two economic recessions, with a decelerating growth rate in working age population, employment, and labor participation:

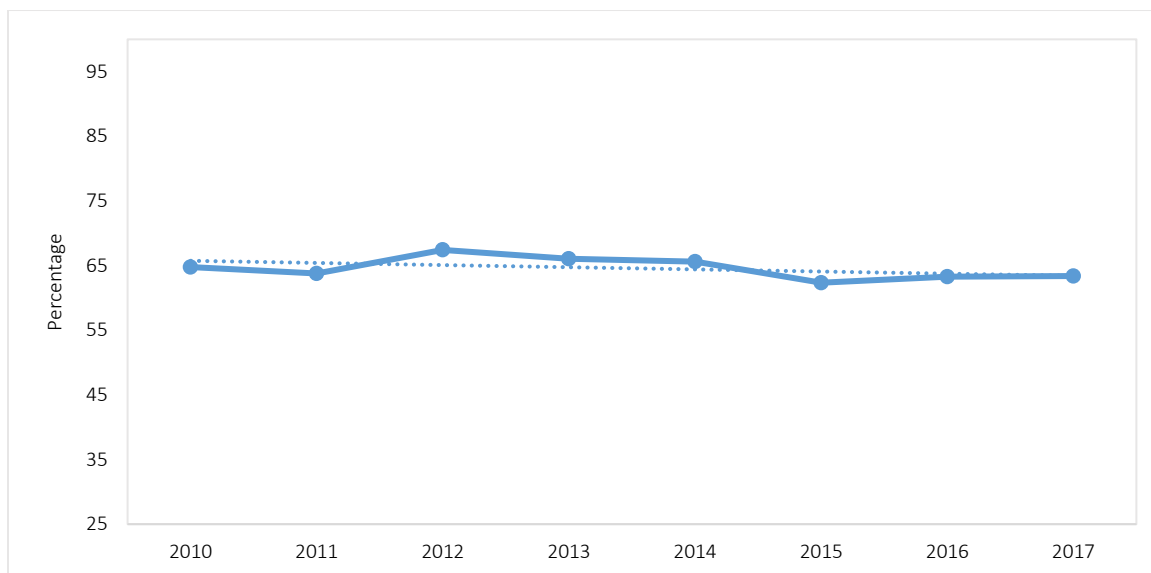
- *Expanding* (1991-2000): labor force and employment growing by, respectively, an estimated 44.6 percent and 43.3 percent, and the labor participation rate reaching 65 percent;
- *Diminishing* (2000-2007): labor force and employment growth decelerating to 21.6 percent and 23.2 percent, respectively, and labor participation inching forward by 1.2 percentage points; and
- *Declining* (2010-2017): labor force and employment growth contracting by, respectively, 12.6 percent and 10.2 percent, and the labor force participation rate falling by 1.4 percentage points.

In terms of real GDP growth, analysis indicates that across these three stages of labor market development, real GDP growth rates also contracted significantly from 54.5 percent (1991) to -3.2 percent (2017), with an average annual growth rate of 0.5 percent over the past decade. During the early expansion stage, real GDP grew at a faster pace than the labor market. In the subsequent two stages, the labor market surged four times faster than real GDP, thus dampening productivity levels.

The findings reveal that while Aruba's labor market has matured significantly, it now is facing signs of stagnation and decline. Since the 1960s, Aruba's population almost doubled to an estimated 112,000 (registered) inhabitants, due largely to two industrial waves of migration, i.e., the oil-refining industry during the 1950s and the tourism industry during the 1990s. The working age population surged, with employment more than doubling between 1981 and 2017 and concentrated largely (+70 percent) in five sectors: tourism services, wholesale and retail, real estate and renting, construction, and public services. Whereas labor force participation rates expanded, labor force participation rates declined by an estimated 1.4 percentage points since 2007 (see Figure 5.2). In tandem, the average unemployment remained at an



estimated +8 percent, with significant upswings following the 9-11 crisis (in 2001) and the global financial crisis (in 2008) (see Figure 5.2).



*Figure 5.2. Labor force participation 2010-2017 (CBS, 2018).*

The decreasing labor market participation is more pronounced among Aruban youth and young workers when compared to older workers. The youth unemployment rate is estimated at 19 percent (CBS, 2018). Accounting for the (youth) population in education, training, and not active in the labor force (22 percent) yields a labor force gap of at least 10 to 15 percent.

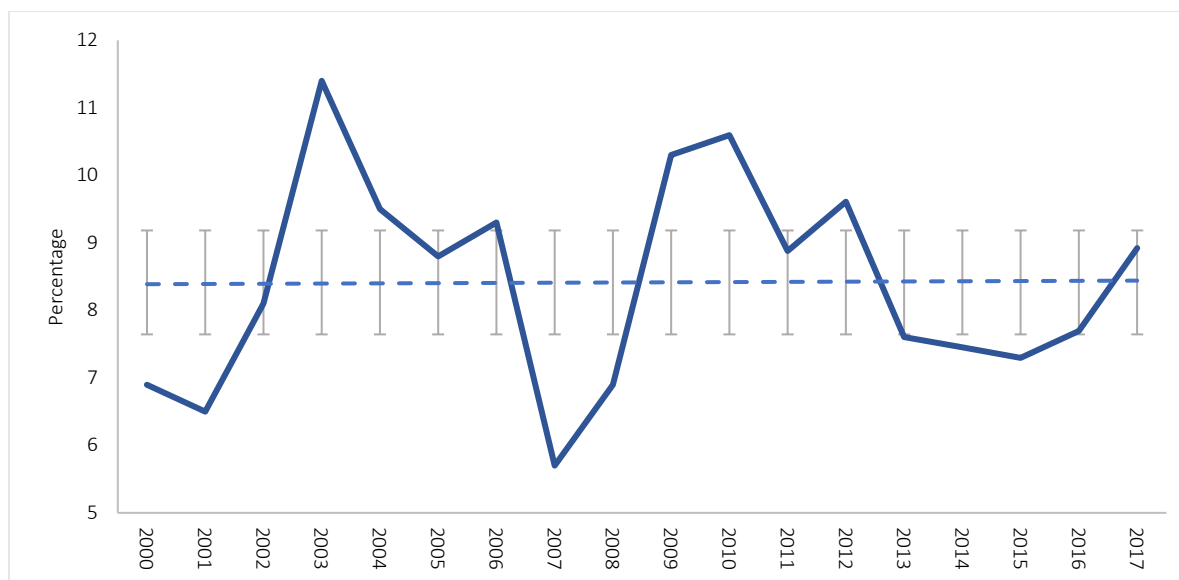


Figure 5.2. Unemployment rates and mean trend line between 2000 and 2017.<sup>62</sup>

In terms of income and income inequality, analysis provides a consistent picture. Income inequality as measured by the Gini income coefficient increased from 0.41 to 0.44 between 2006 and 2010 and remained stable for close to a decade (see Figure 5.3).

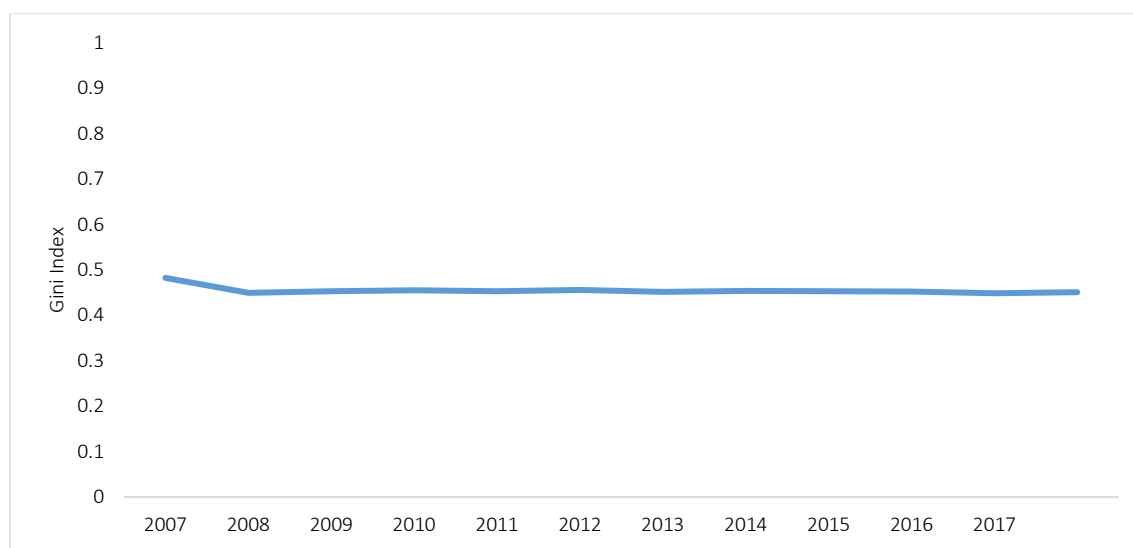


Figure 5.3. Income Gini Index 2007-2017.

<sup>62</sup> DAO, CBS, CBA (2018).

The stagnant Gini index reveals a weak level of income equality, with no significant change in recent years. These results corroborate previous economic studies that income and real wage growth have been relatively inert over the past decade<sup>63</sup> (see Figure 5.4). Moreover, national statistics show that at least 15 percent of Aruban households suffer from income poverty, translating into an estimated 6000 households that are financially challenged.<sup>64</sup>

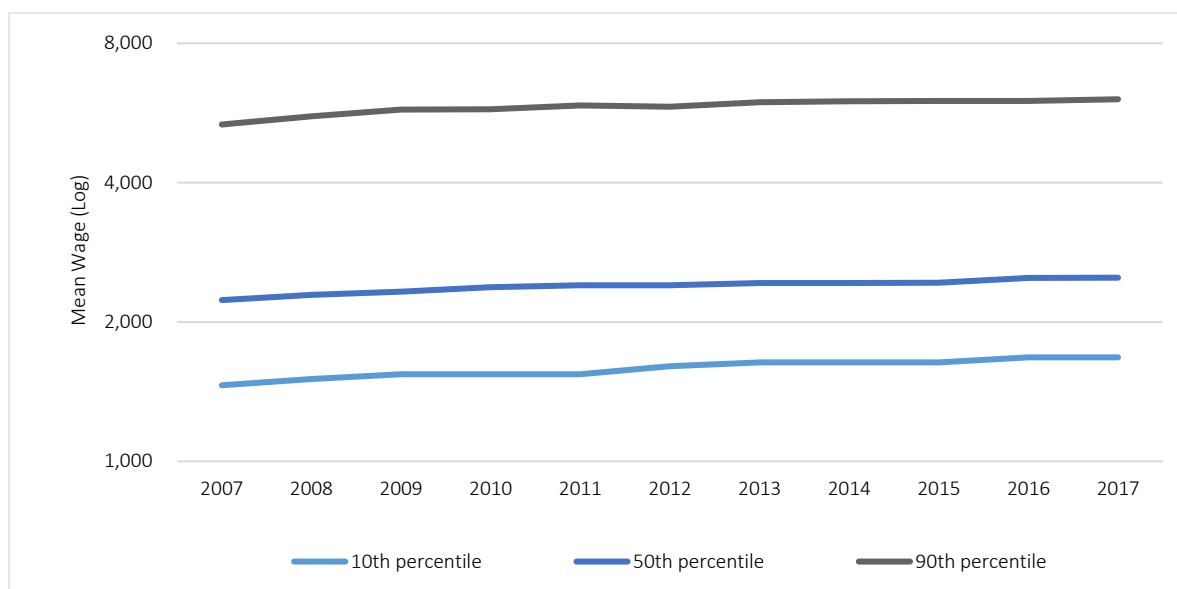


Figure 5.4. Mean wage growth Aruba, 2007-2017.<sup>65</sup>

In terms of workforce skills, at least two-thirds of the labor force can be classified as low-skilled.<sup>66</sup> Analysis also suggests that labor participation and employment rates are significantly higher for high-skilled labor, thus underscoring the importance of (higher) educational achievement levels and human capital investments (see Figure 5.5).

<sup>63</sup> IMF (2015, 2017).

<sup>64</sup> CBS (2018).

<sup>65</sup> CBS (2018).

<sup>66</sup> CBS (2018).

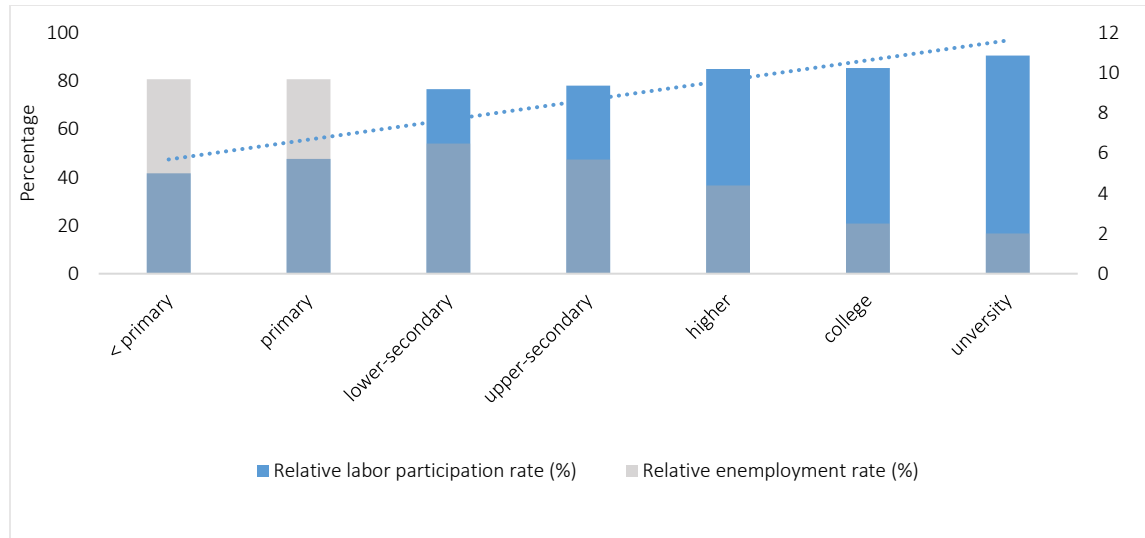


Figure 5.5. Education, labor participation, and unemployment.

An estimated 70 percent of the private sector organizations indicate that the current labor force is ‘unfit’, with at least 50 percent experiencing a significant skills-mismatch between labor market needs and educational systems.<sup>67</sup> The accelerated ageing of the workforce and the increasing dependency on older generations are creating an additional challenge for Aruba’s economy (see Figure 5.6)

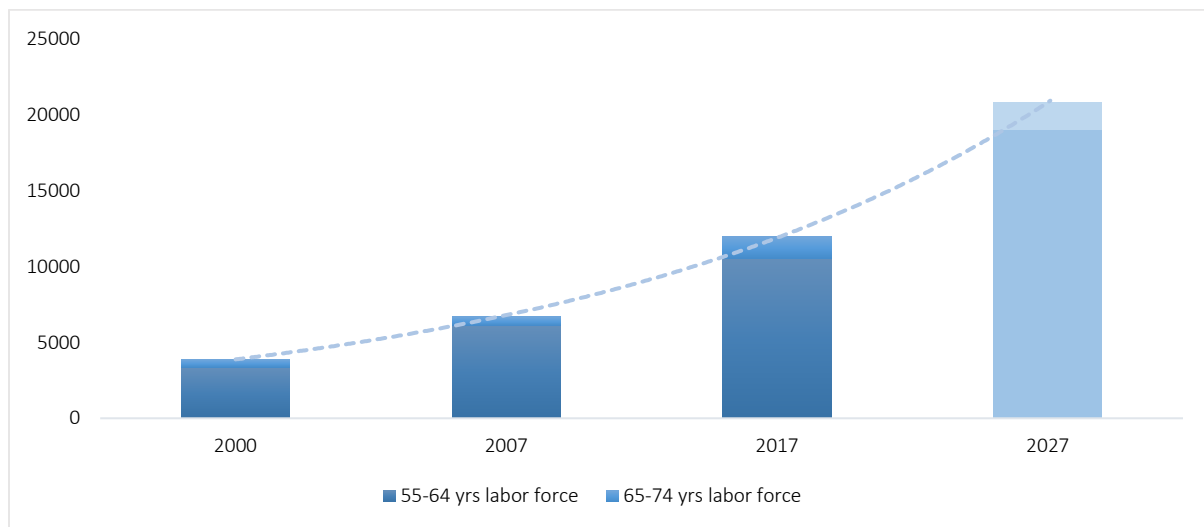


Figure 5.6. Labor force +55 years.<sup>68</sup>

<sup>67</sup> CBA (2018).

<sup>68</sup> CBS (2018).

Considering the foregoing developments and trends, it is no surprise that Aruba's economic and labor productivity has been on a slippery slope with a significant dampening effect on potential economic growth (see Figure 5.5). Since the turn of the century, aggregate labor productivity (measured as real GDP per unit of employment) has been on a declining path. Thus, while the labor market volume has grown over the past decades, the value-added thereof has not. Analysis indicates that whereas labor productivity expanded between 1991 and 2000 (+8 percent), over the past two decades, labor productivity contracted (-24 percent).

The results corroborate previous studies,<sup>69</sup> which indicate that Aruba's total factor productivity has been negative since 2001, contracting at an annual average rate of -1.3 percent. The available data suggest that labor productivity development explains well over 50 percent of the economic output and (real GDP per capita) growth trajectory during the past 30 years. Its structural decline has had a significant effect on realized and potential output and the associated well-being of the Aruban economy.

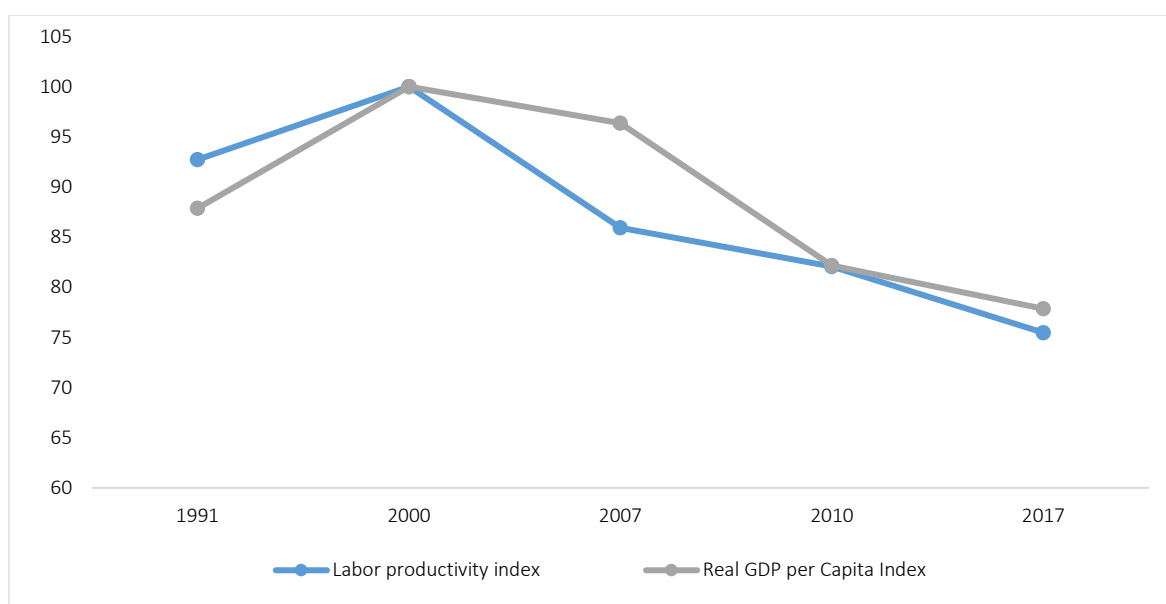


Figure 5.6. Labor productivity and real GDP per capita (Aruba, 1991-2017; 2000 = 100).

<sup>69</sup> CBA (2018), IMF (2013, 2019).

### 5.3. Benchmarking Aruba's labor market

Relative to select Caribbean small states, Aruba's labor market demonstrates several strengths and several weaknesses. Whereas general unemployment and youth unemployment levels are comparatively better (on average, 8 percent versus 11 percent, respectively; 0.79 index point), the Aruban labor force participation rate is significantly lower than that of other Caribbean countries (on average, 63 percent versus 77 percent, respectively; 0.09 index point). In relative terms, the Bahamas has the highest labor force participation rate (1.00 index point) and Guyana the smallest labor force participation rate (0.0 index point). Measurement of the composite labor market index indicates that Aruba ranks in the top 50<sup>th</sup> percentile of Caribbean small states (see Figure 5.7).

Table 5.1. Labor market indicators and composite labor market index for Caribbean Small States.<sup>70</sup>

	Unemployment (Index)	Youth Unemployment (Index)	Labor Force Participation (Index)	Labor Market Index (Average)
<b>Aruba</b>	<b>0.79</b>	<b>0.77</b>	<b>0.09</b>	<b>0.55</b>
Antigua & Barbuda	0.62	0.59	0.41	0.54
The Bahamas	0.54	0.58	1.00	0.71
Belize	0.76	0.79	0.37	0.64
Barbados	0.66	0.45	0.77	0.63
Caribbean small states	0.63	0.58	0.43	0.55
Dominica	0.62	0.59	0.41	0.54
Grenada	0.62	0.59	0.41	0.54
Guyana	0.57	0.55	0.00	0.37
Jamaica	0.51	0.43	0.53	0.49
St. Kitts & Nevis	0.62	0.59	0.41	0.54
St. Lucia	0.00	0.00	0.65	0.22
Trinidad & Tobago	1.00	1.00	0.41	0.80
St. Vincent & the Grenadines	0.22	0.20	0.66	0.36

<sup>70</sup> CBA (2018); WB (2018).

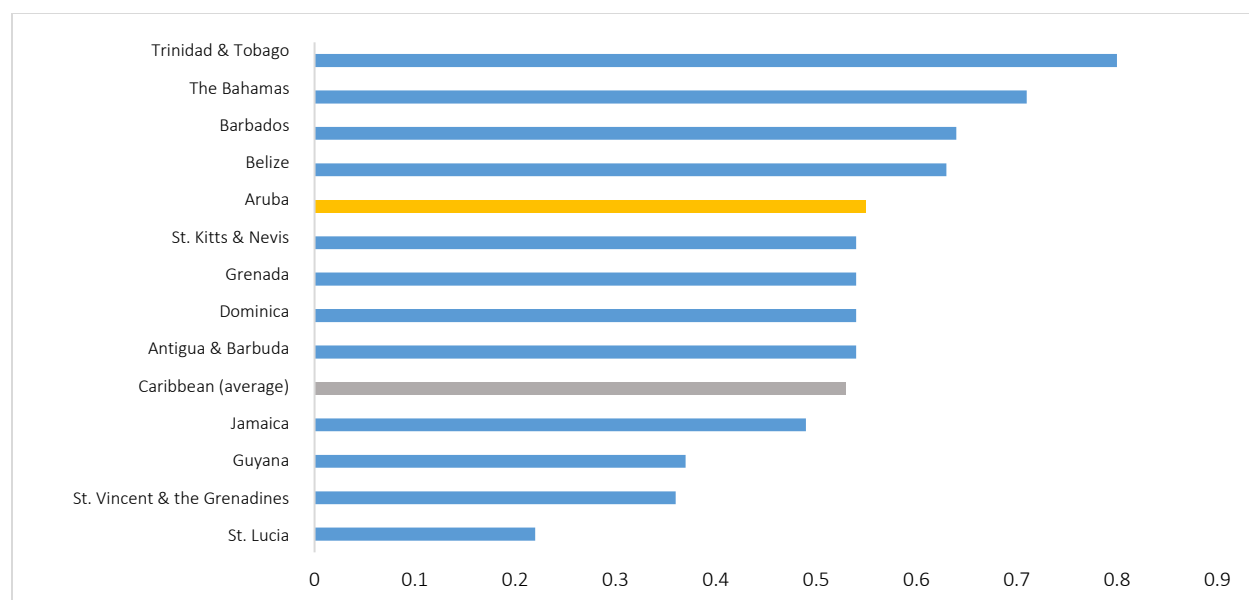


Figure 5.7. Labor market index of select Caribbean small states.<sup>71</sup>

## 5.4 Conclusions

Over the past decade, labor productivity and real economic growth in Aruba degenerated due to an interplay of different conditions and factors, including significant economic volatility, rapid tourism-induced population growth, decelerating labor force participation, stagnant wages, the lack of a (high-) skilled labor force, and the increasing (youth) unemployment. Domestic economic shocks also have aggravated labor conditions. Furthermore, the lack of a structural labor market and migration reforms has compounded an already weakening labor market.

Increasing productivity and labor force participation can unlock the growth potential for Aruba, which in turn requires comprehensive labor market reforms and the development of a sustainable skill-based immigration policy. It is imperative that structural labor (and educational) reforms embrace a vigorous agenda to tackle the labor market challenges in Aruba.

<sup>71</sup> CBA (2018); World Bank (2018).

Turning the tide on the diminishing labor productivity and developing a more productive and inclusive economy will require significant and concerted institutional and policy actions:

- Active labor market policies and specialized programs targeted at both youth and adult unemployment and labor participation. A simultaneous (educational) strategy is required to enhance the existing skill sets and reduce the skills-mismatch of both the young and ageing population.
- Wage distortions and wage differentials (with public sector wage levels and growth) should be reduced and mitigated. This requires specific reform of the government wage bill and general expenditures, as these crowd out (private sector) employment and aggregate labor productivity.
- Labor market reforms should have a dual policy focus on reducing rigid (outdated) labor laws and strengthening labor migration policies (targeted at young highly-skilled Aruban professionals) consistent with economic policies for diversification and development.
- The formalization of employment (reduce informal employment) and productive job creation require an enabling business environment that reduces the costs and complexity of starting and doing business.
- Digital labor market data systems should be strengthened by conducting quarterly labor market reviews and improving (open) data availability for measuring and management of labor policies and programs.

While Aruba's past economic growth relied almost exclusively on extensive (labor) growth, moving forward will require a knowledge-intensive labor model focused on redesigning the Aruban workforce of the 21<sup>st</sup> century. Improving labor skills, productivity, and participation is pivotal for nurturing an inclusive economy fostered by economic resilience. Without adequate human capital, structural reforms to strengthen the economy are likely to falter.



## 6. TECHNOLOGY & INNOVATION

Ryan R. Peterson and Jonathan Upegui

### 6.1 Introduction

Beyond the need of sustained capital inflows and labor reforms, as well as the necessity to safeguard monetary and fiscal sustainability, technical progress and innovation are primary factors in fostering economic resilience.<sup>72</sup> However, reflecting on the contemporary small-island economies in the Caribbean, a growing consensus is that despite progress over the past century, the Caribbean remains economically fragile with low productivity and high debt and unemployment. Notwithstanding a multiplicity of national policies and international assistance, Caribbean small states have accumulated a severe innovation deficit over the past decade.

While the foregoing structural challenges weaken absorptive capability and (static) economic resilience, the latter innovation deficit focuses on the adaptive and regenerative capacity for fostering dynamic economic resilience. Whereas Caribbean small states have tended to ‘bounce back’ from economic adversities, the question remains to what extent they are ‘bouncing forward’ with economic innovation. More important, whereas the public sector and government agencies play a predominant role in setting the stage for safeguarding monetary and fiscal sustainability, closing the innovation deficit and developing dynamic economic resilience require a committed, competent, and collaborative private sector of enterprising businesses. Fostering economic resilience is, thus, contingent on the institutional capabilities of both public and private sectors.

In this chapter, the innovation capability of select Caribbean small states is presented. Building on previous studies, the chapter addresses the current state of technology innovation and its impact on the external sector and the business environment. The exploitation of renewable energy (section 6.2) and the adoption of digital innovation technologies by the business sector (section 6.3) are discussed. The chapter concludes

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<sup>72</sup> In traditional macroeconomic terms and economic production functions, technical progress and innovation reflect total factor productivity (TFP), and are rooted in endogenous growth models in which technology and innovation are considered integral to economic productivity and growth.

with several insights and lessons learned on developing innovation spaces for strengthening economic resilience.

## 6.2. Exploitation of renewable energy

Economic development and social progress require energy, which for most of the Caribbean consists of fossil fuels and is largely imported. The high costs and price volatility of oil and other conventional forms of energy, combined with the challenges posed by climate change, now compel the Caribbean region to transit to domestic clean energy alternatives. The region is blessed with an abundance of renewable energy resources, with wind energy and solar PV energy ranking amongst the most proven and economically accessible options.<sup>73</sup>

Over the past decade, the Caribbean underwent remarkable growth in the adoption of renewable energy, especially in terms of wind and solar energy (see Figure 6.1). Nevertheless, renewable energy capacity remains limited to an estimated 20 percent across Caribbean small states, with relatively large(r) Caribbean states experiencing higher capacity (see Figure 6.2). Among the small-island Caribbean states, Aruba and Barbados enjoy a leading position.

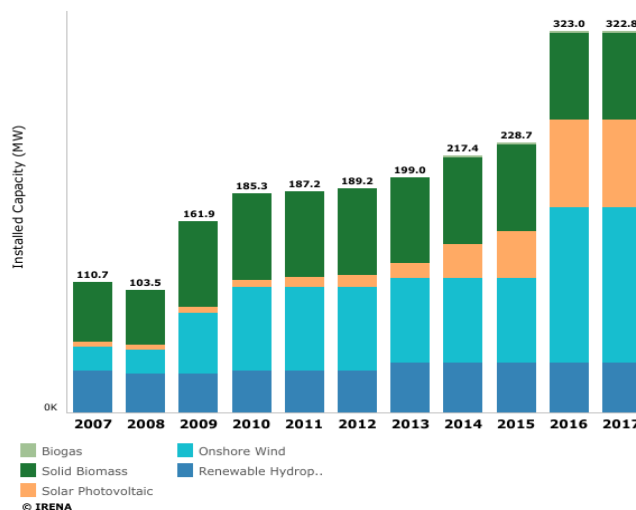


Figure 6.1. Renewable energy capacity across Caribbean Small States.

<sup>73</sup> Irena (2018).

Analysis indicates that the Caribbean is one of the most energy-intensive and energy-costly regions despite the abundance of natural energy sources and several national policies for promoting renewable energy. The high reliance on oil imports, in addition to the high demand placed by tourism services (e.g., hotel and transportation industry), generate relatively high electricity prices, and are a significant cost for businesses and households. International oil prices are a key source of economic inflation across the Caribbean.

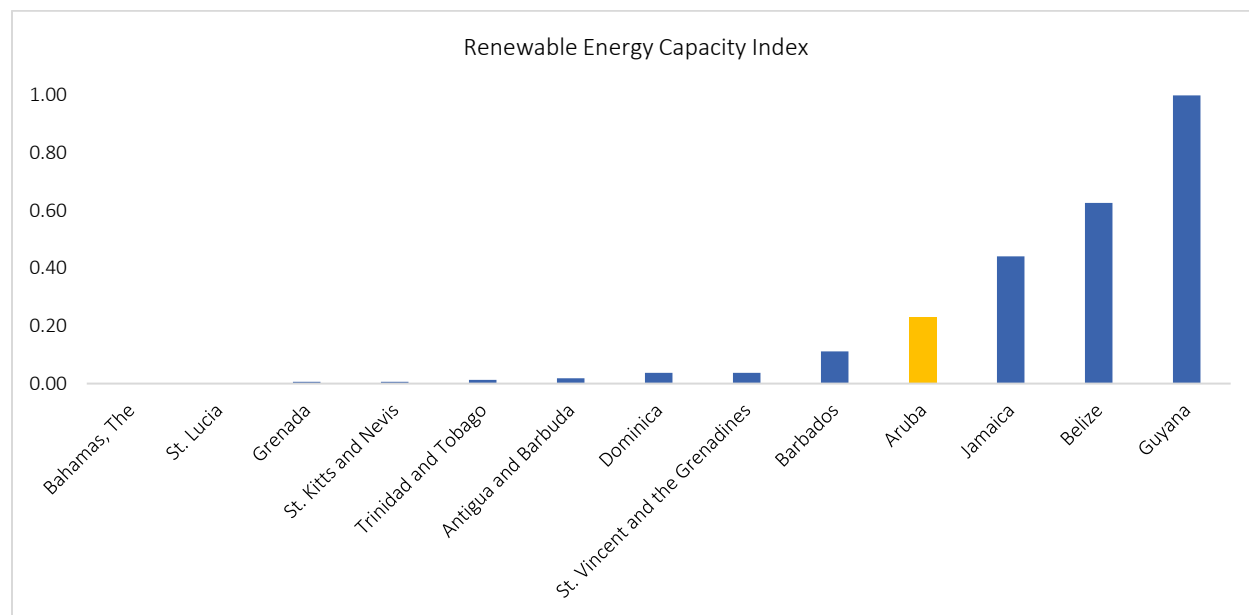


Figure 6.2. Exploitation of renewable energy in select Caribbean small states.<sup>74</sup>

Research identifies numerous challenges in the adoption and exploitation of renewable energy across the Caribbean, including but not limited to:<sup>75</sup>

- The lack of clear renewable energy legislation and regulatory frameworks;
- Business model uncertainty of utility industries and (state-owned) organizations;
- Inadequate financing due to high levels of public sector indebtedness and high initial capital investments for the private sector;
- Infrastructural limitations due to limited economies of scale and stability of renewable energy grids;

<sup>74</sup> Irena (2018); World Bank (2018).

<sup>75</sup> Caribbean Development Bank (2014).

- Limited availability of adequate renewable energy technology skills.

Turning towards the specific case of Aruba, in recent years the adoption of renewable energy has progressed steadily (see Figure 6.3). The Government of Aruba has consistently promoted and stimulated the shift towards renewable, affordable, and sustainable (RAS) energy, and notable investments have been made by the utility industry.<sup>76</sup>

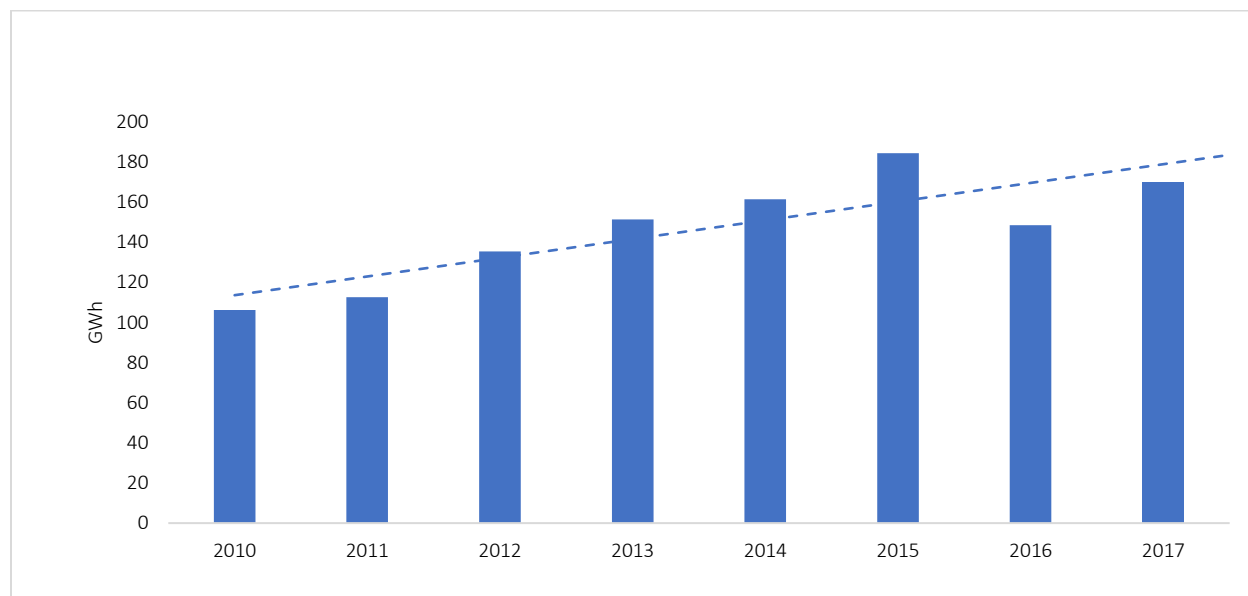


Figure 6.4. Renewable electricity generation (GWh; Aruba 2010-2017.)<sup>77</sup>

It is estimated that at least 20 percent of total energy capacity currently stems from renewable energy, with wind energy accounting for the larger part (see Table 6.1). Whereas residential households account for an estimated 40 percent of energy consumption, 60 percent of energy is consumed by commercial businesses, with at least one-third of that by the tourism and hospitality sector.

<sup>76</sup> Energy Policy, Government of Aruba (2019).

<sup>77</sup> Irena (2018).

Table 6.1. Stylized facts of renewable energy in Aruba.<sup>78</sup>

Dimension	Indicators	
Energy dependency	Share of GDP spent on fuel imports	16%
	Fossil fuel imports as percent of total electricity	80%
Energy infrastructure	Total generation capacity	230 MW
	Total annual consumption	990 GWh
Renewable energy capacity	Wind energy	17% of total
	Solar energy	1.7% of total
	Waste to energy	0.9% of total
	Estimated total renewable energy	20% of total
Energy regulatory framework	Domestic energy regulatory agency	-
	Adoption of energy efficiency standards	-
	Net metering/billing applied	Adopted in 2012
	Tax incentives (reduced import duties)	Adopted in 2013

In the case of Aruba, lowering the dependency on oil imports would be beneficial to strengthening the external sector, and thus reducing economic vulnerability (e.g., import dependency) and volatility (e.g., oil prices and inflation). Total imports of oil products contracted significantly over past decades due to the closing of the oil refinery, in addition to several energy efficiency improvements (see Figure 6.4).

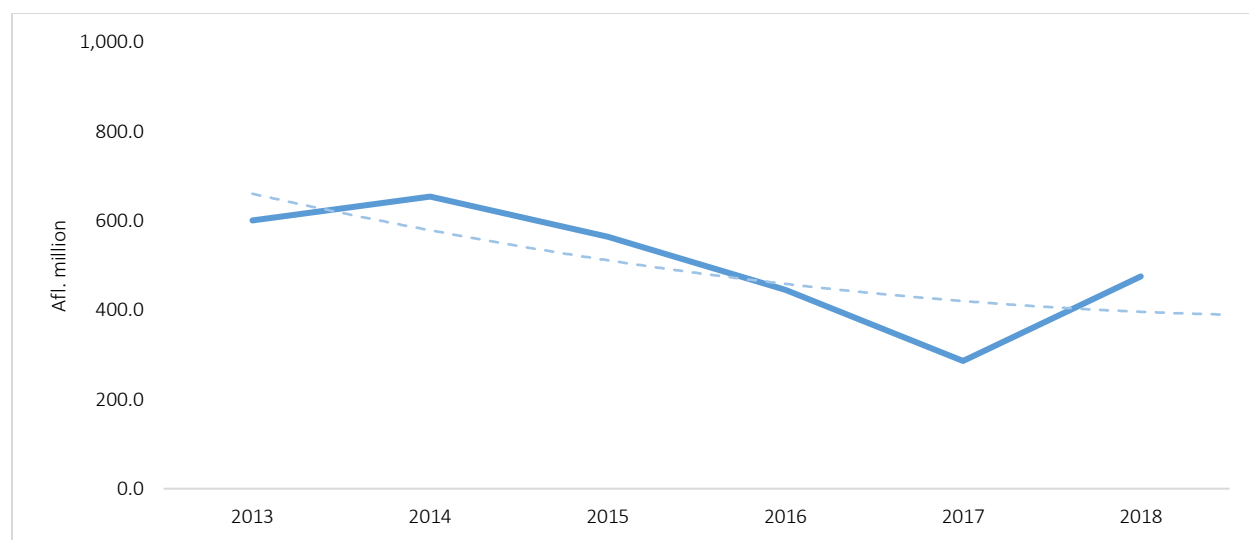


Figure 6.4. Total oil imports in balance of payments.<sup>79</sup>

<sup>78</sup> Irena (2018).

<sup>79</sup> CBA (2018).

Scenario analysis indicates that an estimated 10 percent renewable energy efficiency gain translates into 78,731 fewer barrels of HFO imports, which imply an annual savings of Afl. 10.6 million in HFO imports. The benefits of increasing domestic renewable energy capacity are not only cost savings and efficiency, but also a reduction in oil import dependency and the outflow of reserves, thus strengthening the balance of payments.

### **6.3. Digital technologies and business innovation**

Whereas tourism and manufacturing companies consume the lion's share of energy across Caribbean small states, well over 80 percent of the private sector consists of small and medium-size enterprises (SMEs). Most SMEs in the Caribbean operate in the services industry, including, e.g., tourism, financial services, retail/wholesale, construction, and transportation. A smaller portion of SMEs also operates in the high-tech/ICT, energy, and (international) business services. Despite the diversity, these small businesses share several distinct features:<sup>80</sup>

- *Micro and maturing business*: The majority of SMEs can be classified as micro to small enterprises (with less than 100 employees), of which almost 70 percent has fewer than 50 employees. The average age of an SME ranges between twenty and twenty-five years. Analysis suggests that the private sector has matured over the past two decades, after experiencing an 'entrepreneurial boom' in the early 1990s.
- *Domestic focus*: An estimated 85 percent of SMEs is domestically-owned. The domestic focus also is present in origin of sales, with domestic sales accounting for at least 80 percent of total sales. On average, less than 20 percent of SMEs exports directly to foreign markets or is strongly present in integrated supply and business value chains. The confluence of these conditions results not only in micro-enterprising in terms of size, but also in terms of small markets and narrow margins.
- *Narrow margins*: The combination of local ownership, domestic focus, and local competition creates limited opportunities and narrow margins. Sales growth, thus, tends to be limited. In addition, a significant part of the competition also stems from informal (unregistered) businesses.

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<sup>80</sup> Peterson (2016).

The narrow margins also are influenced by relatively high tax rates and significant tax burden imposed by the government.

- *Seeking financing*: On average, less than 50 percent of SMEs has a bank loan, with the majority making use of personal accounts. On average, banks and other credit institutions provide 38 percent of investments and 49 percent of working capital, with the majority of banks requiring significant collateral. Consequently, access to capital and affordable financing is considered one of the key constraints for business development, especially among entrepreneurs and start-ups.
- *Competitive orientation*: In combination with the foregoing structural features, competitive advantages are more likely to be sought in business efficiency and costs, rather than quality or innovation. On average less than 15 percent of SMEs invests in new technologies. Only one in five SMEs is internationally certified in terms of quality, and less than 50 percent of SMEs invests in service improvements and personnel training.

The enterprise profile that emerges from the Caribbean private sector is that of a relatively simple and standard (unsophisticated) business model with a strong focus on offering basic products and services and competing locally, based largely on cost and price. In terms of future orientation, ‘surviving’ rather than thriving seems to be the operative *modus operandi* across the Caribbean private sector, with indications that it is a ‘rough neighborhood’ for doing business.<sup>81</sup> In reviewing the foregoing general business features, the realities of an innovation deficit are clear and present. Except for a handful of innovative and leading businesses, world class enterprising remains severely underdeveloped in the Caribbean.

When reviewing the business environment in Aruba specifically, many of the foregoing observations and features resonate. Analysis indicates that the Aruban business environment is characterized by small businesses, which tend to operate solely domestically. At least 75 percent of Aruban businesses indicate that they compete on costs and offering the best price. For two-thirds of businesses, taxes and import (customs) procedures are considered a significant burden for doing business. Less than 20 percent of small businesses uses sophisticated communication and/or marketing technologies, and less than one-fifth of businesses experiments with new ideas or invest in product and service innovation (see Table 6.2).

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<sup>81</sup> IDB (2014).

Table 6.2. Stylized facts of the business environment in Aruba.<sup>82</sup>

Dimension	Indicators	Percentage (% of SMEs)
<b>Competitive strategy</b>	Compete with innovation	22
	Importance of business innovation	38
	Collaboration with start-ups/entrepreneurs	16
<b>Digital Technologies</b>	Digital technologies geared at process/product innovation	29
	Propensity to use new digital technologies	38
	Use of mobile applications	35
<b>Market Research and Development</b>	Use of sophisticated marketing technologies	26
	Use of advanced digital applications	27
	Extent of R&D investments	16
<b>Education and training</b>	Adequate labor market supply for a competitive economy	10
	Adequate education for a competitive economy	11
	Priority for developing innovation capabilities	19
	Invest in training and development	24

#### 6.4. Conclusion

Although opportunities for innovation abound across Caribbean small states, these opportunities remain largely unrealized. Benchmarking Aruba among other Caribbean peers reveals that, although Aruba is qualified as above average, significant innovation deficits persist (see Figure 6.5). Despite the potential and different policy ambitions, Aruba remains largely dependent on imported fossil fuels. Renewable energy capacity is nascent with energy technology adoption lagging across households and commercial businesses. Whereas initial tax incentives were provided to foster renewable energy usage, the lack of a comprehensive regulatory framework, energy demand policies, and the required financial investments is considered a significant barrier to progress. Furthermore, the lack of energy efficiency standards and specific skill sets also seems to dampen renewable energy innovations. Thus, a confluence of both energy supply and demand factors must be resolved to spur further renewable energy innovation.

In moving forward, a clear and present need exists to nurture innovation capabilities to diversify trade (imports and exports) and the economy. After more than thirty years of doing business as usual, the economic resilience of Aruba will depend on infusing innovation and entrepreneurship across the economy. While previous national policies and investment programs have focused on stimulating and supporting

<sup>82</sup> CBA (2018).



small businesses and start-ups, these initiatives have proven necessary, yet insufficient, in light of several persistent conditions and business challenges.

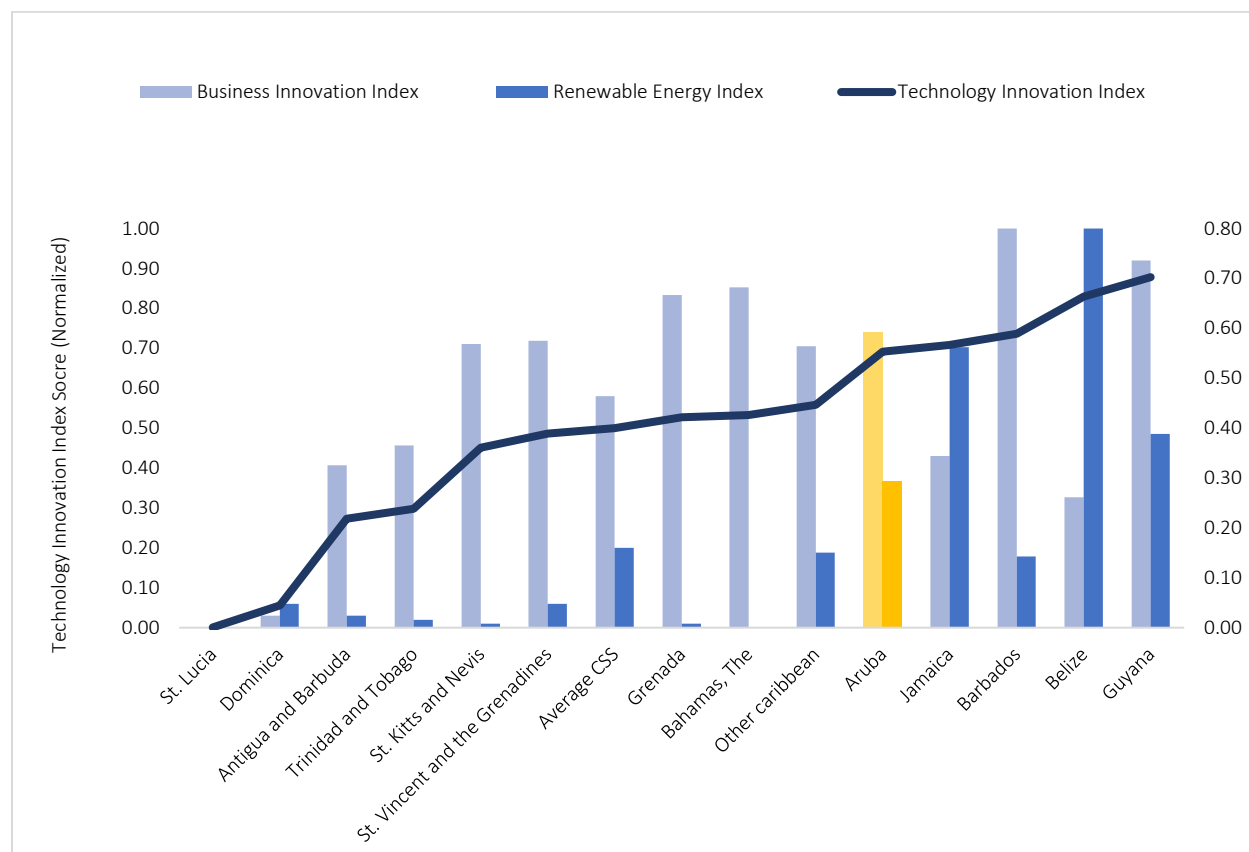


Figure 6.5. Technology Innovation Index for select Caribbean Small States.<sup>83</sup>

Merely focusing on new business ventures or small businesses, without the inclusion and involvement of public and or private sector institutions, will not suffice in developing entrepreneurial ecosystems and building the requisite economic resilience for Aruba. While the right (market) conditions for doing business need to be created, equal effort is required in leading and managing enterprise innovation, which is first and foremost a prerogative of the private sector. Fostering the economic resilience of Aruba will rely on building the ‘creative capital’ and innovation competencies of a new generation of leaders and entrepreneurs. Nurturing these competencies and talents should be infused throughout (all levels of) the

<sup>83</sup> CBA (2018), Irena (2018); Peterson (2016); World Bank (2018).

educational system, including primary, vocational, and adult learning programs. These innovation competencies necessitate structural rethinking and redesign of educational systems and values. Educational and other institutions for professional and entrepreneurial development should identify, integrate, and incubate 21<sup>st</sup> century innovation skills in their programs.

Establishing and fostering networks and linkages between and among educational, financial, and established/emerging business ecosystems are imperative. To this end, the private sector should be a key partner in the development and execution of these programs by means of, e.g., public-private partnerships, management traineeships, entrepreneurial internships, service learning, and centers of learning, development, and innovation.

The Aruban route for economic resilience emphasizes the need for leading change and transformation in building the requisite resilience for the future. This pathway for innovation underscores the systemic transformation of our economies and social realities based on shared principles of trust and transparency, transactions and transformations, and talent and tenacity. It emphasizes the importance of commitment and confidence, courage and creativity, as well as communication and collaboration across private and public institutions to foster economic resilience.

If Aruba is to build a stronger more resilient economy,<sup>84</sup> then public and private sector institutions can no longer rely on past paradigms and policies of ‘bouncing back’. Thus, a clear and present requirement and responsibility exist to explore and design new modalities and mechanisms for ‘bouncing forward’ towards new routes of development and innovation.

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<sup>84</sup> Economic Policy 2019-2022, Government of Aruba (2019).

## 7. CONCLUSION & RECOMMENDATIONS

Ryan R. Peterson and Leo De Haan

*We are called to be architects of the future, not its victims.*

*R. Buckminster Fuller*

### 7.1. Introduction

The thematic macroeconomic studies presented in this report reveal that Aruba, like many other small island states in the Caribbean, faces significant economic vulnerabilities. Reflecting on their past and present economic experiences results in a growing acknowledgement that, despite relatively high GDP per capita levels and notwithstanding structural reforms, Caribbean small island states continue to experience vulnerabilities with low growth, declining productivity, and increasing fiscal, social, and environmental pressures. With rising geo-political uncertainties and accelerating technological disruptions, the quest for economic resilience is a prime directive for policymakers and innovators. The basic questions addressed in this report are: *How resilient is Aruba's economy, when compared to the economies of other select Caribbean small states? How can Aruba strengthen its economy and foster economic resilience?*

In this chapter, an answer is provided to these questions based on the integration of the findings of the thematic analyses, within the conceptual and measurement limitations of this study.<sup>85</sup> More specifically, in following the operational definition of economic resilience in this study (see chapter 1), a distinction is made between static and dynamic economic resilience, each consisting of different subdimensions and indicators (see Figure 7.1). The dimension of static economic resilience consists of monetary, fiscal, and current account indicators, whereas dynamic economic resilience is measured by labor productivity and technology innovation indicators. In section 7.2., the assessment of Aruba's economic resilience is

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<sup>85</sup> The lack of available and reliable data for the Caribbean is recognized as an enduring and critical impediment to a comprehensive analysis and understanding of economic development. This study made use of multiple national and international databases in an effort to optimize data quality. Furthermore, the results of this study should be interpreted within a specific time-frame (2017 – 2018), and thus provide a cross-sectional analysis of select Caribbean small states.

discussed, followed by the presentation of several policy recommendations for fostering economic resilience in Aruba (section 7.3).

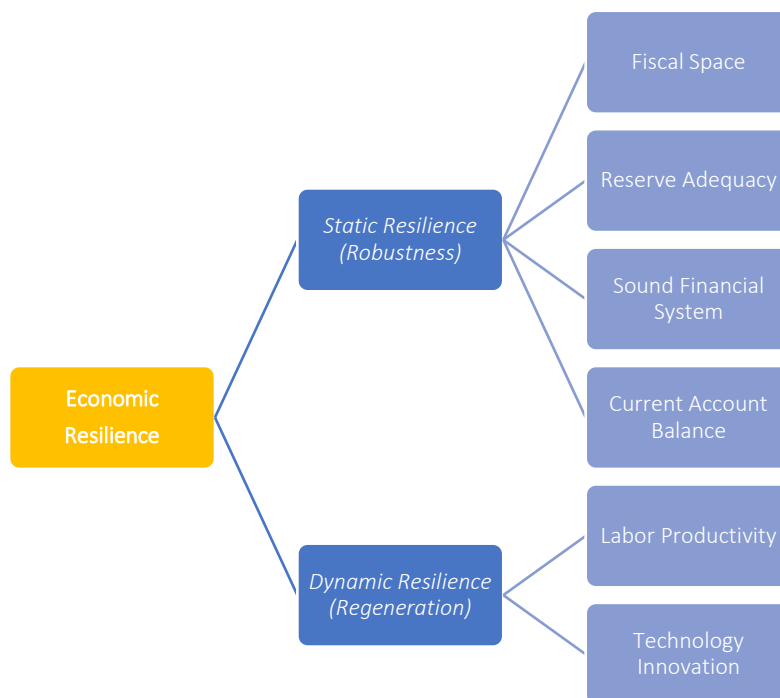


Figure 7.1. Measuring the macroeconomic dimensions of economic resilience.

## 7.2. Assessing the economic resilience of Aruba

Based on the distinction between static and dynamic economic resilience, this section measures the absorptive capability and the adaptive capability of select Caribbean small states. The salient features of robust and regenerative small island economies in the Caribbean are presented, and the relative strengths and weaknesses of Aruba's economic resilience are discussed.

### Static economic resilience: Measuring Aruba's absorptive capability

Static economic resilience comprises three sub-indices covering the monetary reserve adequacy, fiscal space, and the current account balance. The analysis of Caribbean small states indicates a wide diversity in terms of economic robustness, which tends to be clustered in a distinct profile of relative absorptive capability (see Table 7.1).

Robust economies enjoy a significantly higher capability to absorb external shocks and have structurally strengthened their macroeconomic buffers. These resilient economies are characterized by distinct macroeconomic and structural features, including:

- Optimal reserves and monetary reserve adequacy (ARA metric: 95-110 percent);
- Moderate and stable inflation rates (Average annual inflation rate: 1.5-2.0 percent);
- Sound financial system (Prudential liquidity ratio: 25-30 percent);
- Appropriate fiscal space and debt sustainability (Debt-to-GDP ratio: 50-55 percent);
- Restrained government expenditures (Expenditure-to-GDP-ratio: 20-25 percent);
- Balanced current account (Structural current account balance-to-GDP ratio: 0-5 percent);
- Focused foreign direct investments in the (renewable) energy sector (FDI-to-GDP ratio: 5-10 percent);
- Economic diversification and multiple productive industries (e.g., wholesale and retail services, manufacturing, and technology industries).

*Table 7.1. Static economic resilience in select Caribbean small states.<sup>86</sup>*

	Monetary Reserve Adequacy Index	Fiscal Space Index	Current Account Balance Index	Static Economic Resilience (Average)
<b>Aruba</b>	<b>0.26</b>	<b>0.74</b>	<b>0.25</b>	<b>0.42</b>
Antigua & Barbuda	0.03	0.73	0.18	0.31
The Bahamas	0.14	0.77	0.16	0.36
Barbados	0.00	0.00	0.20	0.07
Dominica	0.13	0.81	0.10	0.35
Grenada	1.00	0.79	0.00	0.60
Guyana*	0.40	1.00	1.00	0.80
Jamaica**	0.44	0.46	0.21	0.37
Saint Kitts & Nevis	0.58	0.83	0.09	0.50
Saint Lucia	0.11	0.81	0.24	0.39
Saint Vincent & the Grenadines	0.82	0.68	0.06	0.52
Trinidad & Tobago**	0.28	0.86	0.28	0.47

\*not an island; \*\*considered a large(r) island state

<sup>86</sup> Based on calculations in previous chapters.

In addition, robust small island economies have experienced structural output growth (of at least 3 percent for several years consecutively), and have introduced several structural reforms to strengthen fiscal performance and the external sector over the past decade. The results conclude with the importance of seven (interdependent) macroeconomic dimensions for fostering economic resilience (see Figure 7.2).

Dimensions of economic robustness in Caribbean small states						
Reserve adequacy	Stable inflation	Financial soundness	Sustainable debt level and trajectory	Controlled government expenditures	Focused and stable foreign direct investments	Structural current account balance

*Figure 7.2. Dimensions of economic robustness in Caribbean small states.*

In comparing Aruba's economic profile to that of robust Caribbean small states, the analysis identifies several relative strengths and weaknesses, thus explaining Aruba's average position in terms of static economic resilience (see Table 7.1). With reference to monetary and financial stability, Aruba's reserves are largely adequate, yet underperform when benchmarked against the 100 percent ARA metric, due mostly to rising debt levels. Structural inflation generally has remained stable and modest. One of Aruba's key strengths lies in the structural soundness of its financial system with prudential liquidity ratios well above minimum thresholds.

Nevertheless, Aruba has faced several deteriorations over the past decade in terms of its debt sustainability, thus diminishing its fiscal space and placing a significant burden on reserves. Likewise, government expenditures tend to surpass more than 25 percent of GDP. The external sector weakened over the years with current account deficits and diminishing foreign direct investments. Structural reforms to diversify the economy have not (yet) been realized, and real GDP growth remains relatively low.

The confluence of these relatively structural features and Aruba's trade openness, in addition to the increasing exposure to (international and domestic) economic shocks, significantly weakened the robustness of Aruba's economy over time and in comparison to that of other Caribbean small states. Therefore, the requisite absorptive capability and macroeconomic 'buffers' to withstand and recover from crisis and shocks are limited in Aruba (see Figure 7.3). To summarize, relative to its high economic vulnerability, Aruba's static economic resilience is insufficient.

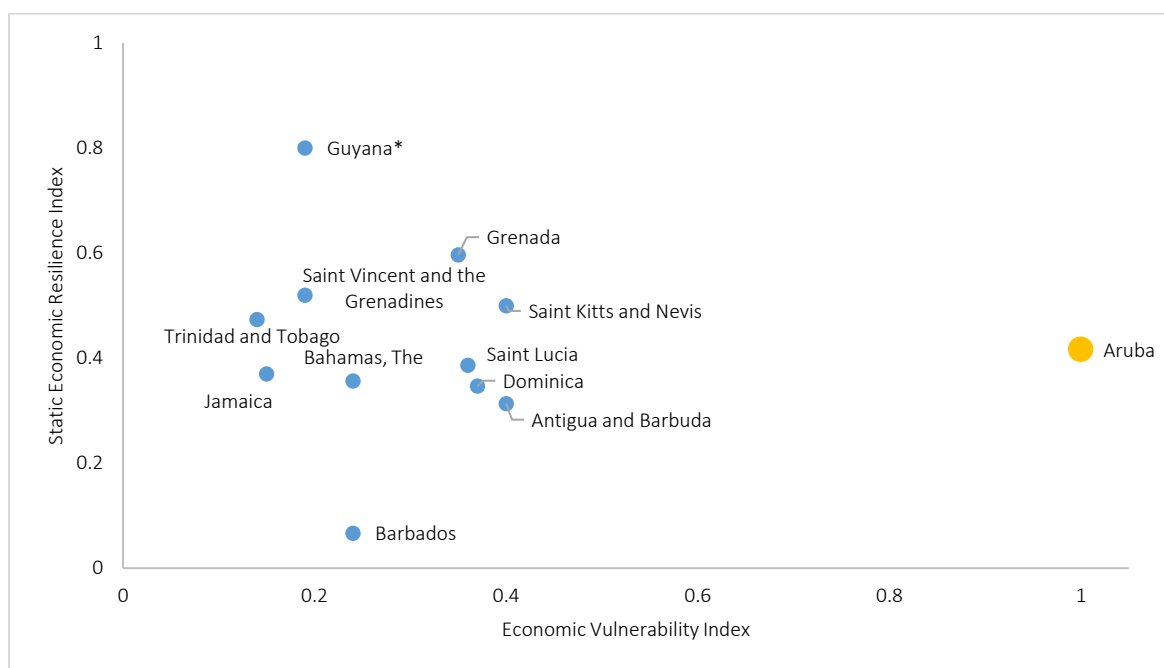


Figure 7.3. Plotting economic vulnerability and static economic resilience.<sup>87</sup>

### Dynamic economic resilience

Dynamic economic resilience comprises two sub-indices, including labor productivity and technology innovation, and describes the *adaptive capacity* of the economy to reinvigorate and regenerate economic growth (beyond the initial point of shock). The analyses indicate that Caribbean small states vary widely in their capacity to adapt to economic shocks and spur new economic growth (see Table 7.2). More specifically, dynamic economies are characterized by:

<sup>87</sup> Based on calculations in previous chapters.

- A participative (inclusive) workforce with relatively low unemployment (labor participation rates: +70 percent);
- A flexible labor market with limited wage and income distortions (low income inequality);
- A technically-skilled workforce and well-educated (secondary/tertiary education) labor market;
- A renewable energy regulatory framework and policies focused on both supply and demand management (renewable energy capacity: +30 percent);
- A competitive business environment focused on innovation and quality (business innovation: +40 percent);
- High use of digital technologies by commercial enterprises (digital adoption: +70 percent);
- Government capital expenditures earmarked for national innovation and research (government investments: +2 percent of GDP).

Table 7.2. Dynamic economic resilience in select Caribbean small states.<sup>88</sup>

	Labor Productivity Index	Technology Innovation Index	Dynamic Economic Resilience (Average)	Static Economic Resilience (Average)	Composite Economic Resilience
<b>Aruba</b>	<b>0.55</b>	<b>0.55</b>	<b>0.55</b>	<b>0.42</b>	<b>0.49</b>
Antigua & Barbuda	0.54	0.22	0.38	0.31	0.35
The Bahamas	0.71	0.43	0.57	0.36	0.47
Barbados	0.63	0.59	0.61	0.07	0.34
Dominica	0.54	0.04	0.29	0.35	0.32
Grenada	0.54	0.42	0.48	0.60	0.54
Guyana	0.37	0.70	0.54	0.80	0.67
Jamaica	0.49	0.57	0.53	0.37	0.45
Saint Kitts & Nevis	0.54	0.36	0.45	0.50	0.48
Saint Lucia	0.22	0.00	0.11	0.39	0.25
Saint Vincent & the Grenadines	0.36	0.39	0.38	0.52	0.45
Trinidad & Tobago	0.80	0.24	0.52	0.47	0.50

<sup>88</sup> Based on calculations in previous chapters.



Productive and innovative small island economies stand out due to their propensity for regulatory innovation (e.g., fiscal, labor markets, renewable energy, and entrepreneurship), in which the public sector plays an active role in designing new regulations for engendering inclusion and innovation. More important, (non-tourism) businesses tend to be more export-oriented and operate beyond domestic markets. Fiscal space permitting trade finance often is used as a policy instrument by pro-trade governments. The findings of this study yield seven distinct levers for regenerating economic growth in Caribbean small states (see Figure 7.4).

Dimensions of economic regeneration in Caribbean small states						
Participative, inclusive, and productive workforce	Flexible labor market with low income inequality	Technically-skilled workforce	Renewable energy capacity and regulation	Innovation-driven and export-oriented business environment	Adoption and usage of digital technologies and applications	Government investments in innovation and development

*Figure 7.4. Dimensions of economic regeneration in Caribbean small states.*

Relative to other Caribbean small states, Aruba lags in terms of dynamic economic resilience. The analysis identifies several relative strengths and weaknesses, thus explaining Aruba's moderate adaptive capability (see Table 7.2). Whereas Aruba scores relatively well in terms of renewable energy capacity, digital innovation lags in comparison to other Caribbean small states. The majority of SMEs in Aruba (still) do not enjoy the benefits of digital business and commerce, despite high consumer usage of mobile and internet.

Furthermore, the low and declining labor participation rate, in addition to the contracting labor productivity, are considerable obstacles to building dynamic economic resilience. Labor market reforms, although readily recognized as important, have not crystalized. Likewise, government investments are, on average, less than 2 percent of GDP, insufficient for building the required adaptive capability. Thus, the requisite adaptive capability to reinvigorate and regenerate economic growth is limited in Aruba. To

conclude, relative to its high economic vulnerability, Aruba's dynamic economic resilience is inadequate (see Figure 7.5).

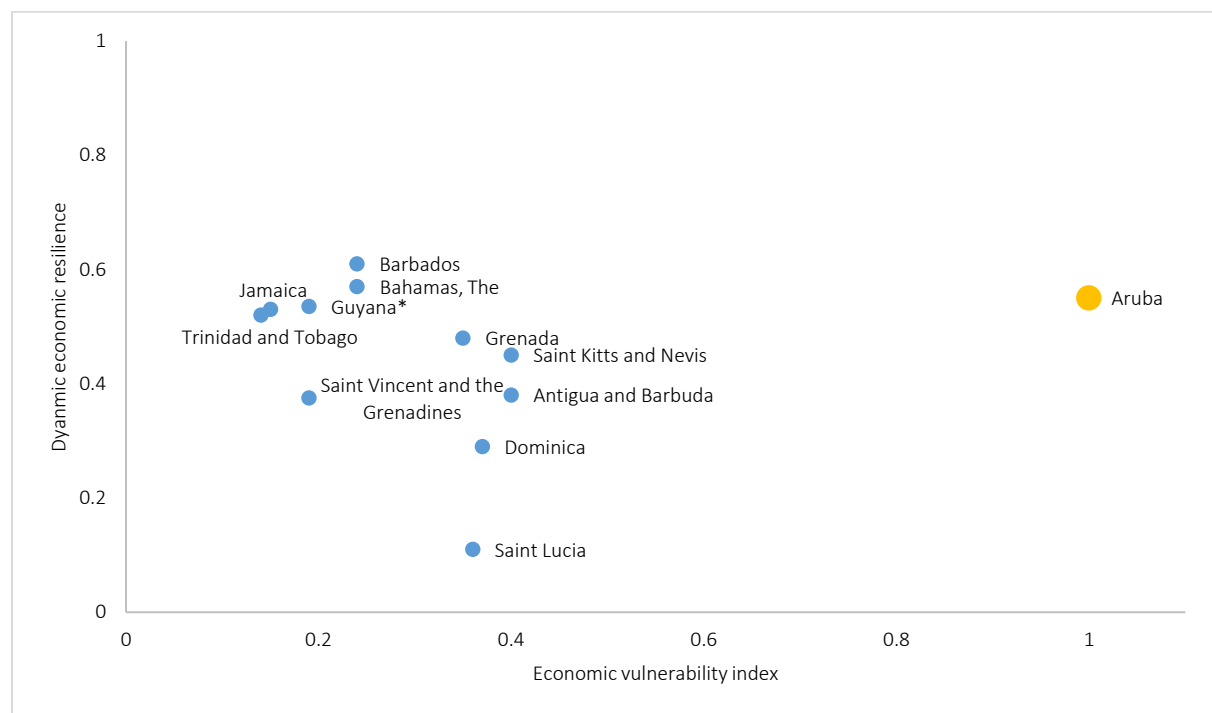


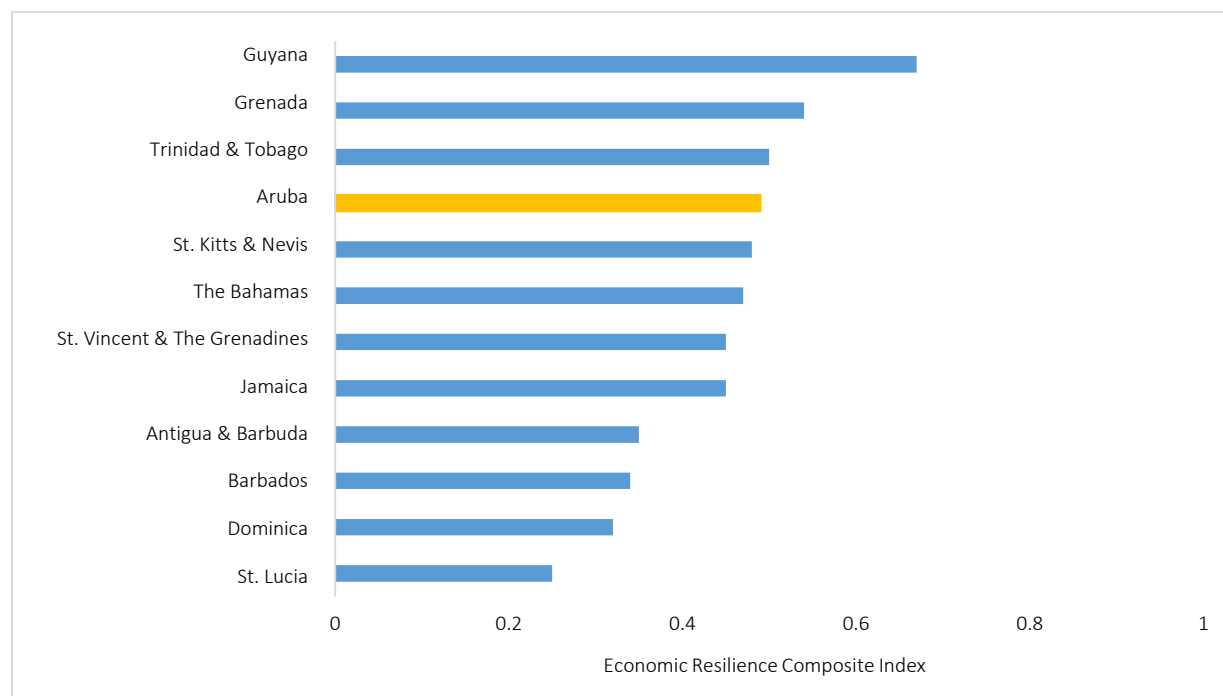
Figure 7.5. Plotting economic vulnerability and dynamic economic resilience.<sup>89</sup>

In assessing the (composite) economic resilience of Aruba, dimensions of both static and dynamic resilience are important. Consistent with previous conceptualizations and measurements, resilient small island economies are characterized by both absorptive and adaptive capabilities, which provide an integrated policy perspective of economic resilience. The latter is important to underscore as no single pillar or policy measure will suffice in fostering economic resilience. Economic resilience requires designing an appropriate mix of policies contingent upon the socioeconomic context of the (small) state in tandem with its specific policy ambitions and economic aspirations.

Based on a comparative analysis of economic resilience among select Caribbean small states, the results indicate that Aruba lags in terms of relative economic resilience. Consistent with the previous findings on the static and dynamic resilience of the Aruban economy, the outcomes reveal that Aruba falls short of the

<sup>89</sup> Based on calculations in previous chapters.

requisite economic resilience, especially when compared to its high level of economic vulnerability (see Figure 7.6).



*Figure 7.6. Economic resilience of select Caribbean small states.<sup>90</sup>*

However, in comparison to more resilient Caribbean small states, Aruba is the only high-income micro-state<sup>91</sup> with a service-based economy. Guyana and Trinidad & Tobago are middle to high-income countries with relatively larger populations and land mass, in addition to being independent states with a commodity-based economy. The findings indicate that among the small(er) island tourism economies in the Caribbean, including St Kitts & Nevis and The Bahamas, Aruba enjoys a relative advantage. Yet this advantage does not compensate for its high degree of economic vulnerability (see Figure 7.7). Small island tourism-dependent economies with significantly lower economic resilience than Aruba include St. Lucia, Dominica, Barbados, and Antigua & Barbuda.

<sup>90</sup> Based on calculations in previous chapters.

<sup>91</sup> Microstates have a population of less than 500,000 people.

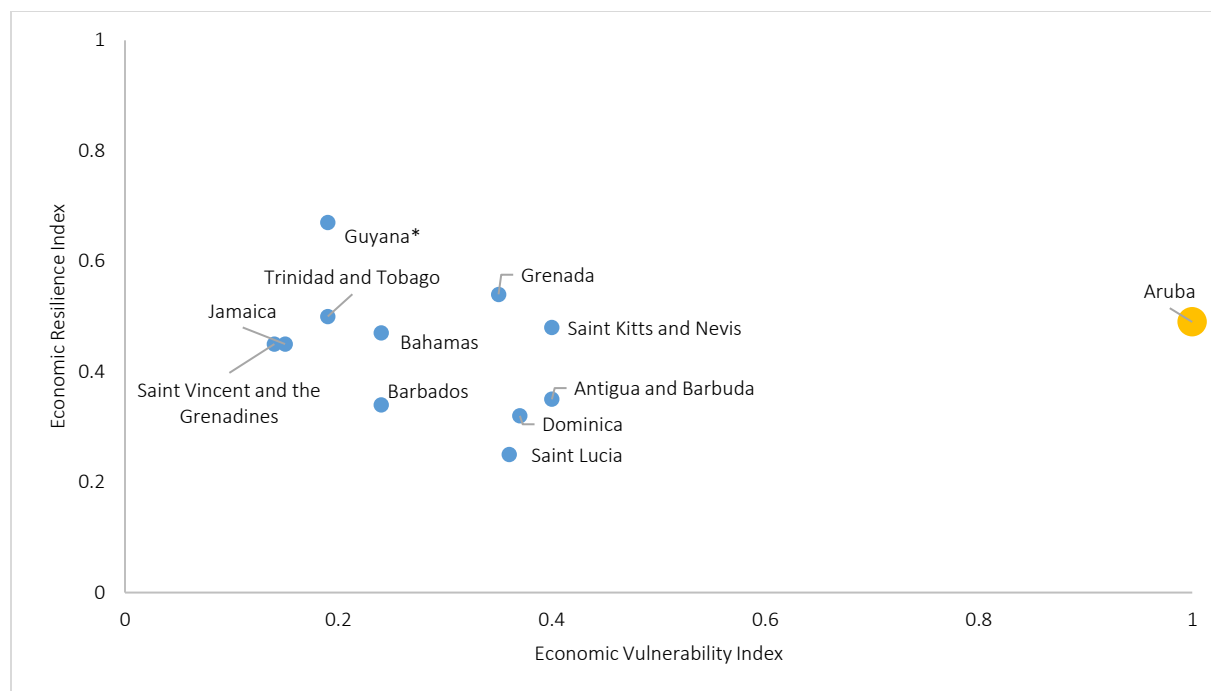


Figure 7.7. Plotting economic vulnerability and economic resilience of select Caribbean small states.<sup>92</sup>

### 7.3. Fostering economic resilience in Aruba

In fostering the economic resilience of Aruba, the results of this study indicate that multiple macroeconomic policy pillars are at play to enable both static and dynamic economic resilience. Building a resilient small-island economy, especially under conditions of significant economic vulnerability, requires the simultaneous consideration of various interdependent paths for economic development. Consequently, structural reforms for fostering economic resilience need to be designed and executed in an integrated and balanced manner that bolsters both absorptive and adaptive capabilities in a synchronized and strategic manner.

To integrate the different policy levers toward executing the requisite structural transformation, Figure 7.8 presents a ‘policy compass’ for fostering economic resilience in Aruba. The policy compass builds on the multiple macroeconomic dimensions of economic resilience and provides a comprehensive framing of policy pathways and recommendations for reinvigorating the Aruban economy. It represents an integrated roadmap for strengthening macro-fiscal and external sectors (i.e., static economic resilience), as well as bolstering economic productivity and innovation (i.e., dynamic economic resilience). The policy compass

<sup>92</sup> Based on calculations in previous chapters.

offers no ‘silver bullet’ or standard solution for fostering economic resilience in Aruba. More important, the underlying premise is the need to (metaphorically) both *nurture the roots and cultivate the routes* for a strong and sustainable Aruban economy.

First and foremost, strengthening *Aruba’s macro-fiscal environment* will require fiscal sustainability and monetary stability. While tax reforms are currently in progress in Aruba, the structural fiscal reform should intensify efforts to expand the limited fiscal space and significantly reduce the debt burden. Beyond the shift from direct to indirect taxes and the introduction of new consumer goods taxes, consideration should be given to strengthening tax revenue management and tax compliance via electronic tax payment systems, as well as establishing an independent (privatized) tax revenue authority. Likewise, concerted policy actions are required to control and curb government expenditures to sustainable and fiscally prudent levels. The introduction and use of digital government systems (both intra-departmental and public services) would provide one route to that goal. Improving fiscal sustainability requires the design of comprehensive fiscal rules, which are closely monitored by an independent fiscal council. In tandem, government capital expenditures and investments should be focused on digitizing public sector administrative, redesigning organizational structures, as well as upgrading public servant skills.

From a *monetary and financial stability* perspective (**Pillar I**), reserve adequacy and financial soundness need to be consolidated and maintained. Reducing Aruba’s fiscal debt in a structural and sustainable manner would significantly alleviate the current pressure on foreign exchange reserves, thereby improving reserve adequacy. Likewise, reducing import dependency (on fossil fuels and generic food products) would support these reserves and mitigate deeper economic vulnerabilities. Without this, future monetary policy decisions should consider gradually extending the reserve requirement to safeguard monetary stability.

Improving the monetary policy mix should focus on enhancing the monetary transmission mechanisms by limiting excess liquidity in the financial sector. Issuance of certificates of deposit should be re-activated, and capital markets should be deepened through, e.g., the issuance of ‘renewable energy’ government bonds, in tandem with the reduction of energy imports. The call for diversification alludes to the critical role of the external sector in fostering the economic resilience in Aruba.

From an *external sector* perspective (**Pillar II**), several policy pathways are recommended to boost the balance of payments. By reducing import dependency (of, e.g., energy and food), substantial gains could be made within five years to reduce economic vulnerability. Hereto, renewable energy regulatory frameworks and standards, as well as significant (foreign direct) investments are required, without losing

sight of the social-ecology of Aruba. Foreign direct investments (FDI) should be stimulated and focused on renewable energy and technology innovation at a national scale, thereby optimizing spill-over effects and domestic business linkages. As a principle policy, FDI should target import- and export-diversifying reforms, either through structurally easing import dependency or expanding value-added service exports, such as regional high-tech and logistic service exports, in addition to creative and wellness tourism industries. Furthermore, consideration should be given to the partial and selective liberalization of capital accounts (for example, renewable energy and national technology innovation), which would facilitate the inward flow of FDI, and thus strengthen the balance of payments towards diversifying the economy.

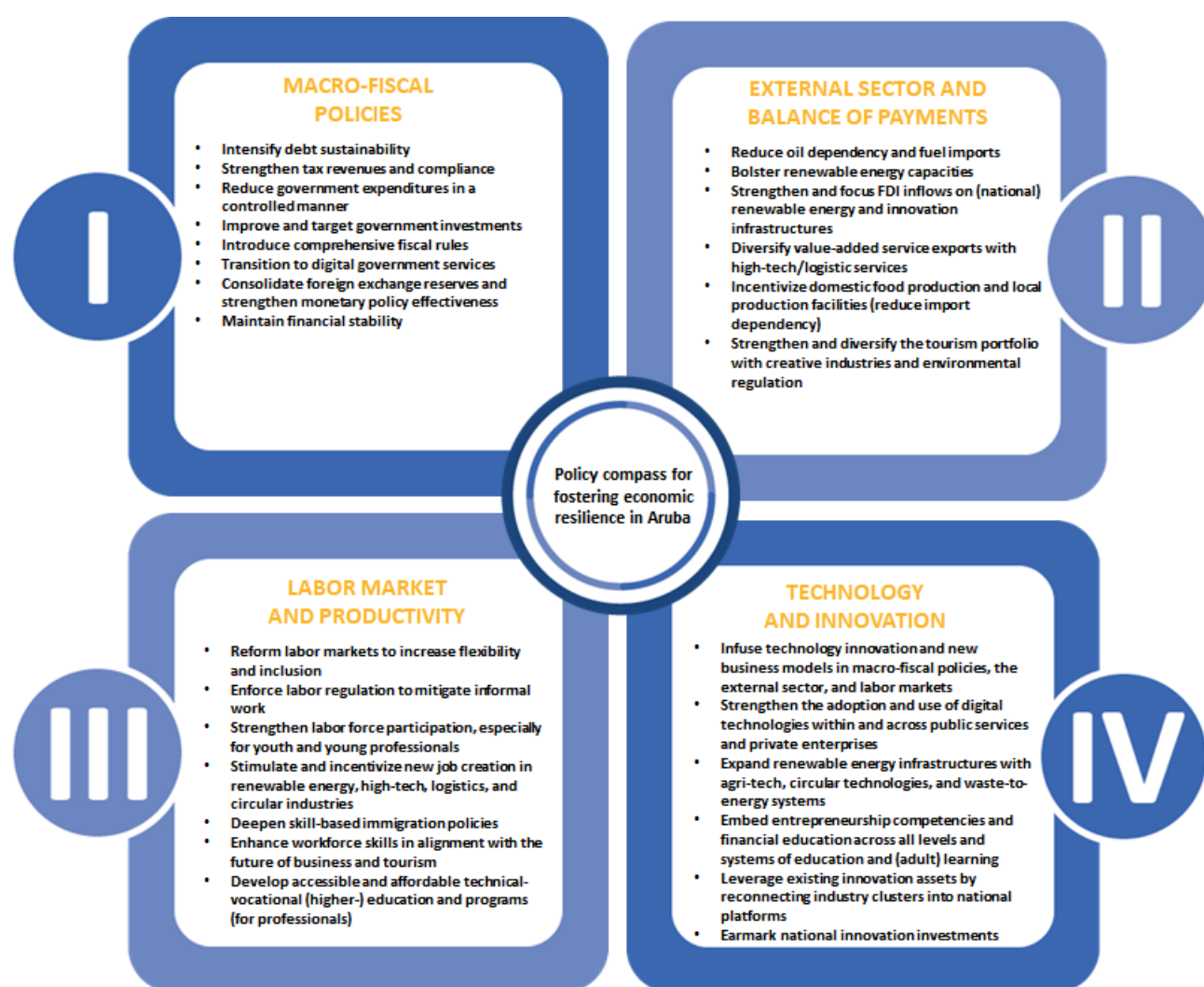


Figure 7.8. Policy compass and recommendations for fostering economic resilience in Aruba.

Improving *labor market flexibility and productivity* (**Pillar III**) is integral to fostering economic resilience in Aruba. Productivity and labor force participation are essential to unlocking and reinvigorating the growth potential of Aruba. In tandem with fiscal and economic reforms, comprehensive labor (and education) reforms are called for. It is imperative that these structural ‘human capital’ reforms embrace a vigorous agenda to tackle low labor force participation and productivity in Aruba. Labor market regulatory frameworks should be modernized by allowing for more employment flexibility in a transparent and controlled fashion (respecting employee rights and responsibilities).

The execution of a (technology) skill-based immigration policy as well as the strengthening of technical vocational (higher-) education and programs for youth and adults are needed. Active labor market policies and specialized programs targeted at both youth and adult unemployment would improve labor force participation rates. Furthermore, a simultaneous educational strategy is required to enhance the existing (non-technical) skill sets and reduce the skills-mismatch of both the young and aging population.

Furthermore, wage distortions and wage differentials (with public sector wage levels and growth) should be reduced and mitigated. This requires specific reform of the government wage bill and general expenditures, as these crowd out private sector employment and negatively impact aggregate labor productivity. Employment formalization, i.e., reducing informal employment, and productive job creation also require an enabling business environment that reduces the costs and complexity of starting and doing business. Labor market reforms should, therefore, balance the need for flexibility and fairness in seeking to build a more inclusive and equitable economy.

From an evidence-based labor policy and reform perspective, labor market data systems should be strengthened by conducting quarterly labor market reviews and improving (open) data availability for monitoring and managing specific labor market reforms and productivity-enhancement programs. Thereto, digital technologies and (labor) data applications provide a readily available avenue for strengthening policy intelligence.

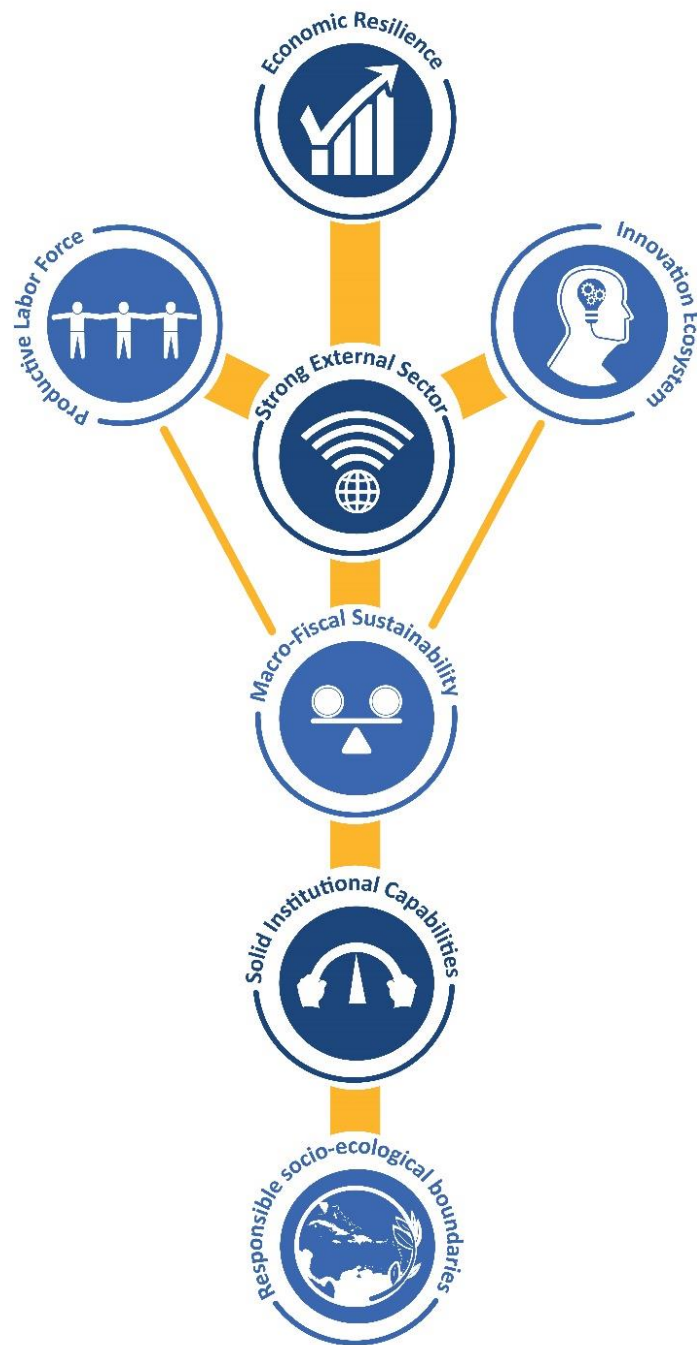


Figure 7.9. Fostering economic resilience: from roots to routes.



Building on the previous pillars for fostering economic resilience, *technology and innovation* (**Pillar IV**) are integral to supporting the absorptive capability and building the adaptive capability of the Aruban economy. Structural reform and transformation of the Aruban economy rely increasingly on the institutional capability to innovate. The adoption and use of digital technologies are central to developing electronic tax systems in addition to realizing digital governance in the public sector (i.e., Pillar I). Likewise, technology and innovation are vital to enhancing existing renewable energy capacities, developing domestic food production facilities, such as agri-tech, and bolstering opportunities for (local) electronic commerce, (international) digital retail, (regional) logistic services, and the creative industries (i.e., Pillar II).

Building the innovation pillar for fostering economic resilience in Aruba should recognize existing efforts to stimulate innovation and entrepreneurship, and extend these initiatives in a systematic and systemic way. Existing ‘innovation assets’ should be leveraged across national platforms of public and private sector institutions. Dedicated government investments should be earmarked to national innovation programs, in which (international and local) institutional and private investors are actively involved.

In terms of human capital and building 21<sup>st</sup> century innovation skills, entrepreneurship and financial education should be infused across all levels of education and (adult) learning. Building on and extending the structural labor market reforms (Pillar III), technology and innovation competencies should be integrated in new ‘open source’ learning programs.

In conclusion, the foregoing pillars for fostering economic resilience in Aruba build on multiple macroeconomic fundamentals to strengthen both static and dynamic economic resilience. Structural reforms for economic resilience need to be designed and executed in an integrated and balanced manner with due recognition of and responsibility for the socio-ecological island boundaries (see Figure 7.9). Fortifying institutional capabilities and building solid (economic) institutions of ingenuity and integrity are, thus, imperative on the road to economic resilience in Aruba. Ultimately, the Aruban economy depends on how we nurture our foundational roots and cultivate future routes.





