

Business Unusual: Towards Export Diversification for Sustainable Growth and Development in SIDS

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Abstract: The COVID-19 pandemic which started out as mainly a global health crisis quickly evolved into an economic crisis that plunged the world into one of the deepest recessions since World War II. Even more so, its impact has been felt in many Small Island Developing States (SIDS) such as those of the Caribbean whose largely undiversified export bases made them much more vulnerable to the global economic fallout. Moreover, in an attempt to manage the health and social impacts of the pandemic, the counter-cyclical fiscal policies adopted by many governments only served to increase debt levels and further threaten growth and development prospects. This crisis, however, has highlighted the need for these countries to actively pursue policies aimed at diversifying their economies as they seek to rebuild. While diversification has the direct impact of providing a buffer against export earnings volatility thereby stabilising growth, it also allows for the spillover of more advanced technology and knowledge into the wider domestic economy thus further boosting productivity and growth. This paper seeks to investigate the relationship between export diversification and growth in SIDS. The results show that countries with a higher degree of diversification of goods experience faster growth. On the other hand, it shows that specialising in, and exporting of, services also enhance growth. Such results provide evidence of the possible economic benefits of diversification in goods exports and should therefore signal to policy makers the need for policies aimed at supporting diversification. Importantly, the paper supports the development of a dual economic strategy based on diversifying merchandise goods, where possible, through clearly articulated industrial policies but also suggests that greater focus should also be placed on diversifying within the services sector.

Keywords: Caribbean, Development, Diversification, Export concentration, Growth, SIDS, Trade.

1. Introduction

Small Island Developing States (SIDS) are a group of 58¹ countries classified by their peculiar social, economic and environmental challenges and their need for a unique strategy to foster growth and sustainable development (United Nation n.d.). These countries are generally characterised by their small landmass, remoteness, low-lying coastal areas, small populations, and their high exposure to environmental and economic shocks (Briguglio 1995). In addition to the above, a lack of resources, insufficient economic infrastructure, deficiency of skilled labour, and high transportation costs leave many of these small states to specialise in a limited number of goods and services (primarily agriculture and tourism) and dependent on a few trading partners (International Monetary Fund [IMF] 2014). This concentration in economic activity not only leaves these countries less resilient to shocks, but also constrain their ability to achieve stable growth and development. Indeed, this very vulnerability of SIDS was well exposed as a result of the COVID-19 pandemic.

The COVID-19 pandemic, which started out as mainly a global health crisis, quickly evolved into an economic crisis that plunged the world into one of the deepest recessions since World War II (World Bank [WB] 2020). SIDS, especially those of the Caribbean, were some of the most vulnerable as these mainly tourism dependent economies were faced with, or implemented, border closures which led to an unprecedented decline in tourist arrivals. Declined earnings from the main export sector led to double digit declines in gross domestic product (GDP) in some cases, higher unemployment levels, and increases in poverty. Moreover, in response to the deteriorating health and economic situation, several countries undertook counter-cyclical fiscal policies to protect the most vulnerable. This response only served to increase indebtedness in countries already struggling with high debt levels, thereby further threatening growth prospects.

Recovering from this pandemic will require that countries rebuild more resilient economies that are better able to withstand external economic shocks. Indeed, it cannot be business as usual. Rebuilding with resilience requires that, among other things, countries seek to diversify their export bases through the expansion of product variety and export markets. Several empirical studies within the literature provide evidence that diversification can not only boost growth (Herzer and Nowak-Lehmann 2006) but also provide a buffer against economic shocks (Love 1986 and da Costa Neto and Romeu 2011).

It is against this background that this research paper seeks to investigate the relationship between export diversification and GDP growth in SIDS. The following section provides a brief overview of growth

¹ Under the United Nations (UN) definition of SIDS, there are 38 UN Member States and 20 Non-UN Members/Associate Members of UN regional commissions. These countries are spread across three geographical regions: the Caribbean, the Pacific and the Atlantic, Indian Ocean, Mediterranean and South China Sea (AIMS).

and export patterns in SIDS. Section 3 summarises the relevant literature regarding diversification and its impact on growth. Section 4 and 5 describe the methodology and present the findings, respectively. Finally, Section 6 proposes some policy recommendations for an export diversification strategy.

2. Macroeconomic Trends

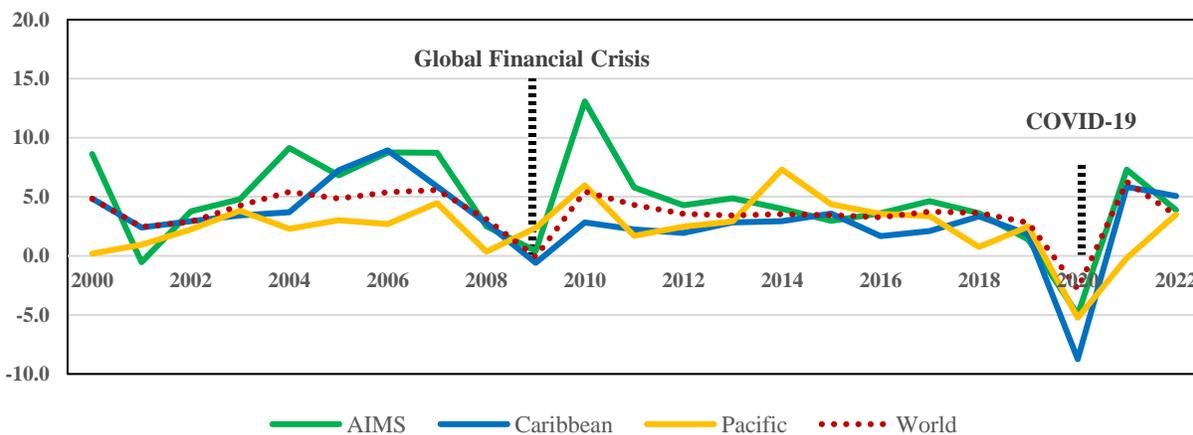
Growth and Debt

Figure 1 and **Table 1** illustrate the growth experiences of SIDS across the three geographical regions since 2000. Prior to the 2008/09 Great Recession, SIDS as a whole grew at an average rate of 5.4% per year. Within this grouping, both SIDS from the AIMS and Caribbean regions grew above the

| Group | Pre-Crisis (2000-07) | Post-Crisis (2010-19) | COVID-19 Shock (2020) |
|--------------|----------------------|-----------------------|-----------------------|
| SIDS | 5.38 | 3.79 | -6.42 |
| -AIMS | 6.25 | 4.82 | -4.97 |
| -Caribbean | 4.92 | 2.53 | -8.74 |
| -Pacific | 2.46 | 3.49 | -5.24 |
| World | 4.46 | 3.71 | -2.81 |

World Average at 6.3% and 4.9%, respectively. The onset of the global financial crisis (GFC) brought a marked reduction in economic activity in all SIDS. In 2009, the average GDP growth across all SIDS fell to 0.1% with Caribbean economies being the most impacted likely due to the strong linkages in economic activities between these economies and the United States of America (USA), especially the areas of financial services, tourism, remittances, and merchandise exports. Following this major economic shock, economic activity in most SIDS remained relatively subdued, with average growth rates in both the AIMS and Caribbean regions remaining below their pre-crisis levels. The only exception to this was the SIDS from the Pacific whose average growth rate instead increased due to the strong performance of the larger SIDS economies such as Papua New Guinea and Timor-Leste after the crisis (Organisation for Economic Co-operation and Development [OECD] 2018).

Figure 1: SIDS Growth by Region 2000-2022



While the 2008/09 crisis led to a significant decline in GDP growth, data suggests that growth has been on a downward trend even prior to this shock. **Figure 2** shows a decomposition of growth in each of the SIDS regions into their trend and cyclical components using the Horick-Prescott (HP) Filter. The decomposition shows that despite significant spells of growth, the long-term growth path has generally trended downward over the last few decades.

In 2020, much of the gains made in the recovery from the 2008/09 crisis were reversed as the COVID-19 pandemic caused an unprecedented decline in output globally. Again, Caribbean SIDS were most severely impacted as growth declined by 8.7% compared with 5% in AIMS SIDS and 5.2% in Pacific SIDS.

Several factors have contributed to the low level of growth and slow development in SIDS. One major contributing factor is the inherent nature of SIDS such as their relatively small population sizes and land masses. These attributes in many cases leave these countries with a low productive capacity and limited competitiveness. As a result, there is a high degree of specialisation in activities such as tourism, financial services, agriculture, and natural resource extraction (OECD 2018). Another stressor of economic prosperity is the high levels of public debt held by some of these economies. In 2019, SIDS in the Caribbean region held a median debt-to-GDP ratio of 58%, compared with 71% in the AIMS region and 40% in the Pacific (Figure 2). These high debt levels are often exacerbated by recovery efforts following extreme weather events which cause damage to critical economic infrastructure. As a result of high debt levels, governments are often forced to divert spending away from potential growth inducing investments toward debt servicing. In 2020 these debt levels climbed even higher for many of these countries due to the simultaneous decline in revenue and increase in expenditure induced by the pandemic.

Figure 2: Horick-Prescott Filter Decomposition of Growth in SIDS

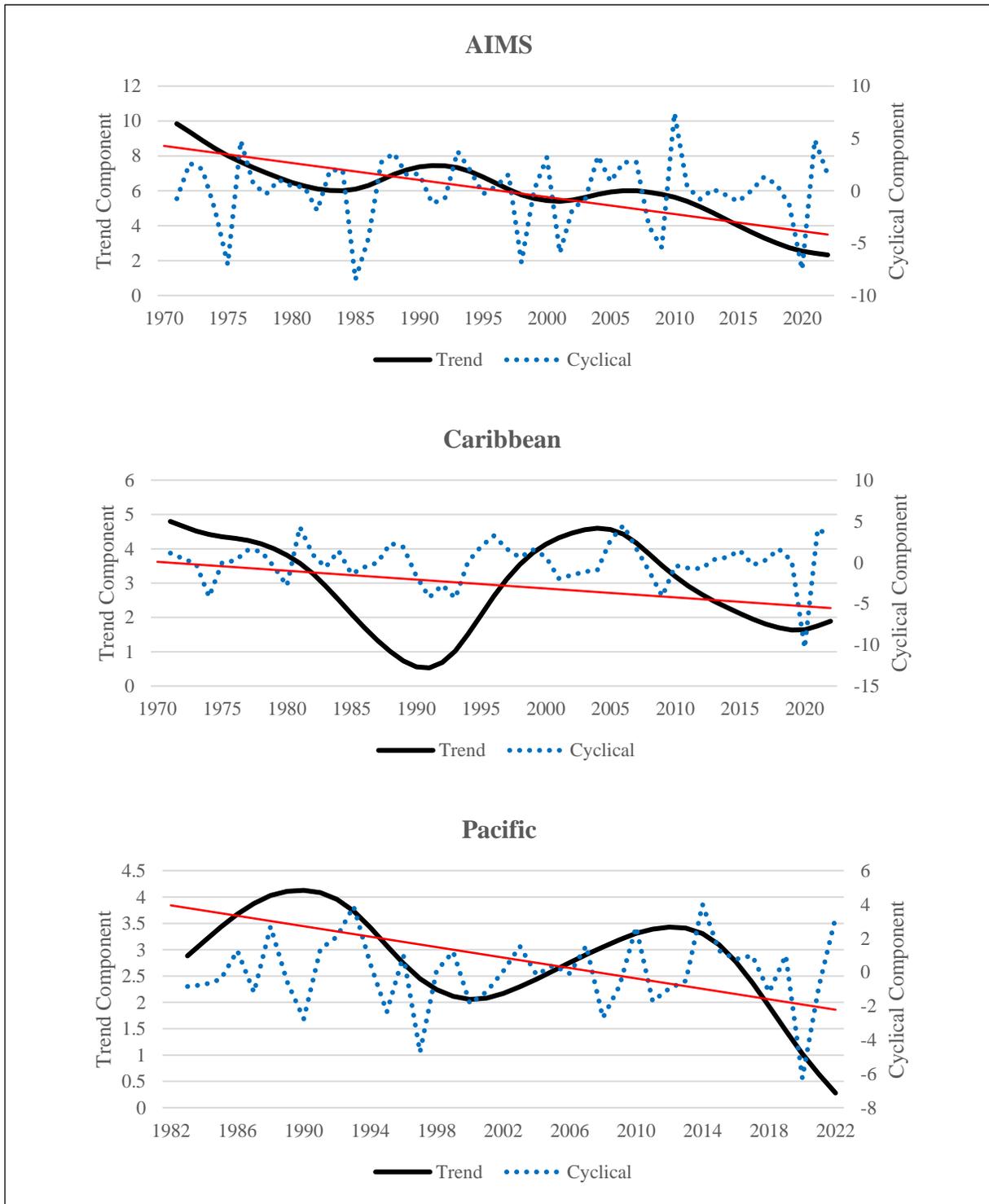
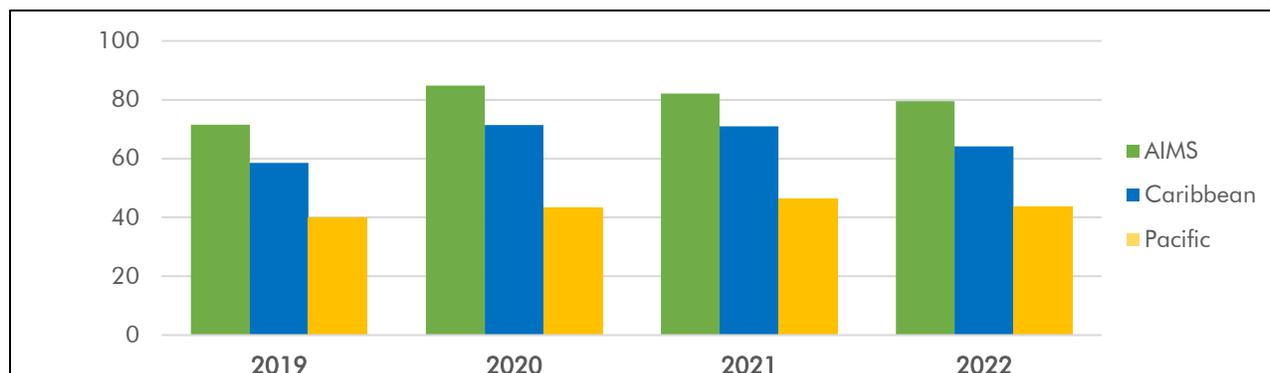
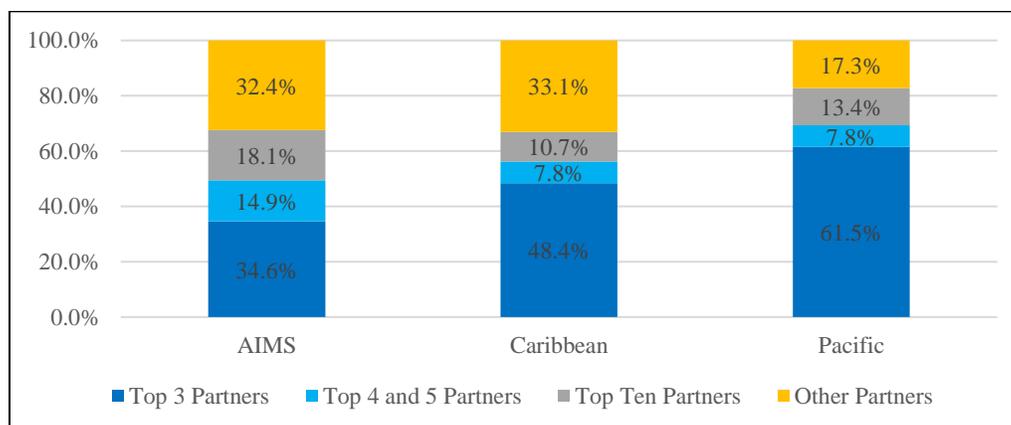


Figure 3: SIDS Median Debt-to GDP Ratios

Export Trade

Given the limited productive capacity of SIDS and their remoteness, these countries are usually highly open to international trade and largely dependent on a few, nearby trade partners. Further, as a consequence of this production constraint, these countries are unable to produce competitive export products capable of driving the economy (United Nations Conference on Trade and Development [UNCTAD] 2019) and are often concentrated in a few products. Figure 4 illustrates the percentage of SIDS' merchandise exports to their trading partners. As can be seen from the chart, there is a high level of export market concentration. For example, in the case of AIMS SIDS, their top 3 trade partners account for around 35% of exports with around 12% of this going to China. Within the Caribbean, market concentration is also high with almost 50% of exports going to the top 3 partners. The Caribbean's largest export partner is the USA, which accounts for around 37% of total exports. The highest market concentration can be seen in the Pacific Island SIDS, whose top 3 partners account for over 60% of total exports, with half of this amount going to Australia alone.

Figure 4: Export Market Concentration by SIDS Region (2014-18 average)

Similar to SIDS' export partners, exports in goods and services are also relatively concentrated in a few products. Figures 5 and 6 show the disaggregation of SIDS exports of goods and services. On average over 60% of SIDS' trade in goods is concentrated in their top 3 export products at the Standard International Trade Classification (SITC) 1 digit level. The highest level of concentration is found in AIMS SIDS, with their top 3 export goods accounting for 75% of total merchandise exports. On the other hand, while still relatively high, goods concentration in the Caribbean is the lowest out of the 3 at 53%. Regarding the exports of services. The high concentration in travel exports reflects the high dependence SIDS have on tourism. Concentration levels are highest in the Caribbean and the Pacific at 71% and 51% of total services exports, respectively, and lowest in the AIMS region at around 15%.

Figure 5: Merchandise Export Structure by SIDS Region (2014-18 average)

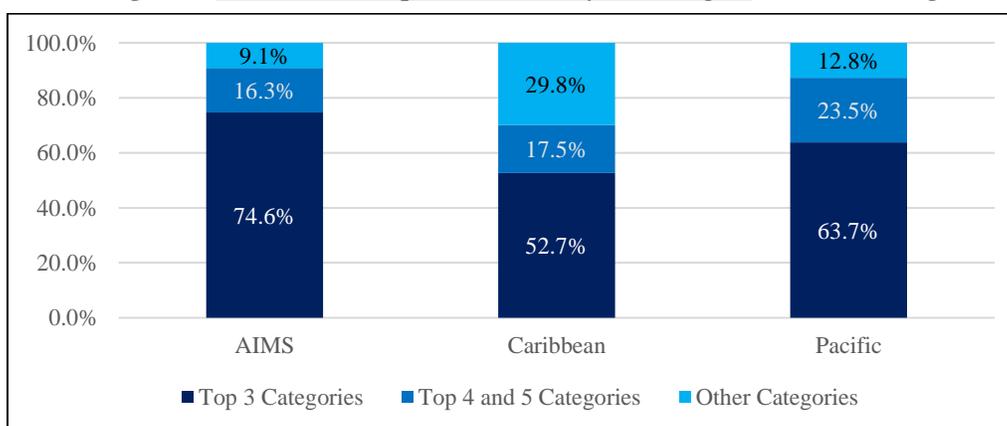
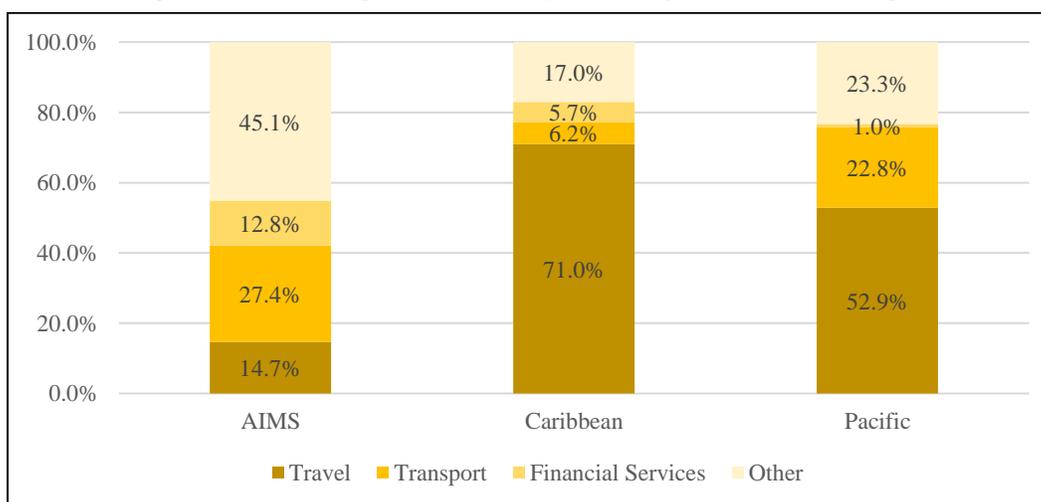


Figure 6: Service Export Structure by SIDS Region (2014-18 average)



These concentration levels are somewhat reflected when aggregated at the level of total exports. Figure 7 shows the breakdown of SIDS exports as a percentage of total exports. In all three regions, the top 3 export products make up at least 50% of total exports. Furthermore, trends in the data show that these

countries have become more concentrated over the last two decades. Figure 8 illustrates the trend of the export concentration index as measured by the Herfindahl-Hirschman Index (HHI)² since 2000.

Figure 7: Total Export Structure by SIDS Region (2014-18 average)

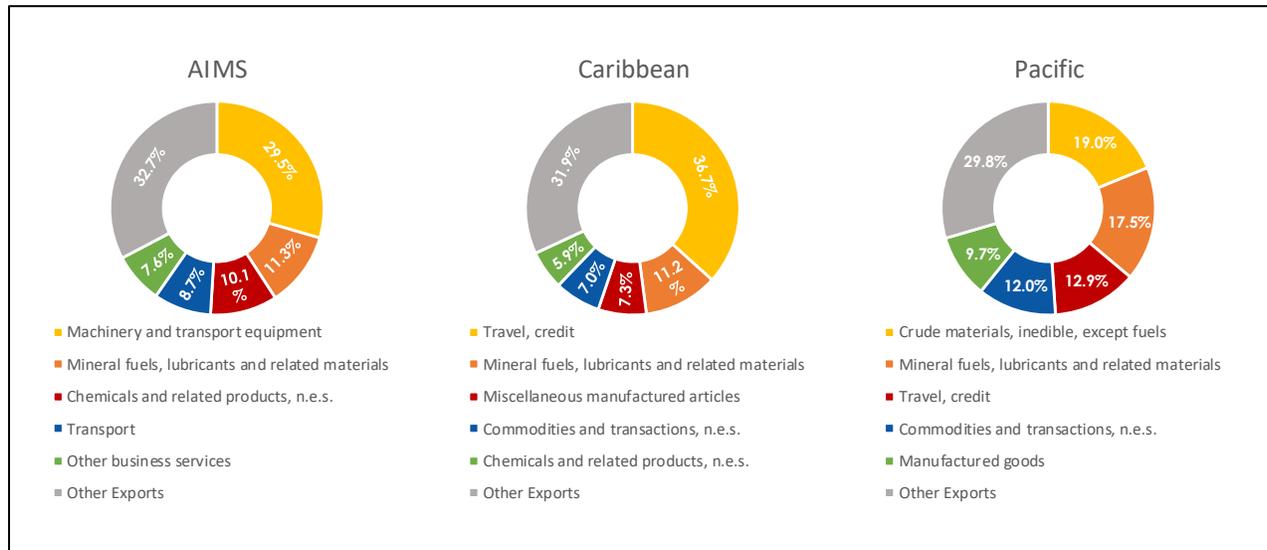
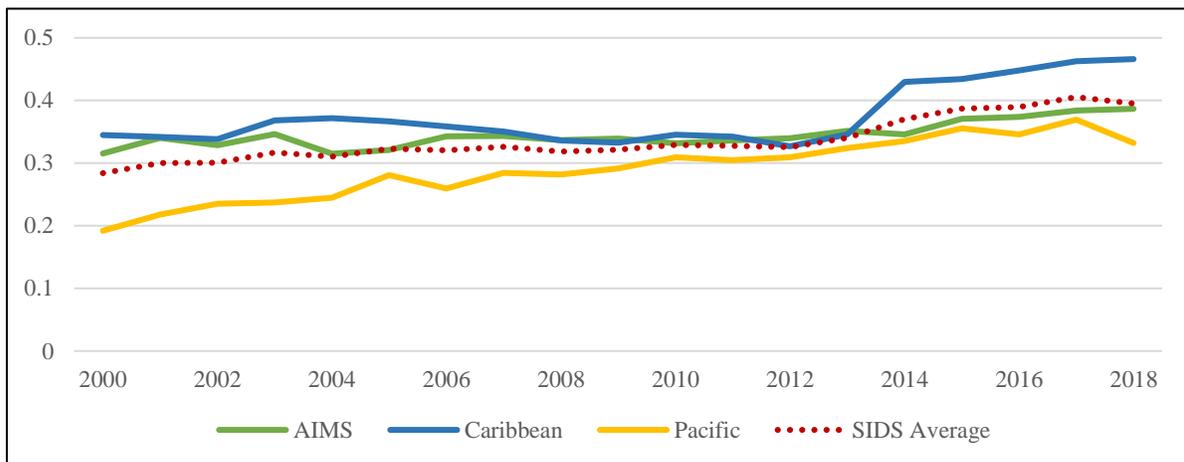


Figure 8: Total Export Concentration as Measured by the Herfindahl-Hirschman Index (2000-2018)



² See Data and Methodology section for notes on the calculation of the HHI.

3. Literature Review

The importance of a country's trade structure has often been emphasised in theories of economic growth and development (Naudé and Rossouw 2008). Throughout the literature, there are seemingly conflicting views regarding which structure is most conducive for economic growth. On the one hand, classical trade theory suggests that countries should seek to specialise production and export activities in areas where it has a comparative advantage³ (Arip et al. 2010). This strand of the literature argues that each country has different production capabilities. Therefore, when each country specialises in the production and export of goods which present to them the lowest opportunity cost, they are able to maximise use of their productive factors and, thus, maximise output (Oliveira et al. 2020). On the other hand, more recent research has suggested that export diversification may be more favourable as it may help to provide a buffer against price and earnings volatility in primary commodity exports (Hesse 2008 and Brainard and Cooper 1965), as well as provide several dynamic spill-over effects into the wider economy (Oliveira et al. 2020). While it may appear that export diversification contradicts the idea of specialisation, Alemu (2009) argues that export diversification should be seen as a dynamic process which involves the broadening of existing comparative advantages into new sectors or the acquisition of new comparative advantages. In this section of the paper, we aim to define export diversification and provide an overview of the theoretical and empirical findings regarding its relationship with economic growth.

Defining Export Diversification

At its most general level, export diversification simply refers to a change in a country's export structure and composition. Beneath this simplistic definition, however, lies the varying forms, dimensions, and levels at which export diversification can be analysed (Ali et al. 1991).

Considering a country's exports from a product perspective (whether service or merchandise), export diversification can be understood as a broadening in the export product variety (Dennis and Shepherd 2007). Even within this definition, Ali et al. (1991) notes that diversification has both horizontal and vertical dimensions. Through horizontal diversification, countries alter their export mix by either expanding the range of products within the mix or by adjusting the shares of current products in an attempt to counter international commodity price (or export quantity) instability or decline. On the other hand, diversification may also occur vertically. Here, a country changes its export structure through the creation of additional uses for its exports through value-added actions such as marketing and processing. Similar to horizontal

³ Comparative advantage refers to the ability of a country to produce a good or service at a lower opportunity cost in comparison with other countries.

diversification, diversification of this sort also has a stabilising effect on export earnings since prices for processed goods are more stable than prices for unprocessed commodities (Ali et al. 1991).

Export diversification can also be considered from the perspective of the number of geographic markets to which a country exports, otherwise known as geographical diversification. This definition suggests that countries can attain a diversified export portfolio by expanding the range of markets and geographic locations to which it exports (Arranguéz and Hinlo 2017).

All in all, a change which broadens either the number of export products or markets (or both), constitutes export diversification. Whether diversification occurs at the vertical, horizontal, or the geographical level, its benefits span beyond its implications for export earnings as it also has implications for productivity and growth in a country.

Export Diversification and Growth – Theoretical Considerations

The literature has pointed to two main ways through which export diversification can influence growth. One of the most frequently cited is what is referred to as the portfolio effect. This concept, which finds its roots in finance literature, suggests that diversification can positively affect economic growth if a country reduces its dependency on a limited number of products (Arip et al. 2010). Here, the idea is that the more concentrated a country's exports are, the less likely that negative fluctuations in the prices of some exports will be offset by positive fluctuations in the prices of others (Love 1983). Considering this from the geographic perspective, the concept is essentially the same. Indeed, demand shocks are often not perfectly correlated across countries. Therefore, countries whose exports are geographically diversified are able to counteract income losses in one region, with protentional gains or stability, in another (Shepherd 2009). In fact, the GFC of 2008/09 highlights the utility of export diversification in helping to lessen the negative impact of global downturns on exports. (da Costa Neto and Romeu 2011) notes that while several regions across the world experienced export declines of over 20% due to the crisis, export diversification in Latin America across both export sectors and products helped to dampen the decline. Similarly, Lee and Yu (2019) found that geographic export diversification across Korea's manufacturing sector weakened the negative impact of the crisis on exports. While these examples highlight the short run impact of diversification during times of crisis, the portfolio effect of diversification can also have long-run effects on growth. In the literature, higher export volatility has been found to be associated with higher GDP volatility Agosin (2007), and the latter has been found to be negatively associated with long-run growth (Fatás 2002 and Kneller and Young 2001). Moreover, Agosin (2007) also suggests that countries with highly concentrated export structures often have more volatile real exchange rates than diversified countries. This higher exchange rate volatility tends to discourage investments by risk-averse firms in tradable goods and services.

Along with the portfolio effect, research has also pointed to the dynamic effects of export diversification and its spillover effects on other industries. More specifically, (Oliveira et al. 2020) describes these as the cost discovery effect, the demand discovery effect, the intra-industry endogenous growth effect, and the inter-sectoral growth effect.

Regarding the cost discovery effect, Agosin (2007) notes the producers have incomplete knowledge of their country's comparative advantages. Therefore, during the diversification process, new comparative advantages are discovered leading to greater efficiency in the allocation of the country's productive factors (Oliveira et al. 2020). In the end these countries are able to increase output and enhance growth.

Vettas (2000) emphasises the demand discovery effect of diversification. Through the production of an additional good for export, foreign consumers are made aware of the good and its quality. At the same time, they also expand their knowledge of the quality of other goods produced in the exporting country. Thus, through this initial demand discovery, foreign consumers make several other demand discoveries (Oliveira et al. 2020).

Export diversification may also help to foster intra-industry growth. For example, diversification may produce benefits to domestic export oriented economic sectors through experience gained from exposure to international competition and other foreign firms (Herzer and Nowak-Lehmann 2006). Furthermore, entrance into new international markets requires local producers to meet the specification, quality and delivery demands of the foreign purchaser. In some cases, the foreign purchaser may help to establish mechanisms to improve the local production process and enhance management and marketing practices (Chuang 1998).

Lastly, taking into consideration export diversification at the vertical level, there is also opportunity for inter-sectoral growth. Given that export diversification of this type requires the use of more advanced technology and skill, there is greater opportunity for the introduction of new technology and knowledge into the domestic economy (Al-Marhubi 2000).

From the above discussion, we find that while export diversification has the direct impact of stabilising exports through the portfolio effect, it also has an indirect effect as it creates several other positive externalities in the domestic economy. More specifically, the resulting knowledge from new production methods, management techniques, and marketing practices has the potential to create beneficial spillovers into other industries resulting in higher productivity (Amin Gutiérrez de Piñeres and Ferrantino 1997). Such factor productivity has been emphasised in the endogenous growth models of Solow (1957) and, more recently Matsuyama (1992), who stress the importance of learning-by-doing as an engine of economic growth in the manufacturing sector (Hesse 2008).

Export Diversification and Growth – Empirical Evidence

Several articles in the empirical literature have investigated the relationship between export diversification and economic growth. Using a cross-sectional analysis of 91 countries over the period 1961-1988 and different measures of export diversification, Al-Marhubi (2000) found that export diversification promotes economic growth. Studies by (Amin Gutiérrez de Piñeres and Ferrantino 1997) and Herzer and Nowak-Lehmann (2006) on the relationship in Chile both showed that diversification played an important role in Chile's growth over the 1960s to 1990s period. Hesse (2008) also conducted analysis on a panel of developed and developing countries. The study not only revealed a positive relationship between growth and diversification, but also possible non-linearity between the two with developing countries benefitting more from diversification than developed countries. These gains in economic growth due to diversification can be possibly explained by the productivity gains mentioned previously. In fact, Feenstra and Kee (2004) found that for 34 industrial and developing countries over 1982-1997, a 10% increase in export variety of all industries translated to a 1.3% increase in country productivity.

Despite the significant number of studies on export product diversification and growth, fewer studies have ventured into the realm of diversification from a geographic perspective. Rondeau and Roudaut (2015) investigated the impact of diversification on growth in 64 developing countries for the period 1990-2009. The researchers compared the effects of product versus geographic diversification and found that while both share a positive relationship with growth, the positive effect of product diversification is twice as large. The findings further revealed that the growth enhancing effects of diversification are greater in poorer countries. Arranguéz and Hinlo (2017) conducted an exploration into the causal relationship between geographic diversification and growth in five Association of Southeast Asian Nations (ASEAN) countries between 1980 and 2014. Their findings showed that a bidirectional relationship for Malaysia and a unidirectional relationship from diversification to growth in the case of the Philippines. In the case Indonesia, Singapore, and Thailand no causality was found.

There has also been a lack of investigation in the context of SIDS. A case study by Seetanah, Sannasse and Lamport (2014) in Mauritius found that export diversification has a positive effect on growth in both the short and long run with long-run effects being larger. Additionally, studies by McIntyre (2018) and Lee and Zhang (2019) which assessed the benefits of export diversification in small states and low-income countries both found that states which were more diversified experienced lower output volatility and higher growth. Lee and Zhang (2019) further noted that the effects varied by country size and income level with larger and poorer countries standing to gain the most benefit from diversification.

In summary, the empirical literature points to the positive impact that export diversification has on economic growth. In some cases, the literature revealed that the gains from diversification are greater at lower levels of income hinting at possible non-linearity within the relationship. Additionally, much of the focus has been placed on diversification at the product level, with less attention being paid to geographic diversification. Lastly, there has been few inquiries into diversification and growth in small states.

Data and Estimation Methodology

Data Description

This study utilises data on 47 small island developing states⁴ over the period of 1996 to 2019. This data was collected from the statistical databases of the United Nations Conference on Trade and Development (UNCTADSTAT), the IMF BOP/IIP and the World Bank (World Development Indicators).

Dependent Variable

The dependent variable, economic growth, is measured by real gross domestic product per capita growth.

Independent Variable

The explanatory variable of interest is export diversification. As stated previously, we explore export diversification using the dimensions of goods, services and geography.

Export flows at the product level are measured using the SITC 1- and 3-digit levels of goods, services are measured using the main product categories, while exports at a geographic level are calculated using SIDS exports to individual countries⁵.

To do this, we construct our measure of diversification using the Herfindahl-Hirschman Index (HHI). The HHI is calculated using the sum of squared export shares for each industry/service/region for each country and year.

$$HHI_{it} = \sum_{j=1}^n S_{ijt}^2$$

Where HHI_{it} is the level of export diversification in country i in period t ; and S_{ijt}^2 is the squared share of a product (region or service) j in country i 's total exports in period t . The index ranges from 0 to 1 with values closer to 1 denoting a higher level of export concentration.

⁴ See appendix X for the list of countries included in the study.

⁵ See appendix Y for a detailed breakdown of the categories used.

Other Control Variables

We also account for several other factors which are important in determining economic growth. To this end, we include the log of initial real GDP per capita ($L_{initial}$) which represents the GDP per Capita in the previous year, the population growth rate (pop), the investment to GDP ratio ($IRatio$), trade openness ($TrdeOpn$), and government consumption to GDP ratio (Gov).

Graphical Analysis

Figure 9 presents two scatter plots. Panel A represents the mean export concentration (Herfindahl Index) for goods and services and average GDP per capita growth over the period 1996 to 2021. Likewise, Panel B, presents the mean service export concentration and average GDP per capita growth for the same period. In both panels, there is evidence of a negative correlation between real GDP per capita growth and the concentration variables, with a correlation coefficient of -0.31 and -0.25 for goods and services and services respectively. In Panel A, we observe countries like Mauritius, the Dominican Republic, Trinidad and Tobago and Seychelles are located in the lower right-hand corner, which indicates that they among the least export concentrated in the sample of 47 Small Island Developing States. On the contrary, countries like Bahamas, Saint Lucia and Anguilla are situated at the top left-hand side of the graph. Investigating Panel B, which looks at service exports, countries like Turks and Caicos Islands, Saint Lucia, Anguilla, the Bahamas and Barbados that a known to be among the most tourist dependent in the world are located in the top left-hand side. It is also noticed that Trinidad and Tobago, Mauritius and Seychelles are still located in the lower right-hand side of the graph.

Empirical Estimation Methodology

Linear Static Panel Data Model

To empirically investigate the impact of export concentration, defined in this study by the Herfindahl Index, panel data estimation techniques, i.e., Pool Ordinary Least Squares, Random Effects and Fixed Effects econometric models are utilised. Panel data techniques is used widely to applied development work primarily for its ability to deal with the issue of endogeneity, which is largely due to either, the presence of biases emanating from simultaneity, omitted variable or measurement errors. Whenever a model exhibits endogeneity, where the classical linear regression model orthogonality assumption of zero conditional mean or exogeneity is violated, i.e. $E(\mu|x_1) = 0$, this results in inconsistent asymptotic estimates.

As a starting point, the below baseline export concentration growth augmented estimation equation is estimated for all three estimation methodologies:

$$y_{it} = \beta_0 + \beta_1 HHI_{it} + \beta_2 X_{it} + \mu_i + \varepsilon_{it} \quad \text{Equation 1}$$

In the above equation, y_{it} represents national income (GDP per capita in constant terms) for the i_{th} observation country unit, HHI_{it} is the export concentration of variable of interest, X_{it} is a vector of control covariates that usually feature in growth equations, β are the coefficients associated with each variable, μ_i is the time-invariant country specific effects and ε_{it} is the independent and identically distributed idiosyncratic stochastic error term. In each specification, clustered robust standard errors are employed to mitigate the potential of presence of heteroscedasticity, while clustering is done at the country level to allow for serial correlation of the error term over time, which assumes that the individual specific unobserved heterogeneity carries over from one period to the next. Importantly, although the initial set data spans 27 years ranging from 1995 to 2021, the study collapses the time-series dimension for both the dependent and independent variables in into 9 non-overlapping three-year averages.

Following the estimating of the Pooled and Random effects models for the baseline equation, the Breusch and Pagan (1980) Lagrangian Multiplier (LM)⁶ test for the random unobserved individual effects is used to select between these two initial models. The LM test assess the null hypothesis of homoscedastic errors, i.e., $\sigma^2 = 0$. The null hypothesis of $\sigma^2 = 0$ would mean that there are no significant differences across country units, hence there is no panel effects and therefore, the Pooled Ordinary Least Squares Estimator would be appropriate. On the contrary, if the null hypothesis cannot be accepted, i.e., $\sigma^2 \neq 0$ then the random effect model is preferred to the pooled model, which was the case for this study. However, by convention, before proceeding to use the random effect model for empirical inference, it must be evaluated

against the fixed effects model using the Hausman Test. After doing so, the fixed effect model was used to estimate the baseline model and the various iterations of the model specifications.

Results

Merchandise Good Concentration

Table 2 below presents the results of the six-export concentration growth augmented models estimated using the fixed effect model. Column produces the results for the full sample of 47 Small Island Developing States using the 1-digit goods HHI as the variable of interest. The coefficient on the concentration index is negative, which is inline with the apriori expectation, but not significant. The estimation also found that gross fixed capital formation and trade openness were significant and positive, as is expected. The paper does however find initial GDP per capita, which is the one period lag of the 3-year average of GDP to be positive and significant, which contradicts the findings of several other empirical papers XXX. A specification which excluded initial GDP was estimated and found no difference in outcome, as a result the other specifications were estimated including initial GDP per capita. The second estimation shown in column 2 is the results for the Caribbean only. The results show that export concentration is negative and statistically significant for the Caribbean. Columns 3 and 4 estimated similar fixed effects specification but for AIMS and Pacific. In these sub country groups export concentration was not found to be significant. To account for the possibility of nonlinearity in the relationship between export concentration and GDP per capita, the square of the HHI was introduced into the specification. For SIDS as a grouping using the squared export concentration did not yield significant results, however, for the Caribbean the results were negative and significant, reemphasizing the point the export concentration is negatively correlated with GDP per capita.

**Table 2: Growth Regressions Results
Fixed Effects, 3-Year Average (1995-2021)**

| VARIABLES | (1) SIDS | (2) Caribbean | (3) AIMs | (4) Pacific | (5) SIDS- HHI ² | (6) Caribbean- HHI ² |
|-------------------------------|---------------------|---------------------|--------------------|--------------------|----------------------------------|---------------------------------------|
| Government Expenditure | 0.187 (0.189) | -0.293 (0.471) | 0.0515 (0.489) | 0.273 (0.216) | 0.188 (0.188) | -0.294 (0.463) |
| Gross Fixed Capital Formation | 0.298* (0.164) | 0.357 (0.233) | -0.174 (0.0984) | 0.528* (0.263) | 0.296* (0.164) | 0.355 (0.230) |
| Trade Openness | 0.0816* (0.0440) | 0.0828 (0.110) | 0.0445 (0.0481) | 0.106* (0.0576) | 0.0806* (0.0444) | 0.0810 (0.110) |
| Population Growth Rate | 1.140 (1.132) | 2.855*** (0.574) | 0.197 (0.430) | -0.821 (2.707) | 1.150 (1.126) | 2.881*** (0.574) |

| | | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|
| Initial GDP Per Capita | 0.799*** (0.0394) | 0.798*** (0.0647) | 0.829*** (0.0431) | 0.817*** (0.0411) | 0.800*** (0.0395) | 0.802*** (0.0654) |
| HHI 1 Digit Export Goods | -0.0216 (0.0459) | -0.104* (0.0516) | -0.00817 (0.105) | 0.110 (0.135) | | |
| Export Concentration_Goods1^2 | | | | | -0.0104 (0.0395) | -0.0962** (0.0441) |
| Constant | 1.629*** (0.395) | 1.840** (0.689) | 1.481*** (0.358) | 1.212** (0.444) | 1.614*** (0.392) | 1.784** (0.695) |
| Observations | 376 | 184 | 72 | 120 | 376 | 184 |
| R-squared | 0.739 | 0.765 | 0.890 | 0.692 | 0.739 | 0.764 |
| Number of Countries | 47 | 23 | 9 | 15 | 47 | 23 |
| Robust standard errors in parentheses | | | | | | |
| *** p<0.01, ** p<0.05, * p<0.1 | | | | | | |

Services Concentration

Similarly, the model was estimated using an HHI measure for services. However, the results indicate a positive correlation between services concentration and growth with the result being significant in the full sample and the Caribbean SIDS grouping. While this result appears contrary to the literature on diversification, concentration in services, and in particular tourism has contributed significantly to growth in the Caribbean over recent decades. Recent research by Cannonier and Burke (2018) found that a 10% increase in tourism spending increased economic growth from 0.3% to 1% in the Caribbean over the last three decades. Thus, these results largely align with the growth experience of Caribbean states.

| VARIABLES | (1) SIDS | (2) Caribbean | (3) AIMs | (4) Pacific |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|
| Government Expenditure | 0.0878 (0.197) | -0.254 (0.522) | 0.0318 (0.461) | 0.282* (0.148) |
| Gross Fixed Capital Formation | 0.163 (0.139) | 0.273 (0.293) | -0.191* (0.0838) | 0.319* (0.147) |
| Trade Openness | 0.0815* (0.0463) | 0.113 (0.119) | 0.0313 (0.0487) | 0.162* (0.0836) |
| Population Growth Rate | 1.427* (0.800) | 2.973*** (0.727) | 0.301 (0.551) | -2.941 (1.892) |
| Initial GDP Per Capita | 0.808*** (0.0488) | 0.789*** (0.0915) | 0.839*** (0.0443) | 0.886*** (0.0552) |
| Export_Concentration_Services | 0.157** (0.0725) | 0.243*** (0.0830) | 0.0677 (0.0962) | 0.0445 (0.107) |
| Constant | 1.501*** (0.442) | 1.711* (0.911) | 1.390*** (0.385) | 0.652 (0.450) |
| Observations | 304 | 151 | 69 | 84 |

| | | | | |
|---------------------|-------|-------|-------|-------|
| R-squared | 0.797 | 0.776 | 0.897 | 0.840 |
| Number of Countries | 43 | 21 | 9 | 13 |

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Conclusion and Policy Recommendations

The results of this study provide evidence of a relationship between export concentration and growth in Small Island Developing States, particularly Caribbean SIDS. In the case of goods exports, the results show that a negative relationship exists; therefore countries with highly concentrated goods exports experienced slower growth. With respect to services, however, countries that were more concentrated in a particular service export experienced faster growth. Indeed, export diversification not only provides an opportunity for growth, but can also lead to a reduction in unemployment and poverty in the exporting country. Achieving export diversification requires that policy makers create an environment that promotes diversification. An environment that promotes diversification is one that allows local businesses to compete internationally. Businesses can only compete internationally if they can produce goods and services at a price and with a reliability of supply that compares with other producers. The factors that determine this ability are those that affect businesses throughout the entire life cycle. Specifically, those factors that affect start-up, operation, growth and even closure.. This section explores some of the policies that would improve the environment within which businesses operate and facilitate diversification.

Considerations for Policy Makers as it Relates to Barriers in the Local Economy

Creating an Enabling Environment for Business and Entrepreneurship

Export diversification is synonymous to economic diversification. Indeed, a country can only seek to export what it produces domestically. Therefore, in seeking to diversify exports, there is a need for the creation of an enabling environment for diversifying domestic production. One of the ways in which this can occur is through investment and entrepreneurship. However, for any new firms to be competitive it is not only important that they produce products with high efficiency, but also, the services they receive that play a critical role in their production processes are also efficient as well. Firms that are subject to excessive regulatory procedures and higher costs for critical services will likely find it more difficult to compete domestically and even more so, internationally. Therefore, in order to encourage diversification, countries within the region must create a more favourable environment in which investors and entrepreneurs find it easy and safe to do business.

While no longer active, the World Bank's Doing Business Report showed that many of the region's economies rank fairly. In the 2019 report, out of 190 countries assessed by the World Bank, countries within the region have an average ranking of 126. Jamaica has the highest ranking at 75 and Haiti the lowest at 182. These rankings suggest that it is fairly difficult to do business within the region. The report reveals that in many cases, the number of procedures and the time taken to perform several activities critical to the establishment of a business are the major constraining factors in the region's business environment. One of the ways in which these challenges can be remedied is through the digitalisation and automation of these processes. For example, through digitalisation, processes which may be duplicated across different government agencies can be reduced to one process since information can be more easily shared across agencies. Moreover, digitalisation can lend to the automaton of information processing as digitalisation can remove or reduce the need for human interaction in simple procedures.

In addition to improving business regulation, there is also the need to encourage entrepreneurship within the region through policies and programs aimed at building the capacity for entrepreneurs to export. Indeed, entrepreneurship can help to drive diversification through the introduction of new productive sectors. Regional government can support entrepreneurship through the creation of incubator programs which provide access to mentoring and other technical assistance, financing and networking opportunities.

Enhancing Trade Facilitation

Nassif (2009) notes that export diversification is a function of export growth, with research showing that countries with the most conducive environment for trade are those which are more likely to achieve a diversified export portfolio. Therefore, the pursuit of a well-diversified export portfolio within the Caribbean also requires that the trade environment at large is improved. The pursuit of a well-diversified export portfolio within the Caribbean also requires an improvement in their trade environment at large. In 2019, regional economies had an average ranking of 111 in the Trading Across Borders sub-indicator of the Doing Business Index. The factors which contribute to this low ranking are the high import and export costs and excessive documentary procedures within these countries. With respect to the Export Time, data suggests shows that the time it takes to export with respect to Border and Documentary compliance, in some cases, is well over two days and the associated costs on average exceeds 500 USD. These factors point to the need for regional economies to implement improvements which would enhance trade facilitation.

According to the WTO trade facilitation can be defined as “the simplification, modernization and harmonization of export and import processes” (WTO). Trade facilitation extends beyond customs and border procedures and also includes other processes such as payments and logistics which affect the

efficiency of a trade transaction (Duval 2007). The WTO's Trade Facilitation Agreement (TFA) entered into force in 2017. The agreement makes provisions for several reforms which are aimed at streamlining customs and border procedures in an effort to maximise efficiency in international trade. For example, reforms in Article One call for the publication of information regarding import and export procedures, fees and charges and procedures for appeal, among others. Furthermore, where possible, the agreement also suggests that this information be published online, with contact points where persons can make and receive responses for any queries. Article seven of the TFA which relates to the Release and Clearance of Goods calls for the adoption of an electronic payment means for taxes and other fees as well as provisions for the expedited release of goods. Another notable reform within the TFA is the establishment of an Electronic Single Window. This would allow traders to submit any trade related documentation to multiple government agencies through a single online system. This system could be beneficial for traders as it can lead to a more transparent regulatory process. In addition, government agencies can also benefit through greater efficiency and productivity. Singapore, which implemented the world's first national Single Window – TradeNet – in 1989, noted that its implementation greatly enhanced government productivity and found that for each one USD earned in customs revenue, only one cent is spent.

While the WTO boasts that implementation of the TFA can reduce trade costs by an average of 14.3%, its uptake with-in the region's economies has been largely slow. So far, implementation of the TFA commitments stands around 50% on average across the region. Through full implementation of the TFA, however, inefficiencies in trade can be eliminated. For example, it is expected that export times can be reduced by almost two days through full implementation of the TFA. Such an improvement can be beneficial for exporters of time sensitive goods like agricultural products. Additionally, through the reduction in trade costs, trade facilitation can lend to the goal of export diversification as lower cost can encourage firms who are currently exporting to increase exports and at the same time, push new firms to begin export. Research by (Beverelli, Neumueller and Teh 2015) found that the WTO TFA can positively affect export diversification at the extensive margin. In fact, simulations suggest that countries within Latin America and the Caribbean could see an increase of up to 12.2% and 21.7% in the number of products and export destinations. Outside of its impacts on trade and export diversification, the WTO also notes that the TFA can also have broader spillover effects such as a greater inflow of foreign direct investment.

Advancing Digital Trade

Through the use of e-commerce technologies, the region has the potential to expand the international reach of its goods and service exports. E-commerce is generally defined as the use of internet communications technology to perform business transactions whether national or international. Through the development of such platforms, traditional trade barriers such as geographical proximity and historical ties can be easily

broken down as local sellers can be more easily matched with international buyers. Moreover, service activities which were previously non-tradable such as marketing, research and development even medical services etc. now become more easily traded through the use of e-commerce (Terzi 2011). Indeed, the internet has effectively opened markets that were previously closed (Terzi 2011). In 2019, global retail e-commerce sales were estimated at \$3.4 trillion (eMarketer 2021). In 2020, the value of e-commerce was even further highlighted as COVID-19 caused closures of typical 'brick & mortar' businesses. This led to the share of ecommerce sales in global retail moving from 14% in 2019 to 17% in 2020 (UNCTAD 2021) and global retail sales being estimated at \$4.2 trillion, a 25% growth (eMarketer 2021). Current expectations suggest that over 50% of consumers will continue to shop online more often than they did prior to the pandemic (UNCTAD 2021). Therefore, policy makers in the region should seek to establish and develop ecommerce strategies and integrate them into wider national development policies and seek build awareness and trust in ecommerce, especially in exporting firms. Overall, with the right supporting frameworks (logistics, payment gateways, effective customs etc.) e-commerce has the potential to enhance the region's trade environment and ultimately its level of export diversification.

Considerations for Policy Makers as it relates to Barriers in the Export Market

Information on Export Related Costs

One of the critical issues surrounding exporting lies in the uncertainty that it brings with it for potential exporters. This problem arises due to the difficulty in acquiring information across different stages within the export process. Brenton et al. (2009) notes that the exporting firms' lack of information on the costs of exporting may cause firms not to export at all or cause firms to export only for a short time due to higher-than-expected costs. Therefore, export agencies within the local economy should support newly exporting firms through technical assistance, establishing partnerships with overseas firms who may have better knowledge of the process, as well as through financial assistance where feasible. Such support can aid in reducing the uncertainty surrounding exporting in the initial stages for the firm. Furthermore, though the creation of a success story by one firm, it may encourage other firm to consider exporting even without the need for additional support.

Information on Demand in the Export Market

Nassif (2009) also notes that uncertainty can come about due to a lack of knowledge as it relates to demand in new markets and the price that new products and services can command. Such uncertainties can indeed be remedied through assistance by export promotion agencies in conducting market research, as well as through forming partnerships with distributors within the local economy. However, Lejarraga and Walkenhorst (2009) also highlights the potential for countries to use the tourism sector to acquire

information about foreign demand. They note that tourism provides a cost-free information channel through which local producers can learn about foreign demand. By observing the preferences of tourists through purchasing choices, local firms can gain some insight into foreign demand and the willingness of consumers to pay for a particular good or service. Therefore, policy makers should aim to establish greater linkages between the tourism sector and other sectors of the economy. This can include actions such as enhancing agribusiness, manufacturing and technology to ensure that products remain price competitive both within local economy and for exports.

Buyer's Lack of Information on Sellers and Product Quality

Another uncertainty lies on the side of the buyer. Generally, exporters can more easily match standard and homogenous products to buyers in the importing market. However, in the case of new or differentiated products, matching becomes more difficult as buyers may not have adequate information regarding the seller or the quality of their product (Brenton et. al 2009). While some of the previously mentioned recommendation such as tourism linkages, export promotion and partnerships can remedy this, it also highlights the importance of standards in communicating product quality. Despite the fact that standards exist for the main purpose of ensuring safe and quality products for consumers, they remain a significant barrier to trade. This is especially so for developing countries, where research by the ITC has shown that between 50 and 70% of the challenges faced by exporters in these countries are due to the technical requirements of the destination market (ISO 2019). Even within the Caribbean region, differing sanitary and phytosanitary requirements are the most prevalent Non-Tariff Barriers restricting market access in regional agricultural trade (CARICOM 2018). Compliance with many different standards consequently increases costs for the exporting countries and if projects are not scalable, as is the case with many small states, this can lead to significant losses. In remedying this problem, policy makers should ensure that standards are harmonised, wherever possible, to international standards. Moreover, capacity building exercises should be carried out to ensure compliance among local exporters. Through compliance, local exporters would signal to importing countries the quality of regional goods, thereby helping to drive exports.

Considerations for Policy Makers as it relates to Service Concentration

The results also provided evidence suggesting that higher concentration in services contributes to higher growth. Indeed, this has been the experience of many Caribbean SIDS over the last few decades as tourism and financial services have become the dominant sectors and significant contributors to many local economies. At the same time, however, COVID-19 demonstrated the potential downside to concentrated service exports – especially in tourism. In remedying this situation, we suggest that policy makers establish

policies aimed at pursuing diversification within service export categories. For example, policies can be aimed at moving the tourism sector beyond simply leisure tourism and toward other forms of tourism such as medical, sports, cultural and ecotourism. Additionally, policy makers in countries concentrated in tourism can also pursue the development of other service sectors as means of diversification.

Overall, this study finds that there are economic benefits to export diversification in the case of SIDS, particularly those in the Caribbean. In addition to enhancing growth, diversification provides a buffer to shocks through its portfolio effect. Moreover, it can promote higher efficiency in the local economy through the spillover effects provided by new industries. However, before countries can reap the benefits of diversification, policies must be created to address several considerations in the local economy as well as those that arise in the export market.

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