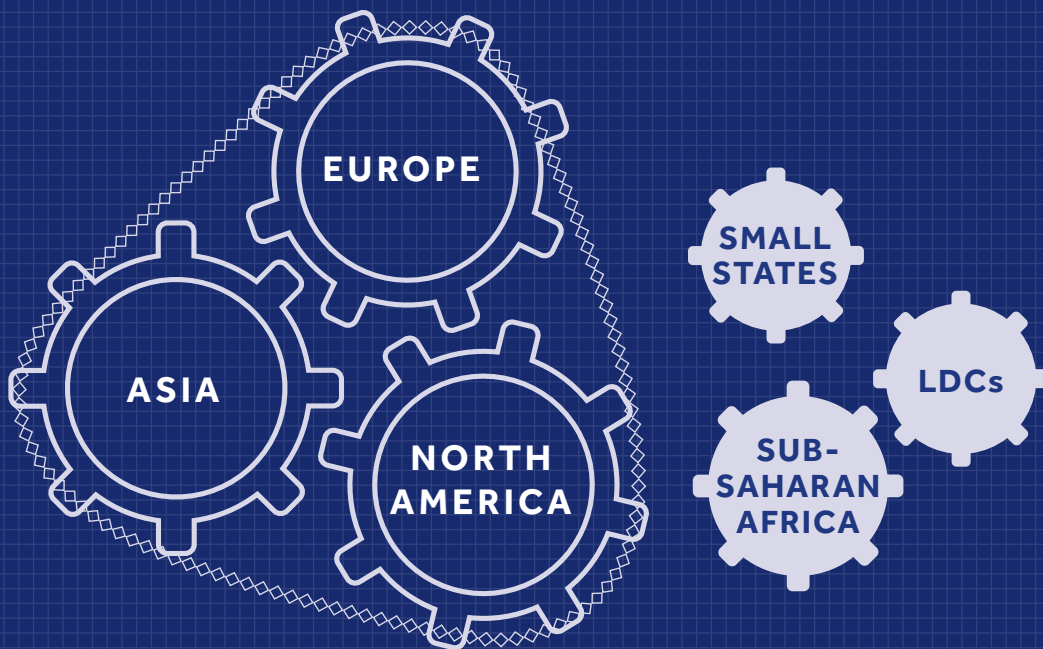
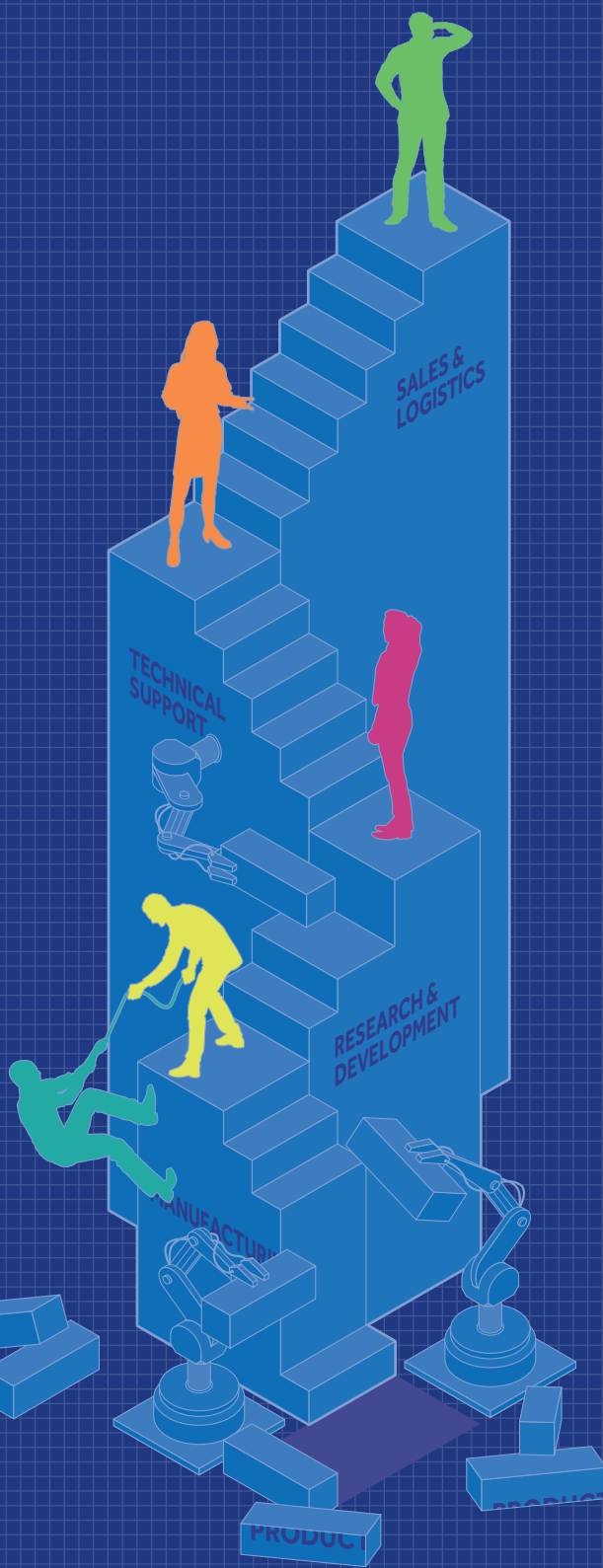


Section 4: Policy Perspectives





THEN



NOW

Chapter 15

Understanding Shifts in Trade in Value Added: The Relative Position of the Commonwealth Caribbean and Pacific

Jodie Keane and Roland Baimbill-Johnson

Abstract¹

This chapter presents data on global and regional value chain participation in the Caribbean and the Pacific by analysing trade in value added at the regional, country and sectoral level. It presents contrasting experiences regarding participation in global value chains as proxied by shifts over time in domestic and foreign value added. It also presents new data on intra-regional participation as indicated by foreign value added sourced on an intra-regional basis. Although increasing intra-regional value development is apparent across both regions, it is strongest in the Pacific. Although not conclusive, this snapshot provides us with evidence regarding current participation and, most importantly, changes over time at both the aggregate and the sectoral level.

15.1 Understanding shifts in value added trade

The Eora Multi-Regional Input–Output database (Eora-MRIO) represents a good effort to compile and harmonise input–output tables from several countries using different sectoral classifications. It is one of the major data sources used to calculate trade in value added. Although, in the process of preparing this dataset, some assumptions and adjustments to the data have been made (Kowalski et al.,

2015), it has the best country coverage in terms of availability across Commonwealth members.

However, in using this database, it is important to understand some of the caveats involved. These include the fact that, although in aggregate terms the Eora-MRIO can help in calculating the value added content of exports and other production variables, when the analysis is performed at disaggregated levels some inconsistencies may appear. Despite these challenges, this database is one of the best available data sources at the current time and is therefore taken at face-value.

The distinction between intermediates and final products blurs in the summation of overall trade in value added, but it is logical to assume that an increase in foreign value added equates to a greater use of imported intermediates (Cheng et al., 2015). The key terms referred to in this analysis are:

1. **Foreign value added** that a country further exports as a proportion of its total exports, called ‘backward’ integration;
2. **Domestic value added** that the country in question exports, which is then further exported by the partner country, known as ‘forward integration’.

To these two types, we add ‘**regional value added**’. This relates to the foreign value added that is sourced from regional rather than global trade partners.

Invariably, the data are extremely sensitive to the size of economies. Larger economies will present smaller participation indexes, as indicated by proportions of foreign value added. This is simply because of their more diversified productive structure, which permits the domestic sourcing of a greater range of products. In addition, the greater availability of workers, land and resources necessarily implies a higher proportion of domestic value added in production.

The reported figures for trade in value added may differ substantially from those associated with gross merchandise trade. This is because not only is the value of imported intermediate goods used in production omitted but also, as trade in value added is decomposed, the services sector gains in weight once its overall contribution is acknowledged. Overall, 26 ‘sectors’ are included in the database, but for the purposes of our analysis we exclude some of these, such as ‘re-export and re-import’ as well as ‘others’. The inclusion of ‘private households’ features gives the important role of remittances for many Commonwealth members.

The calculation of trade in value added supposes the unbundling of production and trade into its basic constituent parts. This implies identification of the origin of the value added embedded in the production or trade. The distinction between intermediates and final products blurs in the trade in value added. Instead, it is more appropriate to talk about products being made by value added from multiple origins.

Given this, it is important to understand that trade in value added figures may differ substantially from those associated with gross trade. One particular and important source of differences between the structures of gross and

value added trade is the presence of the services sector. As trade in value added decomposes production to its basic components, the service sector gains weight once its contribution is acknowledged. The use of input–output tables is to distinguish between trade in value added between domestic and foreign sources. Value added generated in local or foreign transport or financial services, for example, is embedded in both exported services and goods. Consequently, the structure of trade in value added tends to be more similar to the structure of domestic production than it is to typical trade. This is precisely one of the main objectives of the exercise undertaken to calculate trade in value added—that is, to address the imbalance between the measurement of gross trade compared with the value added data used to measure gross domestic product.

As we have mentioned, there are not many reliable sources on trade in value added. Very often, it is necessary to calculate this using multiregional input-output tables. That which we are using in this report, the Eora-MRIO, contains data for Commonwealth Pacific and Caribbean members. It is the changes over time in these indicators that are most revealing. The following sections thus present disaggregated and country-specific data for the Caribbean and Pacific regions, and countries within these. The following sub-sections briefly summarise the main findings for each region and countries within these.

15.2 Caribbean: key findings

- There was a consistent increase in the proportion of foreign value added embedded within the exports of Barbados, Belize, Guyana and Jamaica between 1995 and 2000.
- The main sectors that experienced an increase in foreign value added in exports (2000–12) were transport, food and beverages, post and

telecommunications, private households and maintenance and repair.

- The main sectors that experienced a decrease in foreign value added (2000–12) were mining and quarrying, electrical and machinery, textiles and apparel, fishing and public administration.
- This suggests declining participation in archetypal global value chain (GVC) sectors, including light manufacturing and processed fisheries.
- A consistent increase in domestic value added in exports occurred in Antigua and Barbuda, The Bahamas and Trinidad and Tobago between 1995 and 2012.
- However, domestic value added by Caribbean countries as a proportion of global trade in value added (2000–12) decreased, except in the case of Trinidad and Tobago (driven by the dominance of petrochemical exports).
- Global value added to exports (through imports) increased between 2000 and 2012 by almost 10 percentage points, with a slight decrease in regional sourcing of value added from other Caribbean partners (0.02 per cent).

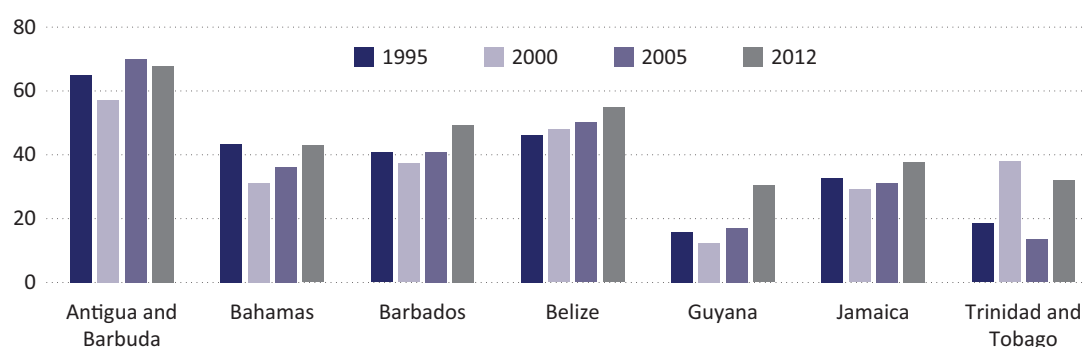
- However, individual countries in the region (Guyana, Barbados and Jamaica) increased sourcing of regional value added, from Trinidad and Tobago.

15.2.1 Shifts in value added: aggregate level

Figure 15.1 presents the results of an analysis of changes in the proportion of foreign value added over time between 1995 and 2012 in Caribbean countries. There has been a consistent increase in the proportion of foreign value added embedded within the exports of Barbados, Belize, Guyana and Jamaica. In the case of Antigua and Barbuda, The Bahamas and Trinidad and Tobago, there was an increase in the proportion of domestic value added embedded in exports between 1995 and 2012.

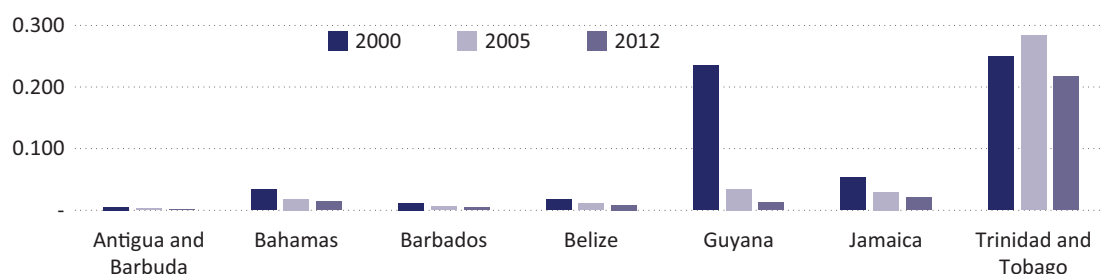
In terms of the contribution of domestic value added by the Caribbean to global trade in value added (Figure 15.2), the proportion Trinidad and Tobago contributed to other countries' exports is extremely high (driven by the dominance of petrochemical exports). There have clearly been decreases in the cases of the other countries, including The Bahamas, Barbados, Belize and Jamaica, as well as, more recently, Guyana.

Figure 15.1 Proportion of foreign value added (%) embedded in exports (backwards participation index)



Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

Figure 15.2 Caribbean countries' contribution of value added to world exports (%)



Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

15.2.2 Shifts in value added: regional picture

Table 1 presents the regional contribution of value added to exports in 2000 and 2012. The main findings can be summarised as follows:

- Between 2000 and 2012, the sourcing of global value added to exports (through imports) increased on average for the region by almost 10 percentage points; there was a slight reduction in the regional

Table 15.1 Origin of value added in exports in 2000 and 2012 (%)

	Antigua and Barbuda	The Bahamas	Barbados	Belize	Guyana	Jamaica	Trinidad and Tobago	Average
2000								
Antigua and Barbuda	42.9	0.0	0.0	0.0	0.0	0.0	0.0	6.13
The Bahamas	0.1	68.9	0.0	0.0	0.0	0.1	0.0	9.87
Barbados	0.2	0.0	62.8	0.1	0.1	0.0	0.0	9.03
Belize	0.0	0.0	0.0	52.0	0.0	0.0	0.0	7.43
Guyana	0.2	0.0	0.2	0.1	87.8	0.2	0.3	12.69
Jamaica	0.1	0.0	0.2	0.1	0.1	70.9	0.1	10.21
Trinidad and Tobago	0.3	0.0	0.5	0.1	0.8	0.4	62.1	9.17
Rest of the world	56.2	31.0	36.3	47.5	11.3	28.3	37.4	35.43
Total Caribbean	<i>0.9</i>	<i>0.11</i>	<i>0.89</i>	<i>0.45</i>	<i>0.92</i>	<i>0.79</i>	<i>0.5</i>	0.65
2012								
Antigua and Barbuda	32.3	0.0	0.0	0.0	0.0	0.0	0.0	4.61
The Bahamas	0.0	57.1	0.0	0.0	0.0	0.1	0.0	8.17
Barbados	0.2	0.0	50.6	0.0	0.1	0.0	0.0	7.27
Belize	0.0	0.0	0.0	45.2	0.0	0.1	0.0	6.47
Guyana	0.1	0.0	0.1	0.0	69.6	0.1	0.0	9.99
Jamaica	0.1	0.0	0.2	0.1	0.0	62.3	0.1	8.97
Trinidad and Tobago	0.2	0.1	0.7	0.1	1.2	0.6	68.1	10.14
Rest of the world	67.1	42.8	48.3	54.5	29.0	36.8	31.8	44.33
Total Caribbean	<i>0.6</i>	<i>0.1</i>	<i>1.0</i>	<i>0.3</i>	<i>1.3</i>	<i>0.9</i>	<i>0.2</i>	0.63

Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

sourcing of value added in the Caribbean (0.02 per cent).

- However, this average result can be contrasted with country-specific results for Barbados, Guyana and Jamaica, which all increased their sourcing of regional value added, from Trinidad and Tobago (with Belize also featuring as an increasing source of intra-regional value added for Jamaica).
- Generally, for the region, the increase in global sourcing of value added has resulted in a reduction in domestic value added, as opposed to the replacement of regional value added in exports.
- Trinidad and Tobago was the only country in the region that increased domestic value added to exports between 2000 and 2012, with a resultant decrease in the sourcing of regional and global value added.

15.2.3 Shifts in value added: sectoral level

Table 15.2 presents the sectoral breakdown of foreign value added embedded in exports for the Commonwealth Caribbean. The main results for the region as a whole (average percentage point change) in terms of where the largest increases in foreign value added² have been embedded in exports are as follows:

- transport (25.2);
- food and beverages (14.6);
- post and telecommunications (11.8);
- private households (11.7);³ and
- maintenance and repair (11.4).

For each individual country in the region, the sectors where the major increases in foreign value added have accrued are as follows:

- **Antigua and Barbuda:** private households (3.1), maintenance and repair (2.4) and education, health and other services (1.6);

- **The Bahamas:** financial intermediation and business services (2.5), petrochemical and non-metallic mineral products (1.9) and education, health and other services (1.6);
- **Barbados:** transport (19), education, health and other services (3.3) and post and telecommunications (2.50);
- **Belize:** private households (3.6), maintenance and repair (3.2) and education, health and other services (2.1);
- **Guyana:** food and beverages (16.5), mining and quarrying (16.5) and agriculture (5);
- **Jamaica:** transport (5.3), food and beverages (5) and electrical and machinery (1.7);
- **Trinidad and Tobago:** petroleum, chemical and non-metallic mineral products (11.8), education, health and other services (4.5) and post and telecommunications (3.2).

In comparison, the main sectors within the region with decreases in foreign value added (and hence where domestic value added may have increased) are as follows:

- mining and quarrying (−31.1);
- electrical and machinery (−21.5);
- textiles and apparel (−16.8);
- fishing (−12.3); and
- public administration (−9.7).

For each individual country within the region, the sectors where the major decreases in foreign value added have accrued (and hence where domestic value added may have increased) are as follows:

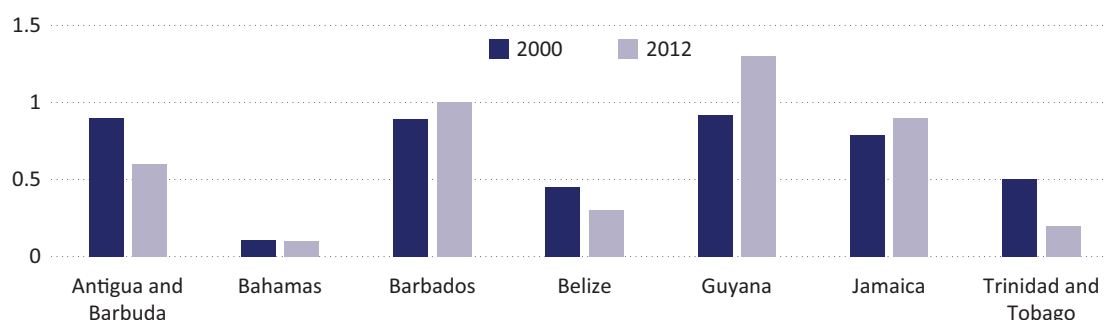
- **Antigua and Barbuda:** Mining and quarrying (−6.7), fishing (−1.9) and other manufacturing (−1.1);
- **The Bahamas:** Fishing (−7.8), transport equipment (−4.5) and agriculture (−2.4);
- **Barbados:** electrical and machinery (−17.1), food and beverages (−3.1) and textiles and apparel (−3.1);

Table 15.2 Foreign value added in exports (percentage point change) between 2000 and 2012

	Antigua and Barbuda	The Bahamas	Barbados	Belize	Guyana	Jamaica	Trinidad and Tobago
Agriculture	-0.7	-2.4	-0.1	2	5	-1.4	0
Fishing	-1.9	-7.8	-1.5	-0.1	0.3	-1.4	0.1
Mining and quarrying	-6.7	0.5	0.4	0	7.2	-0.4	-32.1
Food and beverages	0.6	1.4	-3.1	-7.6	16.5	5	1.8
Textiles and apparel	0.3	0.2	-3.1	-5.6	0.9	-9.1	-0.4
Wood and paper	-0.7	0.9	-3	-1.2	1.9	0.4	-0.3
Petroleum, chemical and non-metallic mineral products	1	1.9	1.9	0.8	-2	-4.4	11.8
Metal products	0.8	0	-2	-0.9	3.2	1.1	1.1
Electrical and machinery	-0.8	0.9	-17.1	-4	-1.1	1.7	-1.1
Transport equipment	-0.3	-4.5	-1.3	-1.1	-1.8	1	-0.8
Other manufacturing	-1.1	-0.6	-0.5	-0.2	-0.1	-0.2	-0.4
Recycling	-0.9	0	-0.7	-0.6	0.6	-0.8	0.1
Electricity, gas and water	-0.8	0.3	-0.2	-0.4	-2.3	-0.1	-0.1
Construction	0.5	0.7	1.1	1.9	-1.7	0.6	0.5
Maintenance and repair	2.4	0.6	1.1	3.2	3.4	0.4	0.3
Wholesale trade	n/a	0.5	n/a	n/a	n/a	n/a	n/a
Retail trade	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hotels and restaurants	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Transport	n/a	1.2	19	2.4	-2.7	5.3	n/a
Post and telecommunications	1	0.9	2.5	1.9	1.4	0.9	3.2
Financial intermediation and business activities	-0.4	2.5	-0.3	-0.4	-8.5	-0.5	-0.4
Public administration	1.5	1.3	0.7	1.4	-14.8	0.3	-0.1
Education, health and other services	1.6	1.6	3.3	2.1	-5.3	1.2	4.5
Private households	3.1	0.5	1	3.6	2.9	0.4	0.2
Others	-0.9	-0.1	-0.4	-0.4	-0.1	-0.1	-0.1
Re-export and re-import	3	0	0.1	3.7	9.2	0.5	0.2

Source: Eora-MRIO.

- **Belize:** food and beverages (-7.6), textiles and apparel (-5.6) and wood and paper (-1.2);
- **Guyana:** public administration (-14.8), financial intermediation and business activities (-8.5) and education, health and other services (-5.3);
- **Jamaica:** textiles and apparel (-9.1), petroleum, chemical and non-metallic mineral products (-4.4) and agriculture and fishing (both -1.4);
- **Trinidad and Tobago:** mining and quarrying (-32.1), electrical and

Figure 15.3 Proportion of regional value added in exports (%) in 2000 and 2012

Note: Percentage point change between 2000 and 2012.

Source: Data from Eora-MRIO.

machinery (–1.1) and transport equipment (–0.8).

15.3 Pacific: key findings

- Between 1995 and 2012, Fiji and Papua New Guinea increased the proportion of foreign value added in their exports. Australia and, to a much lesser extent, New Zealand, by contrast, experienced a decrease, and the proportion of domestic value added in their exports increased.
- Globally, the value added contribution of Australia to world exports has increased dramatically in recent years, while that of New Zealand has decreased.
- Overall, the regional contribution of value added to global exports has increased, from around 3 per cent (2000) to 7 per cent (2012), except in the case of Australia.
- Each of the individual countries of the Pacific increased their sourcing of value added from Australia between 2000 and 2012.
- The sectors with the largest increases in foreign value added in exports were agriculture (4.5), mining and quarrying (2.7), post and telecommunications (1.7), hotels and restaurants (1.5) and construction (0.8).

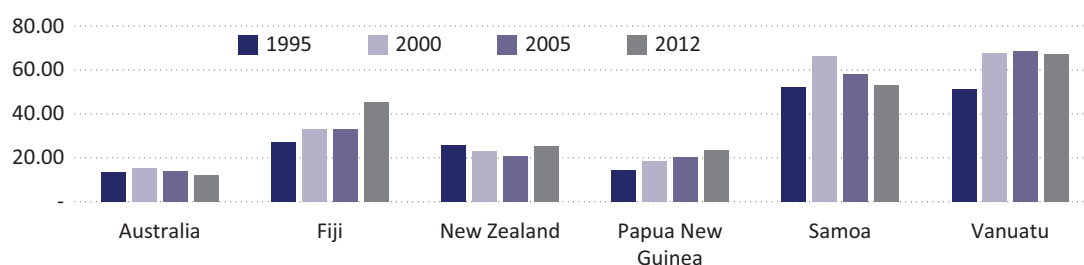
- The sectors with the largest decreases in foreign value added (and hence where domestic value added may have increased) were financial intermediation and business services (–7.1), petroleum, chemical and non-metallic mineral products (–2.2), education, health and other services (–0.9), wood and paper (–0.5) and retail trade (–0.5).

15.3.1 Shifts in value added: Aggregate level

Figure 15.4 presents the results of an analysis of changes in the proportion of foreign value added over time between 1995 and 2012 for Pacific countries. Fiji and Papua New Guinea increased the proportion of foreign value added in their exports over this period. Australia and, to a much lesser extent, New Zealand, by contrast, saw a reduction in the proportion of foreign value added in their exports, which indicates an increase in domestic value added.⁴ In the case of the smaller economies of Samoa and Vanuatu, almost 70 per cent of the value added embedded in exports is imported (foreign value added).

Figure 15.5 presents the contributions of the economically smaller members of the Pacific. These results indicate that, in 2012, world exports included slightly more than 0.02 per cent of value added generated in Papua New Guinea—a country that consistently

Figure 15.4 Proportion of foreign value added embedded in exports (backwards participation index)



Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

increased its contribution of value added to world exports over the period from 2000 to 2012. In comparison, the contribution of the other Pacific island countries—Fiji, Samoa and Vanuatu—increased between 2000 and 2005 but then decreased in 2012.

Figure 15.6 analyses the value added contribution of Australia and New Zealand to world exports. It is clear that Australia's contribution has increased dramatically in recent years, whereas that of New Zealand has decreased. This is explained by the rise in the price of minerals observed in the past decade but also by the use of other Australian inputs into global exports.

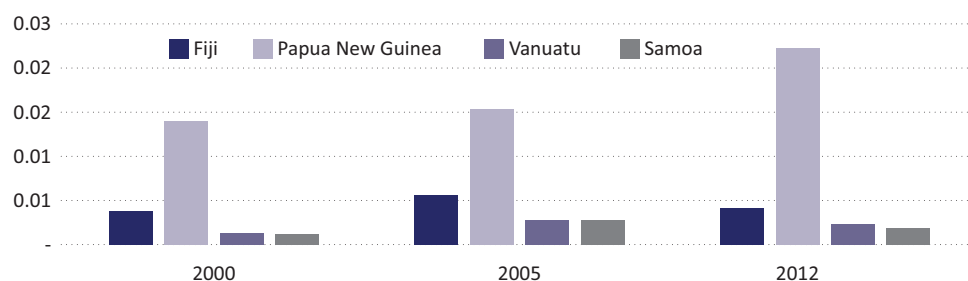
15.3.2 Shifts in value added: Regional picture

Table 15.3 presents the origin of value added from within the region, as well as the rest of the world, in 2000 and 2012. Looking at Australia,

the domestic contribution of value added to exports increased between 2000 (86 per cent) and 2012 (88 per cent). This process reduced the contribution of value added to exports from other regional partners in the Pacific, as well as the rest of the world. Overall, the regional contribution of value added has increased to a greater extent compared with other global partners, from around 3 per cent (2000) to 7 per cent (2012).

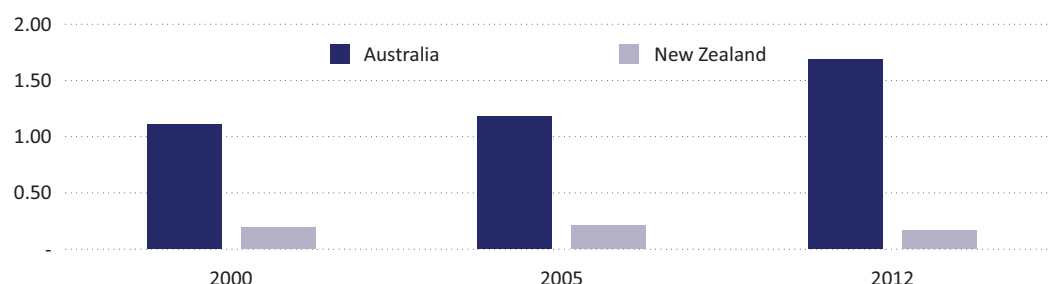
Each of the individual countries of the Pacific increased its regional sourcing of value added, with the exception of Australia (Table 15.4). While Samoa increased its domestic value added as well as foreign value added from the Pacific region, the contribution from the rest of the world decreased. Fiji, on the other hand, experienced a decrease in domestic value added to exports and an increase in foreign value added, from the rest of the world as well as from other Pacific countries (Figure 15.7).

Figure 15.5 Pacific island countries' contribution of value added to world exports (%)



Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

Figure 15.6 Australia and New Zealand's contribution of value added to world exports (%)



Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

15.3.3 Shifts in value added: Sectoral level

Table 15.5 presents the sectoral breakdown of foreign value added embedded in exports for the Commonwealth Pacific. The main results for the region as a whole (average percentage point change) in terms of where the largest increases in foreign value

added⁵ have been embedded in exports are as follows:

- agriculture (4.5);
- mining and quarrying (2.7);
- post and telecommunications (1.7);
- hotels and restaurants (1.5); and
- construction (0.8).

Table 15.3 Origin of value added in exports in 2000 and 2012 (%)

	Australia	Fiji	New Zealand	Papua New Guinea	Samoa	Vanuatu	Rest of the world	Average
2000								
Australia	85.66	3.97	4.42	3.26	1.37	2.38	1.11	14.60
Fiji	0.01	69.52	0.01	0.02	0.08	0.11	0	9.96
New Zealand	0.68	2.15	77.67	0.41	0.67	0.93	0.19	11.81
Papua New Guinea	0.07	0.02	0.02	83.7	0.06	0.06	0.01	11.99
Samoa	0	0.01	0	0	36.02	0.03	0	5.15
Vanuatu	0	0.01	0	0	0.03	36.12	0	5.17
Rest of the world	13.57	24.32	17.87	12.6	61.77	60.38	98.68	41.31
Total Pacific	0.77	6.16	4.46	3.7	2.21	3.5	1.32	3.16
2012								
Australia	88.15	9.48	7.57	7.59	7.73	8.4	1.69	18.66
Fiji	0.01	57.65	0.04	0.02	0	0.08	0	8.26
New Zealand	0.48	3.51	74.84	0.49	0.25	0.52	0.17	11.47
Papua New Guinea	0.07	0.03	0.04	78.08	0.03	0.05	0.02	11.19
Samoa	0	0.01	0	0	47.57	0.02	0	6.80
Vanuatu	0	0.01	0	0	0.01	35.22	0	5.03
Rest of the world	11.29	29.3	17.51	13.81	44.41	55.71	98.12	38.59
Total Pacific	0.57	13.05	7.65	8.11	8.02	9.07	1.88	6.91

Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

Table 15.4 Shifts in regional value added

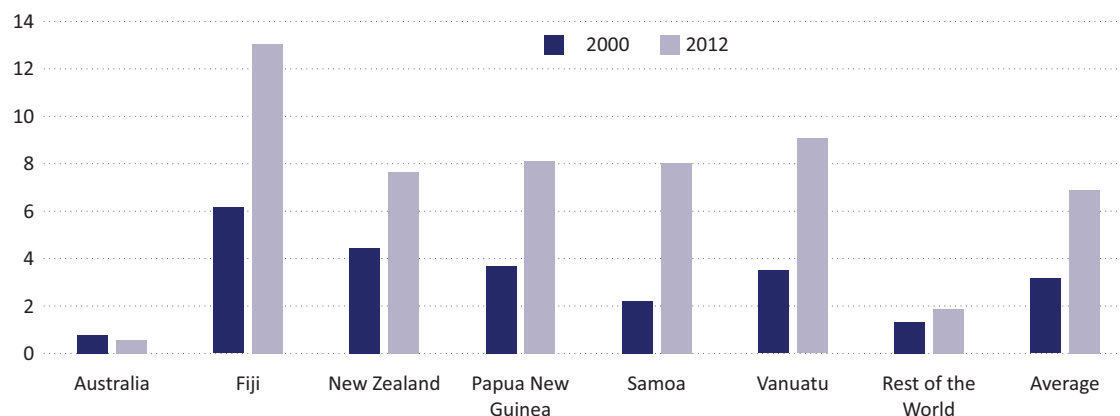
	Australia	Fiji	New Zealand	Papua New Guinea	Samoa	Vanuatu	Rest of the World	Average
Percentage point change 2000 and 2012								
Australia	2.49	5.51	3.15	4.33	6.36	6.02	0.58	4.06
Fiji	0	-11.87	0.03	0	-0.08	-0.03	0	-1.71
New Zealand	-0.2	1.36	-2.83	0.08	-0.42	-0.41	-0.02	-0.35
Papua New Guinea	0	0.01	0.02	-5.62	-0.03	-0.01	0.01	-0.80
Samoa	0	0	0	0	11.55	-0.01	0	1.65
Vanuatu	0	0	0	0	-0.02	-0.9	0	-0.13
Rest of the world	-2.28	4.98	-0.36	1.21	-17.36	-4.67	-0.56	-2.72
Total Pacific	-0.2	6.89	3.19	4.41	5.81	5.57	0.56	3.75

Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

For each individual country in the region, the sectors where the major increases in foreign value added have accrued are as follows:

- **Australia:** mining and quarrying (10.3), metal products (2.2), electrical and machinery (2.1), hotels and restaurants (0.7) and textiles and apparel (0.5);
- **Fiji:** agriculture (6.8), post and telecommunications (2.9), transport (0.2), public administration (0.9) and fishing (0.9);
- **New Zealand:** food and beverages (3.4), wood and paper (1.6), agriculture (1.3), financial intermediation and business services (1.3) and metal products (0.4);
- **Papua New Guinea:** agriculture (8.3), mining and quarrying (7.2), electricity, gas and water (0.9), construction (0.5) and fishing (0.3);
- **Samoa:** construction (5.9), post and telecommunications (5.1), hotels and

Figure 15.7 Proportion of regional value added in exports (percentage point change) between 2000 and 2012



Note: Percentage point change between 2000 and 2012.

Source: Data from Eora-MRIO.

Table 15.5 Shifts in value added in exports between 2000 and 2012 by sector (percentage point change each year)

	Australia	Fiji	New Zealand	Papua New Guinea	Samoa	Vanuatu
Agriculture	−1	6.8	1.3	8.3	0.5	12.4
Fishing	0	0.9	0.2	0.3	0.2	1.6
Mining and quarrying	10.3	−0.6	−0.3	7.2	0	−0.4
Food and beverages	−0.2	0	3.4	−0.5	−1.1	n/a
Textiles and apparel	0.5	0	−0.9	−0.2	−0.5	−0.5
Wood and paper	−0.2	−1.6	1.6	−0.5	−0.9	−1.1
Petroleum, chemical and non-metallic mineral products	−0.3	−4.9	−0.5	−2.1	−1.3	−3.8
Metal products	2.2	0.3	0.4	−1.2	−0.4	−0.8
Electrical and machinery	2.1	0	−1.9	−0.1	−0.1	−1.2
Transport equipment	0.1	0.1	−0.5	0	−0.7	0.5
Other manufacturing	0.1	0.1	0	−0.1	−0.4	−0.4
Recycling	0	0	0.1	0	−0.1	0
Electricity, gas and water	−0.2	−1.7	0.1	0.9	−0.2	−1.3
Construction	−0.1	−0.3	−0.7	0.5	5.9	−0.8
Maintenance and repair	−0.2	0.5	n/a	0	1	0.7
Wholesale trade	−1.3	0.2	−2	−1	2.4	1.8
Retail trade	−5	n/a	n/a	n/a	n/a	1.9
Hotels and restaurants	0.7	1.7	n/a	0.2	2.7	3.6
Transport	0	2	1	−0.7	n/a	0.2
Post and telecommunications	−0.8	2.9	−0.2	−1	5.1	4.2
Financial intermediation and business activities	−5.3	−6.9	1.3	−9.3	−9.2	−13.1
Public administration	−0.5	0.9	−1.1	0	−0.9	−0.3
Education, health and other services	−0.9	0.1	−1	−0.5	−2	−1.1
Private households	0	0.2	0	0	−0.1	−0.1
Others	0.1	−0.5	−0.2	−0.3	−0.4	−0.5
Re-export and re-import	0	0	0	0	0	0

Source: Adapted from Mendez-Parra (2015) based on Eora-MRIO.

restaurants (2.7), wholesale trade (2.4) and agriculture (0.5);

- **Vanuatu:** agriculture (12.4), post and telecommunications (4.2), hotels and restaurants (3.6), retail trade (1.9) and wholesale trade (1.8).

In comparison, the main sectors within the region with decreases in foreign value added (and hence where domestic value added may have increased) are as follows:

- financial intermediation and business services (−7.1);

- petroleum, chemical and non-metallic mineral products (–2.2);
- education, health and other services (–0.9);
- wood and paper (–0.5); and
- retail trade (–0.5).

For each individual country within the region, the sectors where the major decreases in foreign value added have accrued (and hence where domestic value added may have increased) are as follows:

- **Australia:** financial intermediation and business activities (–5.3), retail trade (–50), wholesale trade (–1.3), agriculture (–1) and education, health and other services (–0.9).
- **Fiji:** financial intermediation and business activities (–6.9), petroleum, chemical and non-metallic mineral products (–4.9), electricity, gas and water (–1.7), wood and paper (–1.6) and mining and quarrying (–0.6);
- **New Zealand:** wholesale trade (–2), electrical and machinery (–1.9), public administration (–1.1), education, health and other services (–1) and textiles and apparel (–0.9);
- **Papua New Guinea:** financial intermediation and business activities (–9.3), petroleum, chemical and non-metallic mineral products (–2.1), metal products (–1.2), post and telecommunications (–1) and transport (–0.7);
- **Samoa:** financial intermediation and business activities (–9.2), education, health and other services (–2), petroleum, chemical and non-metallic mineral products (–1.3), food and beverages (–1.1) and both wood and paper and public administration (–0.9);
- **Vanuatu:** financial intermediation and business activities (–13.1), petroleum, chemical and non-metallic mineral products (–3.8), electricity, gas and water (–1.3), electrical and machinery (–1.2) and

each of the following: wood and paper and education, health and other services (–1.1).

15.4 Concluding remarks

This overview of what the available evidence suggests regarding the nature and position of GVC engagement in the Caribbean and Pacific regions is not meant to be exhaustive. Rather, it is intended to be indicative of where additional research endeavours are required. Analysis of the shifts over time in terms of domestic and foreign value added must be considered within the broader context of institutional and policy frameworks, as well as global developments. Major omissions from this descriptive analysis relate to policy measures such as goods, services and investment restrictiveness. We have not explored in detail how the trends over time described in the previous sub-sections have been translated into firm-level performance, or the interaction with human capital and technological capability indicators.

These aspects, in addition to the aforementioned policy restrictiveness indicators, relate to the trade-investment-services-intellectual property nexus described by Baldwin (2012). Within this evolving nexus, the imperative of adapting to the rise of intermediate rather than final goods trade; addressing investment shortfalls in facilities and training; overcoming barriers to infrastructure services; and boosting flows of knowledge and managerial know-how between countries are underscored.

As well as obtaining information on the characteristics and types of firms involved in global trade within GVCs (types of products produced; level of technological sophistication; nature of the organisational structure between firms), it is important also to consider the broader institutional context within which firms trade and interact. This includes in relation to organisations designed to

facilitate these networking processes, such as business associations. These interactions then subsequently need to be understood in relation to the interface and interaction with institutions and frameworks established in view of public policy considerations.

From this perspective, interactions between public and private sector actors need to be contextualised regarding the advancement of technological progress and broader societal learning, as part of a broader innovation system. A more micro-level analysis of value addition processes must necessarily accompany the more macro-level analyses of trade in value added, derived from input–output tables, and situated within a broader institutional framework and national innovation system.

Notes

- 1 The findings for the Caribbean and Pacific are based on analysis of Eora Multi-Regional Input–Output (MRIO) data and background papers prepared by Mendez-Parra (2016).
- 2 Excluding ‘others’ and ‘re-import and re-export’.
- 3 Remittances received.
- 4 In the case of New Zealand, these may be associated with agricultural products (i.e. feedstuff), which saw a sharp increase in their prices between 2005 and 2012. For Australia, these results may reflect the major price increases experienced for some types of

mineral and agricultural commodities between 2000 and 2012.

- 5 Excluding ‘others’ and ‘re-import and re-export’.

References

- Baldwin, R. (2012) WTO 2.0: Global governance of supply-chain trade, CEPR Policy Insight No. 64, London: Centre for Economic Policy Research.
- Slany, A. and Davis, W. (2016) How can African countries increase their involvement in global and regional value chains, Mimeo.
- Cheng, K., Rehman, S., Seneviratne D. and Zhang S. (2015) Reaping the Benefits from Global Value Chains, Working Paper No. 15/204, International Monetary Fund: Washington D.C.
- Kowalski, P., Lopez-Gonzalez, J., Ragoussis, A. and Ugarte C. (2015), ‘Participation of developing countries in global value chains: implications for trade and trade-related policies’, *OECD Trade Policy Papers No. 179*, OECD Publishing, Paris. Available at: <http://dx.doi.org/10.1787/5js33lfw0xxn-en> (accessed 26 October 2015).
- Mendez-Parra, M. (2016) Value Chains and Trade in the Commonwealth Caribbean and Pacific, Mimeo, Overseas Development Institute: London.