The coastal city of San Juan, Puerto Rico.

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The state of island economies and development in 2021

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Every year, this Annual Report starts by providing a series of numerical data files in the form of tables consisting of economic and development characteristics for a subset of island states and sub-national island jurisdictions (SNIJs). Although the values may not change significantly from one year to the next, by providing and updating the same characteristics annually, readers of the series are able to see subtle changes taking place on these islands. This year, we have taken that one step further by adding new columns on many of the tables, showing change over longer time periods. So, for example, instead of showing the population growth rate between 2019 and 2020, Table 1.1 in this volume now shows population growth over the eleven-year period from 2010 to 2021. Also, Table 1.3 shows the percent change in the urban share of the population over the past six years. We hope that this makes it easier to see beyond the minor annual changes to reveal more sustained changes.

Despite the use of the word 'economies' in this chapter's title,

past issues of these Annual Reports have encompassed 'island development' in the broadest interpretation of the term. For example, several chapters in the 2020 Annual Report emphasized public health variables during the COVID-19 pandemic. This theme was reflected in the use of characteristics such as causes of death, government expenditures on health as a share of total expenditures, and prevalence of obesity. This year, we are focusing more explicitly on the United Nations' Sustainable Development Goals (SDGs) and, in consideration of the 2021 COP26 climate meetings in Glasgow, Scotland, island innovation in climate change policy. Although the statistical tables in this chapter may not directly address these two themes, we encourage you to review some of the summary statistics on these subjects in the complementary chapters, including those by Mohan, Sindico, and Moncada and Randall.

SECTION 1: ISLAND STATES

Only eight of the 48 island states represented in Table 1.1 saw an absolute decrease in their populations over the past decade. Only in Japan can the cause of that population decline be described by the demographic transition and industrialization in the modern industrial world. Japan has a declining birth rate and an aging population that some predict will see the labour force decrease to 70% of its current level by 2050 (Fukuyama, 2018). Fukuyama (2018) goes on to suggest that these demographic changes are mere symptoms of a larger digital transformation of Japanese society that may provide opportunities for this archipelagic country to meet the Sustainable Development Goals

TABLE 1.1: Population, Population Density, and Average Annual Population Growth Rate, 2010 to 2021

Continent	Island Country	Population in 2021	Population density (people/km²) 2020	Population in 2010	Population Growth Rate (%) 2010-2021
Asia	Japan	124,687,293	345	128,070,000	-2.64%
	Singapore	5,866,139	8019.474	5,076,732	15.55%
	Indonesia	275,122,131	145.684	241,834,226	13.76%
	Timor-Leste	1,413,958	88.665	1,093,517	29.30%
	Brunei Darussalam	471,103	83.014	388,634	21.22%
	Philippines	110,818,325	367.512	93,966,784	17.93%
	Sri Lanka	22,889,201	354.309	20,261,738	12.97%
	Maldives	390,669	1801.807	365,730	6.82%
	Bahrain	1,526,929	2181.517	1,240,864	23.05%
Europe	Cyprus	1,281,506	130.667	1,112,617	15.18%
	Iceland	354,234	3.634	318,041	11.38%
	United Kingdom	67,215,293 (World Bank data)	277.83	62,766,365	7.09%
	Ireland	5,224,884	72.503	4,560,155	14.58%
	Malta	460,891	1641.516	414,508	11.19%

— if not in 2030, then at least by 2050. Several of the other islands experiencing net population decline or stagnation over the 11 years represented in this table, such as the Federated States of Micronesia and Nauru, have taken place because of a massive outmigration of Indigenous peoples, moving largely for economic reasons and to former colonial metropoles (Connell, 2018). Although this is especially the case in islands of the Pacific (or Oceania), there has also been population outmigration or

Continent	Island Country	Population in 2021	Population density (people/km^2) 2020	Population in 2010	Population Growth Rate (%) 2010-2021
Africa	Cabo Verde	589,451	137.962	492,644	19.65%
	Madagascar	27,534,354	47.595	21,151,640	30.18%
	Seychelles	96,387	214.048	89,770	7.37%
	Mauritius	1,386,129	623.517	1,250,400	10.85%
	Comoros	864,335	467.273	689,696	25.32%
	São Tomé and Príncipe	213,948	228.293	180,372	18.61%
Oceania	New Zealand	4,991,442	19.309	4,350,700	14.73%
	Papua New Guinea	7,399,757	19.757	7,310,512	1.22%
	Solomon Islands	690,598	24.54	527,861	30.83%
	Vanuatu	303,009	25.197	236,216	28.28%
	Fiji	939,535	49.066	859,816	9.27%
	Tonga	105,780	146.801	103,981	1.73%
	Samoa	204,898	70.11	185,944	10.19%
	Nauru	9,770	541.7	10,009	-2.39%
	Micronesia, Fed. States	101,675	164.316	102,916	-1.21%
	Marshall Islands	78,831	328.856	56,361	39.87%
	Kiribati	113,001	147.464	102,930	9.78%
	Tuvalu	11,448	393.067	10,521	8.81%
	Palau	21,613	19.012	17,954	20.38%
	Cook Islands	8,574	–	–	–
	Niue	2,000 (2019)	–	–	–
Caribbean/	Cuba	11,032,343	109.12	11,225,833	-1.72%
Americas	Haiti	11,198,240	413.735	9,949,318	12.55%
	Dominican Republic	10,597,348	224.548	9,695,117	9.31%
	Jamaica	2,816,602	273.422	2,810,464	0.22%
	Bahamas, The	352,655	39.286	354,936	-0.64%
	St. Kitts and Nevis	54,149	204.585	49,011	10.48%
	Antigua and Barbuda	99,175	222.564	88,030	12.66%
	St. Vincent and the Grenadines	101,145	284.479	108,260	-6.57%
	St. Lucia	166,637	301.031	174,092	-4.28%
	Grenada	113,570	330.938	106,227	6.91%
	Barbados	301,865	668.305	282,131	6.99%
	Trinidad and Tobago	1,221,047	272.805	1,328,144	-8.06%
	Dominica	74,584	95.988	70,877	5.23%

stagnation on some of the Caribbean islands. Some of this is attributable to emigration after extreme weather events (Spencer & Urquhart, 2018). For example, Puerto Rico saw a dramatic exodus to the mainland USA following the 2017 hurricane season (Alexander et al., 2019).

Although not presented here in the form of data, we should not overlook the existence of intra-regional migration. Not all emigrants from islands in the Pacific and the Caribbean are destined for the larger, more developed countries of New Zealand, Australia, and the United States. There is a fair amount of movement between islands within each of these regions. American Samoa (54%) and Tokelau (31%) are the destinations of the largest share of Pacific regional migrants, while the US Virgin Islands (82%), Sint Maarten (57%), the British Virgin Islands (46%), Antigua and Barbuda (36%), and the Turks and Caicos Islands (36%) have the highest proportion of intra-Caribbean immigrants (Rai, 2019). Many of these destination islands are semi-autonomous territories, often receiving immigrants from other islands in the region sharing the same colonial metropole. The other, less visible mobility pattern taking place is the movement of people from smaller, more remote islands to more central and urbanized islands within an archipelago (Connell & Aldrich, 2020).

The beautiful, warm colours of Saint Thomas, in the US Virgin Islands. These islands have the highest proportion of intra-Caribbean immigration, at 82%.

TABLE 1.2: Crude Birth Rate, Crude Death Rate, and Life Expectancy at Birth, 2021

Continent	Island Country	Crude Birth Rate/1000	Crude Death Rate/1000	Life Expectancy at Birth
Asia	Japan	7.0	11.4	84.7
	Singapore	9.1	3.9	86.2
	Indonesia	15.6	6.7	72.8
	Timor-Leste	31.5	5.7	69.6
	Philippines	22.7	6.0	70.3
	Sri Lanka	14.0	6.5	77.8
	Maldives	15.7	4.1	76.7
	Bahrain	12.5	2.8	79.7
Europe	Cyprus	10.8	6.9	79.5
	Iceland	13.1	6.6	83.5
	United Kingdom	11.8	9.4	81.3
	Ireland	12.6	6.7	81.5
	Malta	9.8	8.4	83.0
Africa	Cabo Verde	18.8	5.8	73.5
	Madagascar	22.9	6.1	67.9
	Seychelles	12.6	6.8	75.8
	Mauritius	12.4	7.2	76.7
	Comoros	23.0	6.6	66.9
	São Tomé and Príncipe	28.9	6.3	66.7
Oceania	New Zealand	12.8	6.9	82.3
	Papua New Guinea	22.1	6.0	69.9
	Solomon Islands	23.1	4.0	76.5
	Vanuatu	22.0	4.0	74.8
	Fiji	16.9	6.3	74.0
	Tonga	20.6	4.9	77.3
	Samoa	19.3	5.4	74.9
	Nauru	21.5	6.2	67.6
	Micronesia, Fed. States	18.7	4.2	74.2
	Marshall Islands	22.4	4.3	74.4
	Kiribati	20.3	6.9	67.6
	Tuvalu	23.0	8.0	68.1
	Palau	11.5	8.2	74.4

Continent	Island Country	Crude Birth Rate/1000	Crude Death Rate/1000	Life Expectancy at Birth
	Cook Islands	12.9	8.9	76.9
	Niue	6.3 (June 2019)	7.5 (June 2019)	N/A
		3.0 (Dec. 2019)	1.2 (Dec. 2019)	N/A
Caribbean/	Cuba	10.3	9.2	79.4
Americas	Haiti	21.4	7.3	65.6
	Dominican Republic	18.2	6.3	72.3
	Jamaica	16.0	7.4	75.5
	Bahamas, The	14.8	6.3	75.9
	St. Kitts and Nevis	12.4	7.2	76.8
	Antigua and Barbuda	15.3	5.6	77.6
	St. Vincent and the Grenadines	12.4	7.4	76.4
	St. Lucia	12.3	8.0	78.7
	Grenada	14.3	8.3	75.5
	Barbados	11.0	7.9	78.3
	Trinidad and Tobago	11.1	8.7	74.9
	Dominica	14.2	8.1	78.0

Among the islands in this report, there remains a sharp divide among those places wherein population change is driven by natural growth and those where changes are driven largely by migration. The significant gap between the birth and death rates in places such as Timor-Leste, the Philippines, Madagascar, and Haiti, as seen in Table 1.2, points towards continued natural population growth. Those where the birth rates have either been lower than the death rates (e.g., Japan) or are approximately the same (e.g., Malta and the United Kingdom) have seen population stagnation or decline (before migration is factored in). There is also a strong correlation between those places where natural population growth is negative, life expectancy at birth, and the average age of islanders. The only island countries where the life expectancy at birth is greater than 80 years of age are in the developed world.

TABLE 1.3: **Urban Population Share, 2015, 2020, and 2021**

Continent	Island Country	Urban Population (%)			Change in Urban Population % from 2015 to 2021
		2015	2020	2021	
Asia	Japan	93.5	91.8	91.9	-1.7%
	Singapore	100.0	100.0	100.0	0
	Indonesia	53.7	56.6	57.3	+6.7%
	Timor-Leste	32.8	31.3	31.7	-3.4%
	Brunei Darussalam	77.2	78.3	78.6	+1.8%
	Philippines	44.4	47.4	47.7	+7.4%
	Sri Lanka	18.4	18.7	18.9	+2.7%
	Maldives	45.5	40.7	41.1	-9.7%
	Bahrain	88.8	89.5	89.6	+0.9%
Europe	Cyprus	66.9	66.8	66.9	0
	Iceland	94.1	93.9	93.9	-0.2%
	United Kingdom	82.6	83.9	98.1	+18.8%
	Ireland	63.2	63.7	63.9	+1.1%
	Malta	95.4	94.7	94.8	-0.6%
Africa	Cabo Verde	65.5	66.7	67.1	+2.4%
	Madagascar	35.1	38.5	39.2	+11.7%
	Seychelles	53.9	57.5	58.0	+7.6%
	Mauritius	39.7	40.8	40.8	+2.8%
	Comoros	28.3	29.4	29.6	+4.6%
	São Tomé and Príncipe	65.1	74.4	75.1	+15.4%
Oceania	New Zealand	86.3	86.7	86.8	+0.6%
	Papua New Guinea	13.0	13.3	13.5	+3.8%
	Solomon Islands	22.3	24.7	25.1	+12.6%
	Vanuatu	26.1	25.5	25.7	-1.5%
	Fiji	53.7	57.2	57.7	+7.4%
	Tonga	23.7	23.1	23.1	-2.5%
	Samoa	19.1	17.9	17.7	-7.3%
	Nauru	100.0	100.0	100.0	0

Continent	Island Country	Urban Population (%)			Change in Urban Population % from 2015 to 2021
		2015	2020	2021	
	Micronesia, Fed. Sts.	22.4	22.9	23.1	+3.1%
	Marshall Islands	72.7	77.8	78.2	+7.6%
	Kiribati	44.3	55.6	56.3	+27.1%
	Tuvalu	59.7	64.0	64.8	+8.5%
	Palau	87.1	81.0	–	-7.0%
	Cook Islands	75.0 (2014)	75.5	–	+0.7%
	Niue	38.0 (2014)	46.2	–	+21.6%
Caribbean/	Cuba	77.1	77.2	77.3	+0.2%
Americas	Haiti	58.7	57.1	58.0	-1.1%
	Dominican Republic	78.9	82.5	83.2	+5.4%
	Jamaica	54.8	56.3	56.7	+3.4%
	Bahamas, The	82.9	83.2	83.4	+0.6%
	St. Kitts and Nevis	32.1	30.8	30.9	-3.7%
	Antigua and Barbuda	23.8	24.4	24.4	+2.5%
	St. Vincent and the Grenadines	50.6	53.0	53.5	+5.7%
	St. Lucia	18.5	18.8	18.9	+2.1%
	Grenada	35.6	36.5	36.7	+3.1%
	Barbados	31.6	31.2	31.2	-1.2%
	Trinidad and Tobago	8.5	53.2	53.3	+527.1%
	Dominica	69.5	71.1	71.4	+2.7%

Table 1.3 shows that urbanization continues to be one of the most pervasive human mobility trends of the late 20th and early 21st centuries. In all but 12 of the 48 island states listed, the proportion of the island population defined as 'urban' increased from 2015 to 2021. Among those 12 that saw a decrease in their relative urban population, such as Iceland, Malta, and Japan, they have likely reached a level of urban saturation that discourages any further urbanization. In Henderson and Turner's (2020, p. 150) words, these metropolises are "fully urbanized," and may even run the risk of becoming obsolete (Glaeser, 2000). In others, such as Timor-Leste and Haiti, the diseconomies of

living in a large city that may no longer offer the same kinds of employment opportunities or urban amenities that had been the case in the past may be causing some rural households to reconsider the rural to urban move. Particularly if urbanization takes place without a parallel increase in per capita incomes, "poorer countries cannot afford the ideal investments required to catch-up with rapid industrialization" (Henderson & Turner, 2020, p. 150). The continued urbanization on several of the Pacific islands may be a function of the growth of "informal urban" villages, a term used by Jones (2016a,b) to describe informal and squatter settlements in any vacant space near the main city that is not formally planned or developed by municipal governments (e.g., edges of rivers, electricity easements, and even waste disposal sites). For example, Maebuta and Maebuta (2019) reported that in Honiara, the capital of the Solomon Islands, illegal squatter settlements on government land were growing at a rate of 26% per year, resulting in 17,000 of the 50,000 city's residents being illegal squatters.

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Note that the concepts of 'urban' versus 'rural' on some small islands may be more complicated than in mainland regions. For example, the description of Singapore as a city-state infers that the entire space is taken over by urban functions. Indeed, Grydehøj and Swaminathan (2018) note that some of the most densely populated cities are located on islands. Even when some of the island landscape may appear to be rural (e.g., agricultural activities, forest), it may still be urban according to most definitions that include commuter zones surrounding larger cities. The more important urban–rural divide on small islands, which is also reflected in differences in levels of poverty and development, is more likely to be between the 'mainland islands' and the smaller, more remote islands in the archipelago (Putri & Salim, 2020).

Table 1.4 (pages 24-25) shows the absolute value of all goods and services produced in a country, as measured in Gross Domestic Product (GDP) using USD. Even more so than population, this variable reveals the vast differences in the size of the islands. At almost 5 billion USD, Japan's economy is more than 100,000 times the size of Tuvalu's economy. This is yet another reminder that all islands are unique and, as such, conceptualizing 'small islands' as a homogenous group is misleading. That said, GDP per capita does standardize some of the most significant differences in the economic structure of these islands and is more meaningful to the everyday lives of residents. Here, per capita production in countries such as Iceland, Ireland, Singapore, and New Zealand is comparable to the Japanese economy. Although the GDP per capita in Nauru is comparable to values in other Pacific Island countries, this masks the unfortunate history of changes in GDP per capita on this island nation. At one point in the 1970s and early 1980s, thanks to the mining and export of phosphates, Nauru had one of the highest GDPs per capita in the world (Gowdy & McDaniel, 1999; Thomas, 2013). The Nauru Trust Fund was established by Nauru's government to build a capital reserve that could be invested in other initiatives to diversify the economy after the natural resource was gone. Unfortunately, as a result of poor investment decisions and corruption, the Trust was depleted to almost nothing, leaving the country with little to show for their former resource other than a scarred landscape (Connell, 2006; Gowdy & McDaniel, 1999).

AFP photo

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TABLE 1.4: Gross Domestic Product (GDP) and Change in GDP; Per Capita GDP and Change in GDP/capita, 2020

Continent	Island Country	GDP 2020 in millions of USD	Growth Rate of GDP % 2019-2020	GDP per capita 2020 in USD	Growth Rate of GDP per capita % 2019-2020
Asia	Japan	4,975,000	-4.7	39,539	-5.5
	Singapore	3,399,980	-5	59,798	-5.1
	Indonesia	1,058,000	-2.1	3,870	-3.1
	Timor-Leste	1,821	-3	1,381	-10.456
	Brunei Darussalam	12,016	1.2	27,466	0.2
	Philippines	361,489	-9.6	3,299	-10.8
	Sri Lanka	80,707	-3.6	3,682	-4.1
	Maldives	4,030	-3.4	7,456	-33.2
	Bahrain	38,475	-5.8	23,443	-9.159
Europe	Cyprus	23,804	-5.1	26,633	-6.4
	Iceland	21,718	-6.5	59,270	-8
	United Kingdom	2,708,000	-9.8	40,285	-10.3
	Ireland	425,889	5.9	85,268	4.6
	Malta	14,647	-7	27,885	-10.8
Africa	Cabo Verde	1,704	-14.8	3,064	15.7
	Madagascar	13,721	-4.2	495	-6.7
	Seychelles	1,125	-10.7	11,425	-11.5
	Mauritius	10,914	-14.9	8,623	-14.9
	Comoros	1220	4.9	1,403	2.7
	São Tomé and Príncipe	473	3.1	2,158	1.2
Oceania	New Zealand	210,886	1	41,478	-1.1
	Papua New Guinea	23,592	-3.879	2,637	-5.7
	Solomon Islands	1,551	-4.3	2,258	-6.7
	Vanuatu	855	-9.2	2,783	-11.4
	Fiji	4,376	-19	4,882	-19.6
	Tonga	512 (2019)	0.734 (2018-19)	4,903 (2019)	-0.5 (2018-19)
	Samoa	807	-2.7	4,067	-3.4
	Nauru	118.22 (2019)	0 (2018-19)	10,983	0.8 (2018-2019)
	Micronesia, Fed. Sts.	408 (2019)	1.2 (2018-19)	3,585 (2019)	0.2 (2018-2019)
	Marshall Islands	239 (2019)	6.529 (2018-19)	4,073 (2019)	5.842 (2018-19)

Continent	Island Country	GDP 2020 in millions of USD	Growth Rate of GDP % 2019-2020	GDP per capita 2020 in USD	Growth Rate of GDP per capita % 2019-2020
	Kiribati	200	2.5	1,671	1
	Tuvalu	49	4.4	4,143	3.2
	Palau	268 (2019)	-4.247 (2018-19)	14,908 (2019)	-4.7 (2018-19)
	Cook Islands	300 (2016 CIA)	–	16,700 (2016 CIA)	–
	Niue	–	–	–	–
Caribbean/	Cuba	103,131 (2019)	-0.217 (2018-19)	9,100 (2019)	-0.167 (2018-19)
Americas	Haiti	13,418	-3.3	1,177	-4.6
	Dominican Republic	78,845	-6.7	7,268	-7.7
	Jamaica	13,812	-10.2	4,665	-10.6
	Bahamas, The	11,250	-16.3	28,608	-17.1
	St. Kitts and Nevis	927	-10.7	17,436	-11.3
	Antigua and Barbuda	1,415	-16	14,450	-16.7
	St.Vincent and the Grenadines	810	-2.7	7,298	-3
	St. Lucia	1,703	-20.2	9,276	-20.6
	Grenada	1,089	-11.2	9,680	-11.6
	Barbados	4,365	-17.6	15,191	-17.7
	Trinidad and Tobago	21,530	-7.8	15,384	-8.1
	Dominica	470	-16.7	6,527	-16.9

One of the features that differentiates this table from previous versions is the change in growth of GDP from 2019 to 2020. Primarily as a function of the COVID-19 pandemic, almost every country has experienced a decline in their GDP. Although this is widespread, it is especially apparent in those islands that were most dependent on tourism, such as Fiji (-19%), St. Lucia (-20.2%), and Barbados (-17.6%). The Bahamas has suffered two extreme events in a row that continue to adversely impact their tourism economy: the devastation brought about by Hurricane Dorian in 2019 and the COVID-19 pandemic which began in 2020 (Shultz et al., 2020).

TABLE 1.5: Gross National Income (GNI) per Capita, 2019 and 2020 in International $

Continent	Island Country	2019	2020
Asia	Japan	44,780	42,550
	Singapore	92,020	86,480
	Indonesia	11,930	11,750
	Timor-Leste	4,730	4,490
	Brunei Darussalam	66,410	66,460 (2019)
	Philippines	10,200	9,040
	Sri Lanka	13,230	12,870
	Maldives	17,880	12,840
	Bahrain	44,140	44,330 (2019)
Europe	Cyprus	39,830	36,840
	Iceland	61,170	53,590
	United Kingdom	48,040	44,260
	Ireland	68,050	70,850
	Malta	41,690	38,800
Africa	Cabo Verde	7,310	6,230
	Madagascar	1,660	1,540
	Seychelles	29,300	24,310
	Mauritius	26,410	22,390
	Comoros	3,220	3,330
	São Tomé and Príncipe	4,090	4,260
Oceania	New Zealand	42,710	42,800
	Papua New Guinea	4,470	4,240
	Solomon Islands	2,350	2,680
	Vanuatu	3,310	2,880
	Fiji	13,260	10,910
	Tonga	6,510	6,980 (2019)
	Samoa	6,490	6,480 (2019)
	Nauru	17,790	20,770 (2019)
	Micronesia, Fed. Sts.	3,640	4,100 (2019)
	Marshall Islands	5,090 (2018)	5,130 (2019)
	Kiribati	4,650	4,250

Continent	Island Country	2019	2020
	Tuvalu	6,170	6,430
	Palau	19,500 (2018)	19,530 (2019)
	Cook Islands	N/A	N/A
	Niue	N/A	N/A
Caribbean/	Cuba	N/A	N/A
Americas	Haiti	1,790	2,930
	Dominican Republic	18,280	17,060
	Jamaica	9,770	8,850
	Bahamas, The	35,760	31,200
	St. Kitts and Nevis	25,920	24,190
	Antigua and Barbuda	21,500	18,610
	St. Vincent and the Grenadines	12,880	12,810
	St. Lucia	15,140	12,200
	Grenada	16,250	14,370
	Barbados	15,730	13,010
	Trinidad and Tobago	26,950	24,800
	Dominica	12,460	10,740

The impact of the COVID-19 pandemic carries over to Table 1.5, where almost every island country listed experienced a decline in Gross National Income (GNI) per capita between 2019 and 2020. The significance of this event is apparent in the values provided for the islands of Oceania. Among the six islands where 2020 data were not available (hence the comparison is between 2018 and 2019 incomes), five experienced growth — albeit modest at most. Seven islands reported 2020 GNI data and, therefore, incorporated the start of the COVID-19 pandemic. Four of these seven islands experienced per capita GNI decline between 2019 and 2020. New Zealand is a particularly interesting case. The nation's modest growth in income per capita over this period is partly a function of stability of domestic demand, the continued demand for export products, and the ability of the country to rebound more quickly by shielding itself from the public health impacts facing many other nations (Aghion et al., 2021; Parker, 2021).

TABLE 1.6: **Unemployment Rates, 2016–2020**

Continent	Island Country	Unemployment Rate (%), 2016	Unemployment Rate (%), 2020	Change in Unemployment Rate (%), 2016-2020
Asia	Japan	3.2	3.0	-6.3
	Singapore	2.1	5.2	147.6
	Indonesia	5.6	4.1	-26.8
	Timor-Leste	4.4	5.1	15.9
	Philippines	5.5	3.4	-38.1
	Sri Lanka	4.5	4.8	6.7
	Maldives	6.1	7.2	18.0
	Bahrain	4.1 (2014)	4.1	0
Europe	Cyprus	11.8	7.2	-39.0
	Iceland	2.7	5.0	85.2
	United Kingdom	4.8	4.3	-10.4
	Ireland	8	5.9	-26.3
	Malta	4.8	4.1	-14.6
Africa	Cabo Verde	15	12.1	-19.3
	Madagascar	1.8	1.9	5.6
	Seychelles	3.96	4.3	8.6
	Mauritius	6.8	7.1	4.4
	Comoros	8	8.4	5
	São Tomé and Príncipe	13.4	13.9	3.7
Oceania	New Zealand	5.1	4.6	-9.8
	Papua New Guinea	2.5	2.7	8.0
	Solomon Islands	0.7	0.8	14.3
	Vanuatu	1.8	2.0	11.1
	Fiji	4.3	4.8	11.6
	Tonga	2.8	4.4	57.1
	Samoa	8.6	8.9	3.5
	Cook Islands	6.3 (2011)	8.2 (2011)	–
	Niue	12 (2001)	1.0 (2017)	–
	Nauru	22.96 (2011)	13.28 (2013 est.)	–
	Micronesia, Fed. Sts.	–	16.2% (2010 est.)	–
	Marshall Islands	–	6.43 (2019)	–
	Kiribati	–	8.6 (2019)	–

Continent	Island Country	Unemployment Rate (%), 2016	Unemployment Rate (%), 2020	Change in Unemployment Rate (%), 2016-2020
	Tuvalu	–	8.49 (2016)	–
	Palau	–	–	–
Caribbean/	Cuba	2.5	3.9	56.0
Americas	Haiti	40.6	14.5	-64.3
	Dominican Republic	13.8	8.9	-35.5
	Jamaica	13.8	8.4	-39.1
	Bahamas, The	12.7	14.4	13.4
	St. Kitts and Nevis	4.5 (1997)	5.1 (2005)	13.3
	Antigua and Barbuda	11 (2014)	8.7 (2018)	-21.0
	St. Vincent and the Grenadines	19.1	20.3	6.3
	St. Lucia	19.9	17.1	-14.1
	Grenada	33.5 (2013)	20.3	-39.4
	Barbados	11	12.8	16.4
	Trinidad and Tobago	4	6.7	67.5
	Dominica	23 (2014)	11.1 (2016)	–

The impact of the COVID-19 pandemic on unemployment rates has been more mixed. Negative values in Table 1.6's 'Change in Unemployment Rate' column suggest an improvement in this aspect of the economy, with a smaller proportion of the labour force being listed as unemployed. This is the case for several developed states (e.g., Japan, the UK, and Ireland) as well as several Small Island Developing States or SIDS (e.g., Indonesia, Philippines, Haiti, and the Dominican Republic). A more enduring feature that is reflected in this table is the structural divide in overall unemployment rates among developed 'small island states' (SIS) and SIDS. The 2020 unemployment rates among SIS are almost always less than 10%, while many Caribbean SIDS have 2020 unemployment values approaching 20% of their labour forces, with even higher rates among youth — trends that were apparent prior to the COVID-19 pandemic (Craigwell & Wright, 2012; Parra-Torado, 2014).

TABLE 1.7: Human Development Index 2019 and 2016, and Change in HDI

Island Country	2019 HDI	2016 HDI	Change in HDI Value 2016-2019 (%)
Ireland	0.955	0.943	1.27
Iceland	0.949	0.941	0.85
Singapore	0.938	0.935	0.32
United Kingdom	0.932	0.924	0.87
New Zealand	0.931	0.924	0.76
Japan	0.919	0.912	0.77
Malta	0.895	0.885	1.13
Cyprus	0.887	0.873	1.60
Bahrain	0.852	0.853	-0.12
Brunei Darussalam	0.838	0.839	-0.12
Palau	0.826	0.822	0.49
Barbados	0.814	0.811	0.37
Bahamas,The	0.814	0.751	0.49
Mauritius	0.804	0.794	1.26
Seychelles	0.796	0.787	1.14
Trinidad and Tobago	0.796	0.792	0.51
Cuba	0.783	0.773	1.29
Sri Lanka	0.782	0.773	1.16
Grenada	0.779	0.771	1.04
St. Kitts and Nevis	0.779	0.771	1.04
Antigua and Barbuda	0.778	0.765	1.70
St. Lucia	0.759	0.752	0.93
Dominican Republic	0.756	0.743	1.75
Fiji	0.743	0.738	0.68
Dominica	0.742	0.740	0.27
Maldives	0.740	0.728	1.65
St. Vincent and the Grenadines	0.738	0.734	0.55
Jamaica	0.734	0.731	0.41
Tonga	0.725	0.722	0.42
Philippines	0.718	0.704	1.99
Indonesia	0.718	0.703	2.13
Samoa	0.715	0.710	0.70
Marshall Islands	0.704	–	–
Cabo Verde	0.665	0.657	1.22
Kiribati	0.630	0.622	1.29
São Tomé and Príncipe	0.625	0.608	2.80
Micronesia, Fed. States	0.620	0.614	0.98

Island Country	2019 HDI	2016 HDI	Change in HDI Value 2016-2019 (%)
Vanuatu	0.609	0.598	1.84
Timor-Leste	0.606	0.598	1.34
Solomon Islands	0.567	0.561	1.07
Papua New Guinea	0.555	0.549	1.09
Comoros	0.554	0.547	1.28
Madagascar	0.528	0.523	0.96
Haiti	0.510	0.5	2.00

The Human Development Index (HDI) is a relatively simple composite indicator of development that integrates economic, educational, and health indicators. The colours on Table 1.7 represent the four broad categories of the index, with green being Very High (>0.800), red being High (between 0.799 and 0.700), blue being Medium (0.699 – 0.550), and brown being Low (<0.550). Islands have often fared relatively well according to this indicator. Although the 2020 HDI values were not available at the time of writing, in all but two of the 44 islands, the HDI improved between 2016 and 2019. Moreover, the higher positive changes took place in the Low, Medium, and High groups of islands. The relatively strong HDI performance of islands is consistent with their world ranking on many of these broader indices. For example, according to the *World Happiness Report*, six of the 25 'happiest' countries in 2021 were islands (Helliwell et al., 2021). The *World Happiness Report* is a composite of six variables, including GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity of population, and perceptions of corruption (Helliwell et al., 2021). Similarly, using the New Economics Foundation's Happy Planet Index —a combination of life expectancy, wellbeing, and the jurisdiction's ecological footprint — Vanuatu ranked second in the world in 2019 (Patrick et al., 2019; Wellbeing Economy Alliance, 2019).

There is a strong relationship between the HDI and measures of subjective well-being (SWB) although, as might be expected, the Human Development Index is more closely linked to cognitive measures while the SWB indicators are more closely linked to affective dimensions (Yin et al., 2021). Given that one of the themes of this volume is on the Sustainable Development Goals, it is noteworthy that there is a strong positive correlation between how well a country is meeting its SDG goals and measures of SWB in those countries (De Neve & Sachs, 2020). This relationship implies that "economic activity is more important for well-being at lowers [*sic*] levels of economic development" (De Neve & Sachs, 2020, p. 115).

Using preliminary data, for the first time since 1990, the overall HDI of all countries combined declined, primarily as a function of the COVID-19 pandemic (United Nations Conference on Trade and Development, 2021). This should not come as a surprise, given that two of the three components of the HDI — average lifespan and GDP per capita — are directly affected by the viral disease. Moreover, there are preliminary signs that those countries that have traditionally had higher HDI values fared better in terms of the recovery of patients contracting COVID-19 (Buheji et al., 2021).

TABLE 1.8: Consumer Price Index, Compared to Base Year of 2010

Continent	Island Country	2010	2015	2020
Asia	Japan	100	104	106
	Singapore	100	113	114
	Indonesia	100	132	154
	Timor-Leste	100	143	146
	Brunei Darussalam	100	100	101
	Philippines	100	116	133
	Sri Lanka	100	131	165
	Maldives	100	132	135
	Bahrain	100	111	101
Europe	Cyprus	100	102	102
	Iceland	100	118	133
	United Kingdom	100	112	121
	Ireland	100	105	106
	Malta	100	108	114
Africa	Cabo Verde	100	109	111
	Madagascar	100	140	192
	Seychelles	100	121	130
	Mauritius	100	120	133
	Comoros	100	98	104
	São Tomé and Príncipe	100	154	185
Oceania	New Zealand	100	108	116
	Papua New Guinea	100	128	–
	Solomon Islands	100	125	137
	Vanuatu	100	107	–
	Fiji	100	116	129
	Tonga	100	110	–
	Samoa	100	108	116
	Nauru	–	–	–
	Micronesia, Fed. Sts.	–	–	–
	Marshall Islands	–	–	–
	Kiribati	–	100	101 (2019)
	Tuvalu	–	–	–
	Palau	–	–	–
	Cook Islands	–	–	–
	Niue	–	–	–
Caribbean/	Haiti	100	139	261
Americas	Dominican Republic	100	123	137
	Jamaica	100	141	171
	Bahamas, The	100	110	116
	St. Kitts and Nevis	100	106	104

Continent	Island Country	2010	2015	2020
	Antigua and Barbuda	100	110	115 (2019)
	St. Vincent and the Grenadines	100	105	111 (2019)
	St. Lucia	100	111	111
	Grenada	100	104	108 (2019)
	Barbados	100	117	134 (2019)
	Trinidad and Tobago	100	134	144
	Dominica	100	103	105 (2019)

Unlike many other economic variables, inflation, as reflected partially by the change in the Consumer Price Index (CPI) in Table 1.8, shows considerable internal variation within the 'developed' and 'developing' world groups. For example, although Japan and Ireland have experienced only 6% inflation from 2010 to 2020, other industrialized countries, including Iceland (33%) and the UK (21%), have seen much higher inflation over the same time period. While many developing countries have seen very high levels of inflation over the past decades, several of them (e.g., St. Kitts and Nevis, Grenada, and Dominica) have seen virtually no inflation over this same period. This is also not regionally specific. For example, Trinidad and Tobago's CPI increased by 44% from 2010 to 2020, while neighbouring Caribbean islands have had much lower levels of inflation. Although research on the causes of inflation on small islands is sparse, some work has been completed on the role that food price increases play in overall inflation. In an analysis of data from 1983–2018 in Fiji, Makun (2021) showed that food price inflation accounted for about 35% of overall inflation and that, other than fluctuation in exchange rates, the most significant factors explaining these increases are domestic, including per capita GDP and money supply. According to Table 1.8, another country experiencing high levels of inflation over this ten-year period is Indonesia, at 54%. As was the case in Fiji, price increases in foodstuffs have consistently led all other components of consumption (Nairobi, 2021). In the case of the Indonesian islands, per capita GDP did not affect the inflation rate. Rather, the World Food Price Index "has a significant positive effect on the Consumer Price Index" (Nairobi, 2021, p. 126). The extent of variation among the islands of the Caribbean may be a function of their degree of exposure to extreme weather events during this period. In an analysis of 15 Caribbean economies, Heinen and colleagues (2019) found that in those places experiencing unexpected flooding or hurricanes, there was a significantly larger impact on consumer prices — mostly on food but, to a lesser extent, also on housing. They also point out that a more open trade policy and better infrastructure appears to mitigate the impact of extreme weather events (Heinen et al., 2019).

It is too early to fully evaluate the impact of the COVID-19 pandemic on inflation. Although, two years into the pandemic, there are signs in many places that inflation has been increasing, especially in food and fuel, it may have had a deflationary impact on CPI in some places in the early days of the pandemic, largely because of a decrease in demand (Works, 2021). For example, Yuniarti et al. (2021) show that in Indonesia, up until July 2020 there was an inverse relationship between the number of COVID-19 cases reported and inflation, wherein the greater the number of cases, the lower the rate of inflation. It may be that more recent data and peer-reviewed literature in next year's *Annual Report on Global Islands* will

TABLE 1.9: Foreign Direct Investment, Net Current, 2020 (in million USD)

Continent	Island Country	2020 FDI Inflows	2020 FDI Outflows	Total FDI
Asia	Japan	10,254	115,703	105,449
	Singapore	90,562	32,375	-58,187
	Indonesia	18,581	4,467	-14,114
	Timor-Leste	72	694	622
	Philippines	6,542	3,525	-3,017
	Sri Lanka	434	15	-419
	Bahrain	1007	-205	-1,212
Europe	Cyprus	-3,647	-5,954	-2,307
	Iceland	-811	-276	535
	United Kingdom	19,724	-33,409	-53,133
	Ireland	33,424	-49,474	-82,898
	Malta	3,917	7,288	3,371
Africa	Cabo Verde	73	-45	-118
	Madagascar	359	102	-257
	Seychelles	122	10	-112
	Mauritius	246	26	-220
	Comoros	9	–	–
	São Tomé and Príncipe	47	1	-46
Oceania	New Zealand	4,216	880	-3,336
	Papua New Guinea	-935	114	1,049
	Solomon Islands	9	3	-6
	Vanuatu	30	2	-28
	Fiji	241	14	-227
	Tonga	-1	0	1
	Samoa	-1	5	6
	Micronesia, Fed. Sts.	–	–	–
	Marshall Islands	7	–	–
	Kiribati	0	0	0
	Tuvalu	0.1	–	–
	Palau	24	–	–
	Cook Islands	7	0	-7
Caribbean/	Haiti	30	–	–
Americas	Dominican Republic	2,644	–	–
	Jamaica	366	4	-362

Continent	Island Country	2020 FDI Inflows	2020 FDI Outflows	Total FDI
	Bahamas, The	897	157	-740
	St. Kitts and Nevis	47	-6	-53
	Antigua and Barbuda	22	10	-12
	St. Vincent and the Grenadines	73	-3	-76
	St. Lucia	15	-39	-54
	Grenada	146	0	-146
	Barbados	262	8	-254
	Trinidad and Tobago	-439	172	611
	Dominica	25	0	-25

allow us to better understand the longer-term implications of the COVID-19 pandemic on inflation. Some research suggests that, despite short term losses for farmers, a greater emphasis on local food production and sharing has already started on some Pacific islands (Ferguson et al., 2022) and in the Caribbean (Blazy et al., 2021). If these trends continue, it would bring greater food security to island residents who have often relied on imported food and food supply chains. As such, it will contribute to meeting the 'zero hunger' Sustainable Development Goal (SDG 2).

As per the discussion in last year's *Annual Report on Global Islands* (Randall, 2021b), inflows of capital or investment to a country are seen as a liability, at least in part because there may be an insufficient amount of investment capital available locally to fund development. On the other hand, high levels of investment out of the country implies that the financial sector is healthy enough to lend money elsewhere, eventually resulting in profits flowing back into those domestic financial institutions. One of the most notable changes when comparing these investment values to those in the previous version of this Report is the overall decrease in inflows and outflows for almost every country. As with the Consumer Price Index, this trend is undoubtedly a function of the COVID-19 pandemic in 2020. Ho and Gan (2021) note that health pandemics in general create adverse shocks to foreign direct investment, including on net inflows to the Asia-Pacific region. A report by the ILO Regional Office for Asia and the Pacific (2021) suggests that new inflows of Foreign Direct Investment (FDI) to Asia and the Pacific region declined by 36% from 2019 to 2020, at least partly because of increased uncertainty and supply chain disruptions during the early stages of the pandemic. As reported last year, much of the foreign investment on small islands is linked to the tourism sector. Post-pandemic development should see a rebound in this sector with a concomitant growth in foreign investment (Scarlett, 2021). There are increasing calls for island governments to be prepared for life after COVID-19 by developing a coordinated Foreign Direct Investment plan for targeted sectors, including in tourism (Becker, 2021).

TABLE 1.10: Rankings and Scores of Globalization Index, 2020

Island Country	Globalization Index				Economic Globalization	Social Globalization	Political Globalization
	Island Country Ranking	World Ranking	Score	Change in World Ranking 2019-2020			
United Kingdom	1	5	89.39	0	81.19	89.18	97.08
Ireland	2	11	85.54	6	87.81	87.30	81.52
Singapore	3	18	83.49	2	93.63	88.70	68.14
Cyprus	4	19	83.06	16	85.77	85.30	78.11
Japan	5	36	78.40	1	67.72	79.96	87.51
Malta	6	38	77.28	1	86.15	84.17	61.51
New Zealand	7	39	77.22	-1	67.44	86.65	77.56
Mauritius	8	48	72.27	2	82.65	78.38	55.78
Iceland	9	50	71.91	3	69.40	86.17	60.16
Bahrain	10	62	68.92	1	81.96	73.85	51.17
Philippines	11	74	66.91	-2	57.22	61.45	81.88
Dominican Republic	12	77	65.31	-4	51.49	73.33	71.11
Trinidad and Tobago	13	81	64.34	-2	62.00	75.29	55.73
Seychelles	14	84	63.76	7	77.62	75.46	39.48
Indonesia	15	87	63.22	5	49.66	52.41	87.60
Barbados	16	88	62.95	5	57.63	78.06	53.14
Jamaica	17	91	62.20	-14	61.40	69.33	55.87
Brunei Darussalam	18	92	62.12	-2	67.11	72.37	48.06
Cuba	19	93	62.12	1	–	48.93	78.49
Sri Lanka	20	101	59.79	1	44.13	58.19	77.00
Antigua and Barbuda	21	105	58.10	-5	61.25	81.96	33.40
Fiji	22	107	57.24	0	52.11	69.80	50.92
St. Lucia	23	110	56.35	-2	59.90	78.61	34.95
Cape Verde	24	111	56.29	1	57.75	66.68	45.66
Bahamas	25	114	55.87	4	48.68	85.02	35.39
Dominica	26	120	54.08	-9	56.80	76.35	32.12
St. Kitts and Nevis	27	130	52.72	9	55.33	81.25	25.64
Grenada	28	133	52.38	-16	56.38	71.32	31.59
Samoa	29	135	52.24	-1	53.75	72.27	33.49
Papua New Guinea	30	137	52.05	3	58.83	41.77	54.48

Island Country	Globalization Index				Economic Globalization	Social Globalization	Political Globalization
	Island Country Ranking	World Ranking	Score	Change in World Ranking 2019-2020			
Maldives	31	140	51.72	9	64.59	68.24	26.07
St. Vincent and the Grenadines	32	151	49.86	-13	50.79	73.03	28.81
Vanuatu	33	154	48.88	-6	64.03	60.94	27.10
Madagascar	34	155	48.85	-3	48.84	37.95	59.75
Tonga	35	162	47.57	-13	51.75	72.76	23.41
Kiribati	36	167	45.77	0	68.58	61.51	13.98
Marshall Islands	37	168	45.75	5	64.22	72.02	16.71
Micronesia, Fed. Sts.	38	169	45.57	-12	70.49	63.44	12.84
Timor-Leste	39	176	44.65	-14	59.68	49.52	27.04
Haiti	40	178	44.51	-9	44.11	41.45	47.95
Palau	41	180	44.35	-12	55.73	77.12	11.14
São Tomé and Príncipe	42	181	44.28	3	44.83	58.70	30.44
Solomon Islands	43	184	42.48	-6	48.02	52.31	29.49
Comoros	44	189	40.42	4	34.96	50.14	35.89

Globalization occurs in many forms. In Table 1.10, the KOF Swiss Economic Institute has once again provided their most recent scoring of jurisdictions for economic, social, and political globalization (Gygli et al., 2019). *Economic globalization* includes variables such as openness to trade, FDI, and international debt. *Social globalization* includes international tourism and students, internet bandwidth, and trade in cultural goods, while *political globalization* includes the presence of international embassies and organizations (including NGOs), and the number of international treaties. It appears that the most globalized islands, using the 2016 data (Randall, 2021b, pp. 34–35), have become even more globalized in 2020. Last year, three islands (the UK at 5th, Ireland at 17th, and Singapore at 20th) ranked in the top 20 in the world in their overall globalization scores. Using the most recent data, four islands are now in this group (the UK at 5th, Ireland at 11th, Singapore at 18th, and Cyprus at 19th). Cyprus is especially noteworthy in that it improved its world ranking by 16 positions in the past year. This may at least in part be a function of the internationalization of the education sector in Cyprus, which has "gradually become a pillar of the country's economy" (Vryonides & Pavlou, 2021).

TABLE 1.11: Global Innovation Index, 2021

Island Country	Global Innovation Index				Innovation Output Sub-Index		Innovation Input Sub-Index		Efficiency Ratio (2021)	
	Island Country Ranking	World Ranking	Score	Change in World Ranking 2020-2021	World Ranking	Score	World Ranking	Score	Island Country Score ranking	
United Kingdom	1	4	59.80	0	6	53.10	7	66.50	1	0.80
Singapore	2	8	57.8	0	13	45.50	1	70.00	9	0.65
Japan	3	13	54.50	3	14	45.20	11	63.80	6	0.71
Iceland	4	17	51.80	4	16	43.90	20	59.70	4	0.74
Ireland	5	19	50.70	-4	19	42.1	22	59.20	6	0.71
New Zealand	6	26	47.5	0	32	34.8	19	60.2	10	0.58
Malta	7	27	47.1	0	22	40.20	29	54.10	4	0.74
Cyprus	8	28	46.70	1	21	40.30	31	53.10	3	0.76
Philippines	9	51	35.30	-1	40	30.60	72	39.90	2	0.77
Mauritius	10	52	35.20	0	58	25.00	48	45.40	12	0.55
Jamaica	11	74	29.6	-2	66	21.60	82	37.70	11	0.57
Bahrain	12	78	28.80	1	99	15.3	63	42.3	16	0.36
Brunei Darussalam	13	82	28.20	-11	115	11.60	51	44.70	17	0.26
Indonesia	14	87	27.1	-2	84	17.90	87	36.20	14	0.49
Dominican Republic	15	93	25.10	-3	98	15.3	93	34.90	15	0.44
Sri Lanka	16	95	25.10	6	85	17.70	103	32.40	12	0.55
Madagascar	17	110	22.50	5	78	18.60	127	26.40	8	0.70

Innovation is a complex concept that is often treated simplistically. The World Intellectual Property Organization (2021), from which the data on Table 1.11 are drawn, defines innovation broadly as "a new or improved product or process … that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)." Their index uses 81 indicators grouped into five input and two output pillars. These pillars include aspects of the political environment, human capital, infrastructure, market and business sophistication, knowledge and technology outputs, and creative outputs (World Intellectual Property Organization, 2021). As suggested from the list, this is not merely a research- and technology-driven indicator. A nation's cultural characteristics are quite important in influencing the level of innovation in a country (Guillén & Deckert, 2021), and the higher education and training environment was the strongest causal

factor associated with innovation (de Miranda et al., 2021). Comparing the island rankings on globalization (Table 1.10) and innovation (Table 1.11) suggests that there is a high degree of complementarity or overlap between these two concepts. The seven top-ranked islands according to their overall Globalization Index also have the highest innovation scores, in roughly the same order. They are also all members of the developed, industrialized world, with high per capita incomes.

In this year's version of the *Annual Report*, migration is addressed more prominently. Table 1.12 (following pages) provides net migration values (i.e., immigration minus emigration) for the island states, using the most recent data. Some nations show massive overall growth or population decline because of migration. For example, Japan and the UK experienced net gains of more than 300,000 residents each over a one-year period, while Sri Lanka lost almost 500,000 people. As is the case with many economic indicators, the absolute numbers of migrants may not adequately reflect the significance of migration for a jurisdiction. The net migration rate (i.e., per 1,000 people) standardizes these values. Therefore, the large net migration to Japan in absolute terms still constitutes less than 1% of the nation's population, while Singapore's and Bahrain's smaller population increases may have had a much greater impact on their respective countries.

WHILE WE TEND TO THINK of migration and mobility primarily in economic terms, to do so in the case of small islands, and especially with respect to Pacific islands, would be a mistake.

The net migration rates from the smaller Pacific islands show a consistent pattern of decline across the region, in some cases representing a large portion of the countries' population (e.g., Cook Islands at -28.6%). Intra-regional mobility among residents of Pacific islands is not new — it has been one of the most important resilience mechanisms that islands have used to cope with extreme events and to strengthen trade and social relationships (Cangiano & Torre, 2020). While we tend to think of migration and mobility primarily in economic terms, to do so in the case of small islands, and especially with respect to Pacific islands, would be a mistake. In Oakes' (2019, p. 480) words, "culture, and in particular how Islanders relate to land and religion can influence decision-making, promoting or hindering mobility." The mobility decisions of islanders are complex and must be understood as part of everyday life, livelihoods, and maintaining social cohesion (Rampengan et al., 2018). Mobility also has to be understood in the context of a variety of scales. The data presented here only captures migrants who cross national borders. In fact, although it is understudied, most island mobility takes place within a country (Weir, 2020). This is especially important on archipelagos that are geographically dispersed across thousands of kilometres.

With the projected consequences of sea level rise, discussions regarding migration have taken on greater urgency. This includes use of the term 'climate refugees' in the

TABLE 1.12: Net Migration and Migration Rates, various years

Continent	Island Country	Year	Net Migration	Net Migration Rate 2021 (per 1,000 population)
Asia	Japan	2017	357,800	0.534
	Singapore	2017	135,142	4.609
	Indonesia	2017	-494,777	-0.374
	Timor-Leste	2017	-26,924	-3.84
	Brunei Darussalam	–	–	2.22
	Philippines	2017	-335,758	-0.609
	Sri Lanka	2017	-489,932	-4.27
	Maldives	2020	56,851	-0.626
	Bahrain	2015	239,000	17.489
Europe	Cyprus	2019	25,000	4.136
	Iceland	2020	2,240	1.112
	United Kingdom	2020	313,000	2.903
	Ireland	2020	28,900	3.164
	Malta	2019	–	1.903
Africa	Cabo Verde	2015	-6,709	-2.302
	Madagascar	2015	-7,500	-0.054
	Seychelles	2015	-1,000	-2.033
	Mauritius	2015	12,079 (2012)	0
	Comoros	2015	-10,000	-2.28
	São Tomé and Príncipe	2015	-8,401	-6.857
Oceania	New Zealand	2021 June	4,711	2.775
	Papua New Guinea	–	-3,999	-0.089
	Solomon Islands	–	-7,998	-2.307
	Vanuatu	2017	600	0.166
	Fiji	2017	-31,008	-5.054
	Tonga	2017	-3,999	-7.537
	Samoa	2017	-14,013	-10.194
	Palau	–	–	0.51
	Kiribati	2017	-3,999	-4.706
	Nauru	–	–	-11.05
	Micronesia, Fed. Sts.	2017	-2,999	-4.719

Continent	Island Country	Year	Net Migration	Net Migration Rate 2021 (per 1,000 population)
	Marshall Islands	–	–	-4.43
	Tuvalu	–	–	-6.46
	Cook Islands	–	–	-28.58
	Niue	–	–	N/A
Caribbean/	Haiti	2017	-175,000	-2.902
Americas	Dominican Republic	2017	-150,000	-2.715
	Jamaica	2017	-56,658	-3.824
	Bahamas, The	2017	-4,999	2.535
	St. Kitts and Nevis	–	–	1.16
	Antigua and Barbuda	2017	0	2.06
	St. Vincent and the Grenadines	2017	-1,000	-6.82
	St. Lucia	2017	0	-1.37
	Grenada	2017	-1,000	-1.777
	Barbados	2017	-397	-0.276
	Trinidad and Tobago	2017	-3,999	-0.573
	Dominica	–	–	-5.31

popular press, and real plans by some island nations (e.g., Kiribati) to purchase land elsewhere in the region for the eventual relocation of their people. Nagabhatla and colleagues (2020, p. 12) describe the attitude of most of the world community to the plight of SIDS to climate change as "myopic and directed towards economic development rather than building resilience." Increasingly, researchers are advocating for a transformative mobility where cultural identity, human rights, adaptation, and human development goals are all part of the mobility discussion (Farbotko et al., 2018).

Trade as a share of GDP is a rough indicator of the openness of an island and its economy. The significance of trade can depend on many factors, including the degree of isolation, the island's economic structure, and the absolute size of its economy. As Table 1.13 shows (following pages), small island states such as Singapore, Malta, and Ireland are highly dependent on trade in both goods and services. At the same time, a large, developed economy like Japan's may engage in a significant amount of trade in absolute terms, but this international exchange still represents a relatively small share of its total GDP. Islands that have not developed a significant export-oriented industrial base relative to domestic production and consumption (e.g., Indonesia, Haiti, and Sri

TABLE 1.13: Trade as Percentge of GDP in 2010, 2020

Continent	Island Country	2010	2020
Asia	Japan	28.6	51.6
	Singapore	369.7	321.0
	Indonesia	46.7	33.0
	Timor Leste	150.9	163.0
	Brunei Darussalam	95.4	110.0
	Philippines	71.4	58.0
	Sri Lanka	46.4	40.0
	Maldives	143.0	117.9
	Bahrain	120.5	142.0 (2019)
Europe	Cyprus	109.1	142.0
	Iceland	94.1	69.0
	United Kingdom	58.6	55.0
	Ireland	189.4	240.0
	Malta	307.4	272.0
Africa	Cabo Verde	94.4	85.0
	Madagascar	57.9	54.0
	Seychelles	201.9	189.0
	Mauritius	113.5	79.0
	Comoros	39.6	42.0 (2019)
	São Tomé and Príncipe	–	–
Oceania	New Zealand	58.2	44.3
	Papua New Guinea	–	–
	Solomon Islands	130.5	64.0
	Vanuatu	99.4	70.0
	Fiji	121.7	72.0
	Tonga	72.7	81.2
	Samoa	80.6	83.0
	Palau	127.1	125.0 (2018)
	Kiribati	91.5	98.0 (2018)
	Nauru	99.0	99.0 (2019)
	Micronesia, Fed. Sts.	–	88.6
	Marshall Islands	–	104.5
	Tuvalu	–	–
	Cook Islands	–	–

Continent	Island Country	2010	2020
	Niue	–	–
Caribbean/	Haiti	–	41.0
Americas	Dominican Republic	56.0	44.0
	Jamaica	80.9	90.0
	Bahamas, The	78.7	49.9
	St. Kitts and Nevis	76.2	–
	Antigua and Barbuda	104.7	89.0
	St. Vincent and the Grenadines	84.0	85.0 (2012)
	St. Lucia	99.8	–
	Grenada	73.1	77.0
	Barbados	95.9	84.0 (2019)
	Trinidad and Tobago	85.8	–
	Dominica	88.1	110.0

Lanka) would have a low share of trade to GDP. If the 'import' of tourists (e.g., Maldives) or the export of raw materials (e.g., fish products in the Seychelles) is important, trade may also be a more important component of their economies. There is no clear pattern in the change in the importance of trade to island economies between 2010 and 2020. In places such as Cyprus and Ireland, trade has become more important, while other islands (e.g., Mauritius, Solomon Islands) have become more insular. Extreme events, including hurricanes and rapid declines in the number of tourists, may also produce significant year-to-year fluctuations in trade on some of the smaller islands.

Although it may not yet be apparent in the 2020 data presented here, international trade has been curtailed by the COVID-19 pandemic. Global trade in merchandise fell by 11% from April to September of 2020 compared to the same period the previous year, while trade in commercial services was down by 20% (Me & Fu, 2021). It is also clear that, at least in the first year of the pandemic, local food production practices and food sharing on many islands increased to replace supply line disruptions. Based on more than 600 household interviews on six Pacific islands, Ferguson et al. (2022) found that those countries that were more reliant on food imports were twice as likely to report food insecurity than those that relied on more local sources of food. At the other extreme, many Caribbean islands are so enmeshed in the global trading system — as "sites of extraction or leisure" (Hinds, 2022, p. 45) — that they find themselves sinking deeper into financial crises. Despite the obvious tragic consequences of the COVID-19 pandemic, findings such as these suggest that opportunities exist for island governments to rethink their economic, trade, and social policies so that they are more resilient to future extreme events.

SECTION 2: SUBNATIONAL ISLAND JURISDICTIONS

The Islands Economic Cooperation Forum has long recognized the importance of subnational island jurisdictions (SNIJs), and this is reflected in the presence of these islands in these Annual Reports. Over the past five years, the research and literature on these semi-autonomous or non-sovereign places has expanded significantly (see, for example, Baldacchino, 2020; Ferdinand et al., 2020; Randall, 2021a; Randall & Boersma, 2020; Rojer, 2021). Although there are hundreds, if not thousands, of islands that could be referred to as 'subnational', it is exceedingly difficult to access accurate, recent, comparative data on more than a handful of these islands. This is partly a function of their relative invisibility in the international arena. Development statistics for these semi-autonomous states, territories, overseas dependencies, etc., are subsumed within national-level reporting systems. The fact that there are only six tables in this chapter devoted to SNIJs, compared to 13 for island states, is a reflection of this challenge.

TABLE 1.14: Most Recent Population Characteristics (Subnational Islands)

	Year	Population	Population Growth Rate (%) over Previous Year	Year	Population	Percent Change (%) in Population Between Two Dates Indicated
Bali, Indonesia	2020	4,414,400	1.17	2014	4,225,000	4.5
Gotland, Sweden	2020	60,124	0.93	2016	58,003	3.7
Greenland, Denmark	2020	56,225	0.16	2016	56,190	0.1
Hainan Island, China	2020	10,123,400	1.72	2016	9,171,300	10.4
Hawai'i, USA	2020	1,455,271	-0.33	2016	1,428,557	1.9
Java, Indonesia	2020	147,795,436	0.76 (2019)	2015	141,300,000	4.6
Jeju, South Korea	2020	695,519	0.07	2016	661,190	4.9
Luzon, Philippines	2021	64,260,312	1.63	2015	53,336,134	20.4
Okinawa, Japan	2021	1,435,630	0.51	2015	1,434,138	0.1
Phuket, Thailand	2021	437,963	1.33	2017	4,119,840	6.3
Prince Edward Island, Canada	2020	163,418	1.90	2016	148,649	9.9
Taiwan, China	2021	23,876,506	0.16	2016	23,556,706	1.4
Tasmania, Australia	2021	542,000	0.60	2016	517,588	4.7

Prince Edward Island has experienced 9% growth in population in the past five years, a response to an aggressive international strategy targeting economic migrants who bring skills and investment funds, but also including refugees and family members of recent immigrants. IRSA PEI photo

Table 1.14, at left, shows that population growth in the 13 subnational islands that are part of this project varies along the same developed–developing divide as is the case for the island states, with relatively high growth in the developing islands and population stagnation in the developed islands. One exception to this is Canada's Prince Edward Island (PEI), which experienced 9% growth in the past five years. PEI's population growth, currently the strongest among the Canadian provinces, can be seen as a response to an aggressive international immigration strategy, primarily targeting economic migrants who bring skills and investment funds, but also including refugees and family members of recent immigrants (PEI Statistics Bureau, 2021). Although the province has been quite successful in attracting international immigrants, it still has challenges retaining immigrants once they have satisfied provincial residency requirements. It is not uncommon for international immigrants to move elsewhere in Canada, particularly to larger urban centres where there may be better employment and educational opportunities and access to similar ethnic communities (Gorman-Asal, 2020).

TABLE 1.15: **Birth and Death Rates, various years (Subnational Islands)**

	Year	Crude Birth X / 1,000 people	Crude Death X / 1,000 people
Bali, Indonesia	2017	18.42	7.17 (2015)
Gotland, Sweden	2018	11.00	9.00
Greenland, Denmark	2019	15.10	9.80
Hainan Island, China	2019	12.87	6.11
Hawai'i, USA	2019	11.80	5.73
Java, Indonesia	2020	17.40	6.60
Jeju, South Korea	2013	9.10	5.9 (2019)
Luzon, Philippines	2018	16.30	5.5 (2017)
Okinawa, Japan	2019	–	12.50
Phuket, Thailand	2016	17.38	5.54
Prince Edward Island, Canada	2020	8.01	8.57
Taiwan, China	2021	8.40	7.89
Tasmania, Australia	2019	10.92	8.71

As was the case in last year's *Annual Report*, Prince Edward Island is also the only SNIJ in this group where the death rate exceeds the birth rate (see Table 1.15). Even on those islands with very low overall population growth, such as Phuket (Thailand), Greenland (Denmark), and Hainan (China), natural population growth (i.e., where the birth rate exceeds the death rate) is positive.

Any discussion of the factors that influence population change, either from migration or natural change, also raises the issue of control over development and policy. This is especially important for semi-autonomous islands, where there is often a division of responsibilities between the island government and the central metropole government for developing policy and providing services. For example, Korea's Jeju Island has long experienced a tension between the role of the island government and the central Korean government. A long history of central government control has led the island to be developed and marketed internationally as a tourist resort. Despite now being referred to as a "free international city" (Kim, 2020, p. 170), Jeju has lost much of its governance independence to the national government and external investors.

TABLE 1.16: Life Expectancy (Subnational Islands)

	Year	Total Life Expectancy	2017 Total Life Expectancy	Change in Life Expectancy (%) Between the Two Dates Indicated
Bali, Indonesia	2019	75.5	–	–
Gotland, Sweden	2019	82.5	81.5	1.2
Greenland, Denmark	2021	73.8	72.7	1.4
Hainan Island, China	2019	77.1	76.6	0.6
Hawai'i, USA	2019	81.4	81.4	0
Java, Indonesia	2019	72.3	–	–
Jeju, South Korea	2017	82.5	–	–
Luzon, Philippines	2019	71.6	72.1	-0.7
Okinawa, Japan	2015	83.9	83.2	-0.8
Phuket, Thailand	2019	77	75	2.6
Prince Edward Island, Canada	2019	81.6	80.9	0.9
Taiwan, China	2021	81	80.3	0.9
Tasmania, Australia	2019	81.6	80.7	1.1

Globally, average life expectancies improved during most of the 20th century (Riley, 2005). Table 1.16 shows that this trend applied to most of the subnational islands listed here in the latter part of the 2010s. However, even prior to the COVID-19 pandemic, average life expectancies globally were levelling off. For example, from 2014 to 2016, life expectancies for both genders declined in 11 of 18 high-income countries, and this continued in 2017 in the USA and the UK (Ho & Hendi, 2018). Comparing actual to expected life expectancies in 2020 (i.e., the first year of the COVID-19 pandemic), Islam et al. (2021) found that 31 of 37 upper-middle- and high-income countries had lower life expectancies. Similar results (27 of 29 countries) were documented by Aburto and colleagues (2021, p. 1), who went on to say that the magnitude of mortality increases had not been seen "since World War II in Western Europe or the breakup of the Soviet Union in Eastern Europe."

Most COVID-19 public health outcomes data are at the national and international scale. As noted earlier, this often masks the variation at the subnational level. However, recent research on the impacts of the first wave of the COVID-19 pandemic is emerging. For example, some regions in Spain saw life expectancy decrease by more than two years while other regions had almost no change (Trias-Llimós et al., 2020). Similarly, in Brazil, the more isolated state of Amazonas saw a decline in life expectancy of almost 3.5 years, while other Brazilian states saw little change (Castro, 2021). A clearer picture of the public health impact of the COVID-19 pandemic on the SNIJs represented here will emerge next year.

TABLE 1.17: **Urban Share of Population (Subnational Islands)**

	Year	Urban %	Urban % (2010)	Change in Urban Share of Population (%) Between Two Dates Indicated
Bali, Indonesia	2020	70.2	60.2	16.6
Gotland, Sweden	2020	63.1	–	–
Greenland, Denmark	2020	87.3	84.4	3.4
Hainan Island, China	2020	61.0	49.2	24.0
Hawai'i, USA	2014	91.9	91.9	0.0
Java, Indonesia	2020	57.0	49.9	14.2
Jeju, South Korea	2020	100.0	100.0	0.0
Luzon, Philippines	2020	47.4	45.3	4.6
Okinawa, Japan	2020	100.0	–	–
Phuket, Thailand	2020	51.4	48.4	6.2
Prince Edward Island, Canada	2016	40.0	44.8	-10.7
Taiwan, China	2020	78.9	74.4	6.0
Tasmania, Australia	2016	47.0	–	–

The change in the rate of urbanization varies significantly across these semi-autonomous islands, as seen in Table 1.17. In those places that still had a substantial rural population in 2010 (e.g., Hainan, Java), the rate of urbanization was greater than in those smaller islands that have already experienced this urban transition (e.g., Hawai'i, Jeju). For the former group, some of the challenges associated with rapid urbanization for both city and country populations, including gaps in household income and provision of services, will continue until some stability is achieved (Chen, 2018). Those islands that are already highly urbanized face their own development problems. For example, the pressures of urbanization and tourism on Oahu and several other Hawaiian islands has led to greater environmental disturbance, social conflict, and economic inequality (Aliasut, 2019). Assumptions about the development benefits and costs of urbanization are increasingly being questioned. This is especially the case on small islands with limited resources to accommodate urban growth. Cocklin and Keen (2000) note that the fragile biophysical environments, limited land resources, and shortage of basic resources on Pacific islands make them especially vulnerable to the problems associated with rapid urbanization.

TABLE 1.18: **Labour Force Characteristics, various years (Subnational Islands)**

	Year	Labour Force	Unemployment Rate %
Bali, Indonesia	2018	3,243,320	5.6
Gotland, Sweden	2019	28,952	7.1
Greenland, Denmark	2015	26,840	9.1
Hainan Island, China	2020	5,410,000	2.3 (2019)
Hawai'i, USA	2021	605,900	6.3
Java, Indonesia	2018	3,106,118	4.0
Jeju, South Korea	2020	458,680	2.1 (2019)
Luzon, Philippines	2021	41,100,000	8.8
Okinawa, Japan	2020	629,394 (2015)	3.3 (2020)
Phuket, Thailand	2013	167,883	2.3
Prince Edward Island, Canada	2021	84,600	10.4
Taiwan, China	2021	11,902,000	3.8
Tasmania, Australia	2021	275,000	5.1

Comparing the labour forces of the 13 subnational islands listed in Table 1.18 shows the heterogeneity of islands once again. For example, Luzon, Philippines, is the fourth most populated island in the world, with a labour force that is more than 1,500 times that of Greenland. Although other characteristics, such as the unemployment rate, may suggest they are comparable, the nature of economic and social life on these two islands are considerably different. Everyday economic life on the cold-water island of Greenland is shaped by fisheries, hunting, and income transfers from Denmark (Arnaut, 2022; Rasmussen, 2000). Meanwhile, the large, tropical island of Luzon can hardly be considered a SNIJ in the conventional definition of the term. Although it is still largely rural in population and economic structure, it includes the metropolis of Manila, which produces approximately 55% of the country's GDP (Balisacan et al., 2009). From the

TABLE 1.19: **Gross Domestic Product, various years (Subnational Islands)**

	Year	Gross Domestic Product (GDP) in USD	GDP per capita in USD
Bali, Indonesia	2019	5,839,000,000	2,650
Gotland, Sweden	2016	2,371,259,730	40,853
Greenland, Denmark	2018	3,051,626,390	54,471
Hainan Island, China	2020	86,545,673,335	8,624
Hawai'i, USA	2020	75,860,000,000	58,540
Java, Indonesia	2016	9,360,000,000	3,620
Jeju, South Korea	2016	19,335,000,000	30,792 (2019)
Luzon, Philippines	–	–	–
Okinawa, Japan	2016	35,181,177,556	18,498
Phuket, Thailand	2016	576,818,694	1,076
Prince Edward Island, Canada	2020	5,923,364,234	36,711
Taiwan, China	2019	668,500,000,000	28,306
Tasmania, Australia	2020	32,840,000,000	61,011

perspective of per capita GDP (Table 1.19), the 'wealthiest' island is Tasmania, Australia. While the value of average production per person among the other developed SNIJs on this list have remained similar to those reported in last year's *Annual Report*, it has continued to grow in Tasmania. Much of this growth can be attributed to the agriculture, forestry, and fishing sectors (Tasmanian Government, 2021). As with many of the other statistics provided in this chapter, we may not be seeing a current picture of the economy and development of islands in the age of COVID-19. For example, despite apparent growth in GDP per capita in Tasmania, the state lost more jobs than any other Australian state or territory (Minshull & Browne, 2020).

Despite the tragic public health, economic, and social consequences of the COVID-19 pandemic, we look forward to seeing how the initial impacts reported here evolve over the course of the next year.

SOURCES AND NOTES FOR TABLES

The values provided in these cells are accurate as of the time they were submitted for publication. The specific values in the Tables may change as data are updated and/or as currencies fluctuate.

Table 1.1:
Population and Population Growth Rates from the CIA World Factbook (http://www.cia.gov/library/publications/the-world-factbook); Population Density from the World Bank (http://data.worldbank.org/indicator/en.PoP.dnst).

Table 1.2:
From the CIA World Factbook, various links (http://www.cia.gov/library/publications/the-world-factbook).
Niue data is from Niue Vital Statistics 2019
(https://niue.prism.spc.int/social/vital-statistics/niue-vital-statistics-2019).

Table 1.3:
2021 urbanization rates are from the CIA World Factbook (http://www.cia.gov/library/publications/the-world-factbook);
2020 urbanization rate data are from the World Bank (https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS).

Table 1.4:
From the World Bank (http://data.worldbank.org).

Table 1.5:
From the World Bank (http://data.worldbank.org).

Table 1.6:
Unemployment rates are from the World Bank (https://data.worldbank.org/indicator/SL.UEM.TOTL.NE.ZS).
Note: Values listed may not necessarily correspond to the data from these sources because the latter are updated when new information is available.
Cook Islands: Ministry of Finance and Economic Management Government of the Cook Islands (http://www.mfem.gov.ck/statistics/economic-statistics/labour-market-indicators).
Cuba: Trading Economics (https://tradingeconomics.com/cuba/unemployment-rate).
St. Kitts and Nevis: United Nations
(https://data.un.org/CountryProfile.aspx/_Images/CountryProfile.aspx?crName=Saint%20Kitts%20and%20Nevis).

Table 1.7:
From the United Nations Development Program (UNDP; http://www.hdr.undp.org/en/content/latest-human-development-index-ranking).

Table 1.8:
From the World Bank (https://data.worldbank.org/indicator/FP.CPI.TOTL).

Table 1.9:
From the United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 2021*
(https://unctad.org/webflyer/world-investment-report-2021).

Table 1.10:
From the KOF Swiss Economic Institute (http://globalization.kof.ethz.ch).

Table 1.11:
Global Innovation Index, Innovation Input, and Output Sub-Index Efficiency Ratios are from
http://www.globalinnovationindex.org/analysis-indicator. The Efficiency Ratio (2021) is calculated by dividing the Output Sub-Index value by the Input Sub-Index value.

Table 1.12:
Net Migration data are mainly from the World Bank Net Migration Indicator (https://data.worldbank.org/indicator/SM.POP.NETM).
United Kingdom net migration is from the UK Office for National Statistics (https://www.statice.is/statistics/population/migration/external-migration).
Net Migration Rates 2021 (per 1,000 population) are from various sources, as follows:

- Japan: OECD iLibrary (https://www.oecd-ilibrary.org/sites/b140958b-en/index.html?itemId=/content/component/b140958ben).

continued on following page

- Singapore and Indonesia: Statista (https://www.statista.com/statistics/698035/singapore-number-of-immigrants).
- Timor-Leste, Brunei Darussalam, Bahrain, United Kingdom, Cabo Verde, Madagascar, Seychelles, Palau, Nauru, Tuvalu, Cook Islands, St. Kitts and Nevis, and Dominica: CIA World Factbook (https://www.cia.gov/the-world-factbook).
- Philippines, Sri Lanka, Cyprus, Mauritius, Comoros, Papua New Guinea, Solomon Islands, and The Bahamas: Macrotrends (https://www.macrotrends.net/countries/PHL/philippines/net-migration).
- Maldives: Global Detention Project (https://www.globaldetentionproject.org/countries/asia-pacific/maldives).
- Iceland: Statistics Iceland (https://www.statice.is/statistics/population/migration/external-migration).
- Ireland: Central Statistics Office (https://www.cso.ie/en/releasesandpublications/er/pme/populationandmigrationestimate sapril2020).
- Malta: Euro Stat (https://ec.europa.eu/eurostat/databrowser/view/TPS00176__custom_1738861/default/table?lang=en).
- São Tomé and Príncipe: Knoema (https://knoema.com/atlas/Sao-Tome-and-Principe/topics/Demographics/Population/Net-migration-rate).
- New Zealand: Stats NZ (https://www.stats.govt.nz/information-releases/international-migration-june-2021).
- Vanuatu, Fiji, Tonga, Samoa, Kiribati, Federated States of Micronesia, Haiti, Dominican Republic, Jamaica, Antigua and Barbuda, St. Vincent and the Grenadines, St. Lucia, Grenada, Barbados, and Trinidad and Tobago: The World Bank Net Migration Indicator (https://data.worldbank.org/indicator/SM.POP.NETM).

Table 1.13:
Most data are from the World Bank Trade (% of GDP) Indicator (https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS), with the following exceptions:
Antigua and Barbuda, St. Vincent and the Grenadines, Barbados, and Dominica: Macrotrends (https://www.macrotrends.net/countries/ATG).
Grenada: Trading Economics (https://tradingeconomics.com/grenada/trade-percent-of-gdp-wb-data.html).

Table 1.14:
Jeju (South Korea) population growth rates: World Population Review (https://worldpopulationreview.com/world-cities/jeju-population).
Luzon (Philippines) population growth rate: Commission on Population and Development (https://rpo3.popcom.gov.ph/popcom-iii-central-luzon-population-to-hit-12-6-million-by-2021).
Phuket (Thailand) population growth rate: World Population Review (https://worldpopulationreview.com/world-cities/phuket-population).
Prince Edward Island (Canada) population growth rate: PEI Population Report Quarterly (https://www.princeedwardisland.ca/en/information/finance/pei-population-report-quarterly).
Taiwan (China) population growth rate: Macrotrends (https://www.macrotrends.net/countries/TWN/taiwan/population-growth-rate).
Hainan (China) population from the Hainan Provincial Bureau of Statistics (http://stats.hainan.gov.cn/tjj/tjsu/ndsj/)

Table 1.15:
Greenland (Denmark): Statista (https://www.statista.com/statistics/976909/crude-birth-rate-in-greenland).
Hainan Island (China): Knoema (https://knoema.com/atlas/China/Hainan/Birth-Rate).
Hawai'i (USA): Hawai'i Health (http://ibis.hhdw.org/ibisph-view/query/result/birth/BirthCntyPop/BirthRate.html).
Java (Indonesia) birth rate and death rate data uses national level data from Knoema (https://knoema.com/atlas/Indonesia/Death-rate).
Jeju (South Korea) death rate is from Data Korea (http://datakorea.datastore.or.kr/en/profile/geo/jeju/#category_physician_status_and_medical_institution).
Luzon (Philippines): Philippines Statistics Authority (https://psa.gov.ph/vital-statistics/id/138794).
Okinawa (Japan): Statista (https://www.statista.com/statistics/1013182/japan-number-deaths-okinawa).
Prince Edward Island (Canada) data is from the Government of Prince Edward Island (https://www.princeedwardisland.ca/sites/default/files/publications/pt_pop_rep_0.pdf & https://www.princeedwardisland.ca/sites/default/files/publications/women_in_pei_a_statistical_review_2020.pdf).
Taiwan (China): Macrotrends (https://www.macrotrends.net/countries/TWN/taiwan/birth-rate).
Tasmania (Australia): Australian Bureau of Statistics (https://www.abs.gov.au/statistics/people/population/births-australia/latest-release).

Table 1.16:
Gotland (Sweden) data uses national data from Statista (https://www.statista.com/statistics/523689/sweden-average-life-expectancy-at-birth-by-gender).
Greenland (Denmark): Index Mundi (https://www.indexmundi.com/greenland/life_expectancy_at_birth.html).
Hainan Island (China) data uses national data from Statista (https://www.statista.com/statistics/263761/life-expectancy-of-women-in-china).

Hawai'i (USA) data uses national data from Statista (https://www.statista.com/statistics/263736/life-expectancy-of-women-in-the-united-states).
Jeju (South Korea) data uses national data from the Institute for Health Metrics and Evaluation (http://www.healthdata.org/south-korea).
Luzon (Philippines) data uses national data from the World Bank (https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=PH).

Table 1.17:
Greenland (Denmark): Statista (https://www.statista.com/statistics/455831/urbanization-in-greenland).
Data for Hainan (China), Java (Indonesia), Phuket (Thailand), and Luzon (Philippines) uses national data from the World Bank (https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS).
Okinawa (Japan): World Population Review (https://worldpopulationreview.com/world-cities/okinawa-population).
Prince Edward Island (Canada) data is from Statista (https://www.statista.com/statistics/608664/population-distribution-of-prince-edward-island-by-rural-urban-type) and the Government of Prince Edward Island (https://www.princeedwardisland.ca/sites/default/files/publications/pei_pop_dem_l_f_stats.pdf).
Taiwan (China): Worldometer (https://www.worldometers.info/world-population/taiwan-population).

Table 1.18
Bali (Indonesia): CEIC (https://www.ceicdata.com/en/indonesia/employment-by-province/employment-bali).
Gotland (Sweden): European Commission EURES
(https://ec.europa.eu/eures/printLMIText.jsp?lmiLang=en&regionId=SE0&catId=2606).
Hainan (China): CEIC (https://www.ceicdata.com/en/china/employment-region/employment-hainan).
Hawai'i (USA): US Bureau of Labor Statistics (https://www.bls.gov/eag/eag.hi.htm).
Java (Indonesia): CEIC (https://www.ceicdata.com/en/indonesia/unemployment-rate-by-province/unemployment-rate-java-east).
Jeju (South Korea): Korea Data Agency (http://datakorea.datastore.or.kr/en/profile/geo/jeju).
Luzon (Philippines): Philippine Statistics Authority (http://rsso03.psa.gov.ph/article/april-2021-central-luzon%E2%80%99s-employment-situation situation).
Okinawa (Japan): Statistics Japan (https://stats-japan.com/t/kiji/11187).
Prince Edward Island (Canada): Labour Force Survey Annual Report 2020
(https://www.princeedwardisland.ca/sites/default/files/publications/fin_statcan_labo_1.pdf).
Taiwan (China): Trading Economics (https://tradingeconomics.com/taiwan/labour-costs).

Table 1.19
Bali (Indonesia): Pemerintah Provinsi Bali (https://baliprov.go.id).
Hainan (China): GDP is from the Hainan Provincial Bureau of Statistics
(http://stats.hainan.gov.cn/tjj/tjgb/fzgb/n_81550/202102/t20210220_2936215.html); GDP per capita is from CEIC
(https://www.ceicdata.com/zh-hans/china/gross-domestic-product-per-capita/gross-domestic-product-per-capita-hainan).
Hawai'i (USA): Statista (https://www.statista.com/statistics/187859/gdp-of-the-us-federal-state-of-hawaii-since-1997).
Java (Indonesia): Global Business Guide (http://www.gbgindonesia.com/en/main/useful_resources/information_by_province/information_by_province-java.php).
Jeju (South Korea): Korean Statistical Information Service
(https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1C86&conn_path=I2&language=en).
Okinawa (Japan): Okinawa Prefecture Government
(https://www.pref.okinawa.jp/site/shoko/kigyoritchi/seibi/documents/gaiyou.pdf).
Phuket (Thailand): CEIC (https://www.ceicdata.com/en/thailand/regional-gdp-sna93-southern-current-price-rev-4/gdp-phuket-gross-domestic-product-gdp).
Prince Edward Island (Canada): Government of Prince Edward Island (https://www.princeedwardisland.ca/en/information/finance/gross-domestic-product-gdp-by-income-and-expenditure).
Taiwan (China): GDP is from Trading Economics (https://tradingeconomics.com/taiwan/gdp); GDP per capita is from Knoema (https://knoema.com/atlas/Taiwan-Province-of-China/GDP-per-capita).
Tasmania (Australia): Knoema (https://knoema.com/atlas/Australia/Tasmania/GDP-per-Capita).

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