The Cayman Islands' System of National Accounts Report 2018

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THE ECONOMICS AND STATISTICS OFFICE

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ABBREVIATIONS AND ACRONYMS

AAGR	Average Annual Growth Rate
ANAS	Annual National Accounts Survey
BOP	Balance of Payments
BR	Business Register
CARTAC	Caribbean Regional Technical Assistance Centre
CFC	Consumption of Fixed Capital
CIMA	Cayman Islands Monetary Authority
CISNA	Cayman Islands System of National Accounts
CI$	Cayman Islands Dollars
COE	Compensation of Employees
CPI	Consumer Price Index
ECLAC	Economic Commission for Latin America and the Caribbean
ESO	Economics and Statistics Office
ESS	External Sector Statistics
FCE	Final Consumption Expenditure
FISIM	Financial Intermediation Services Indirectly Measured
GCF	Gross Capital Formation
GDP	Gross Domestic Product
GDPE	Gross Domestic Product by Expenditure
GDPI	Gross Domestic Product by Income
GDPP	Gross Domestic Product by Production
GFCE	Government Final Consumption Expenditure
GO	Gross Output
GVA	Gross Value Added
HBS	Household Budget Survey
HFCE	Household Final Consumption Expenditure
IC	Intermediate Consumption
IPI	Implicit Price Index
ISIC	International Standard Industrial Classification of Economic Activity
LFS	Labour Force Survey
NPISH	Non-Profit Institutions Serving Households
PPI	Producer Price Index
PSPB	Public Sector Pension Board
ROW	Rest of the World
SITC	Standard International Trade Classification
SNA	System of National Accounts
SUT	Supply & Use Tables
TTM	Trade & Transport Margin
WIP	Work in Progress

1. EXECUTIVE SUMMARY

1.1 The Cayman Islands' System of National Accounts Report 2018 presents the gross domestic product (GDP) estimates for the period 2014–2018. The estimates were calculated using both the production and income approaches for the entire data series, and by the expenditure approach for 2015 onwards.

1.2 In 2018, the nominal (current) purchasers' price GDP for the Cayman Islands moved to CI$4,597.6 million, resulting in an estimated per capita nominal GDP of CI$71,369.4.

1.3 Real GDP at purchasers' price (i.e. GDP at constant 2015 prices or GDP adjusted for inflation) stood at CI$4,348.6 million in 2018. The corresponding per capita real GDP for 2018 is estimated at CI$67,503.6.

1.4 The expansion of the Cayman Islands' economy continued in 2018 as the economy recorded another year of growth. The economy grew by 4.1 percent in 2018 when compared to 2017. This represents the eighth consecutive year of economic expansion adding to the 1.2 percent growth recorded in 2011 and 2012, 1.3 percent in 2013, 2.7 percent in 2014, 2.8 percent in 2015, 3.2 percent in 2016, and 3.1 percent in 2017. The expansion in 2018 was broad-based with all industries posting growth.

1.5 The top six performing industries in terms of the rate of growth in constant price GDP in 2018, are: (*i*) hotel & restaurant services (8.2%); *(ii)* construction (7.8%); (*iii*) manufacturing (6.7%); *(iv)* human health & social work (6.3%); (*v*) wholesale & retail trade (4.7%); and (*vi*) professional, scientific & technical activities, which consists mainly of legal and accounting services (4.4%). The financial & insurance services industry grew by 1.8 percent in 2018, following on growth of 2.5 percent and 1.5 percent in 2017 and 2016, respectively.

1.6 The Average Annual Growth Rate (AAGR) over the five-year period (2014-2018) showed average annual constant price GDP growth of 3.2 percent for the total economy. All industries posted positive average growth rate for the review period with 9 of the 18 industries registering growth rates higher than the economy average (3.2%). The lowest average expansion (0.7%) was posted by water supply, sewerage & waste management services. This was due to a reclassification of government garbage collection activity, which was moved from this industry to the public administration industry from 2015 onward. The highest average expansion over the period was recorded by the human health & social work industry, which posted an average growth of 5.5 percent. Rounding out the top ten highest average

growth rates are construction (4.9%); manufacturing (4.5%); other services (4.1%); professional, scientific & technical activities (4.1%); hotel & restaurants (3.7%); administrative & support services activities (3.6%); wholesale & retail trade (3.5%); agriculture & fishing (3.3%); and education services (2.8%). Financial & insurance services expanded by an average rate of 1.8 percent over the period.

1.7 Financial & insurance services accounted for 30.8 percent of constant price GDP in 2018. This represents a continued decline in the contribution of the industry from the 32.4 percent recorded for 2014. The other industries making up the top six contributors in 2018 include: (*i*) professional, scientific & technical activities, which comprises primarily of legal and accounting services (13.1%); (*ii*) real estate activities (8.5%); (*iii*) wholesale & retail trade (6.3%); (*iv*) hotels & restaurants (5.3%); and (*v*) public administration & defense, which consists primarily of central government operations (5.1%). There was a single change in the relative ranking of the industries within the Cayman Islands' economy in 2018 when compared to 2017. Hotel & restaurant services moved up one place to 5th, replacing public administration, which dropped to number 6.

1.8 All income components of GDP recorded growth in 2018 when compared to the 2017. The largest increase was posted by operating surplus/mixed income, which increased by 10.8 percent to CI$1,637.4 million. This was followed by taxes (less subsidies) on production and imports, which increased by 9.9 percent to CI$658.1 million. Compensation of employees increased by 4.2 percent to CI$2,056.5 million, while consumption of fixed capital increased marginally by 0.9 percent to CI$245.6 million.

1.9 Total compensation of employees as a share of GDP dipped below 45 percent in 2018 for the first time since 2007, declining to 44.7 percent compared to 46.0 percent in 2017. Total operating surplus/mixed income increased to 35.6 percent of GDP in 2018, up from the 34.4 percent reached in 2017. There was a decline in the share of consumption of fixed capital, which moved to 5.3 percent in 2018 from 5.7 percent in 2017. There was a slight increase in the share of net taxes on production and imports, moving to 14.3 percent in 2018 from 13.9 percent in 2017.

1.10 The expenditure of resident households on goods and services, as measured by nominal Household Final Consumption expenditure (HFCE) increased by 4.1 percent to CI$2,336.5 million in 2018. The final consumption expenditure of government and non-profit institutions serving households rose by 5.6 and 7.4 percent in 2018 to reach CI$435.9 million and CI$34.7 million, respectively. Investment in capital goods (as measured by nominal Gross Fixed Capital Formation-GFCF) amounted to CI$726.9 million in 2018, a growth of 20.0 percent.

Total exports of goods and services reached CI$3,062.3 million after growing 5.2 percent in 2018. The 9.0 percent growth in imports of goods and services saw that total reaching CI$2,037.7 million in 2018. With the growth in imports outpacing the growth in exports, the value of net exports (exports less imports) declined to CI$1,024.6 million in 2018 from CI$1,041.3 million in 2017. This represents a year on year decline of 1.6 percent.

1.11 Final consumption expenditure accounted for 61.6 percent of total nominal GDPE in 2018, a slight decline from the 61.9 percent in 2017. The second-largest share was posted by net exports (22.5%), which declined in share from the 23.9 percent posted in 2017. Gross fixed capital formation experienced the most significant increase in share of GDP in 2018, reaching 15.9 percent up from 13.9 percent in 2017. The share of change in inventories declined year on year, registering 0.03 percent in 2018 when compared to 0.3 percent in 2017.

2. INTRODUCTION

2.1 Importance of the SNA

The SNA is a system of accounts that is used globally to measure the economic performance of countries and jurisdictions using accepted international standards issued by the United Nations and the International Monetary Fund (among others). In the context of the Cayman Islands, its main uses are to:

a. Comply with the Public Management & Finance Law (2013 Revision), which requires the reporting of gross domestic product in the Strategic Policy Statement. Governments, in general, use the SNA statistics as key indicators for evaluating the potential and actual macro-economic impact and sustainability of fiscal policies.

b. Provide data that can assist government departments, local businesses and non-government organizations in preparing business plans or determining the level of assistance to businesses. These statistics help determine the *"buying power"* or the size of the local market, the potential growth of the market, and alternative sectors for investment.

c. Comply with data requirements of foreign investors and creditors. For example, data from the SNA are required for inclusion in official borrowing documents (i.e., Offering Memorandum or Private Placement Memorandum). These statistics are necessary in assessing the worthiness of the jurisdiction as an investment site and/or the worthiness of its entities as borrowers.

d. Comply with data requirements of international credit rating agencies, which provide credit ratings for the Cayman Islands Government and private entities who borrow from the global financial market.

e. Provide necessary data for the conduct of economic impact assessments of hurricanes and other disasters, which are required by funding and other donor agencies. As pointed out by previous teams from the Economics Commission for Latin America and the Caribbean (ECLAC), the GDP statistics by sector for Cayman are necessary in calculating the economic impact of disasters in each sector and therefore, the approximate amount of resources required for the reconstruction of these sectors.

f. Provide data necessary for government departments and business associations to monitor the economic performance and contribution of their respective sectors.

2.2 Key data sources

The SNA estimates contained in this report are based on the Annual National Accounts Survey (ANAS) conducted among all relevant establishments included in the ESO Business Register. The survey was conducted during the period April to June 2019. It should be noted that all information provided via the survey is treated with the strictest of confidence as per Sections 8 and 18 of the Statistics Law (2016 Revision). Information from the survey is supplemented by secondary data provided by various government ministries, departments and statutory authorities including the Cayman Islands Monetary Authority (CIMA), Department of Agriculture, Public Transport Unit, Health Services Authority and other informal interviews with industry sources.

As in any survey, the response rate to the ANAS is mainly a function of the appreciation and understanding of the respondents on how the data will be used. It is hoped that this report will be an instrument in demonstrating the potential uses of the SNA to the business sector, business associations and those providing services to the businesses in the Cayman Islands.

2.3 Valuation of Gross Domestic Product (GDP)

Some tables are presented at both basic and purchasers' (i.e. market) price. The main difference between basic and purchasers' price is the taxes less subsidies (net taxes) on products. Taxes on products are taxes on goods and services that become payable when the goods are produced, sold, imported or otherwise disposed of by their producer. The tax may be a specific amount of money per unit or a specified percentage of the value of the goods or services. The following are the categories of this type of tax:

a. Taxes and duties on imports
b. Other taxes on products excluding taxes and duties on import (e.g. hotel occupancy tax).

2.4 Improvement in methodology

The System of National Accounts (SNA) - as practiced globally by official statistical agencies - is ever-evolving, and as such, from time to time there will be adjustments in the methodology used to derive the estimates. This includes refinement of the estimation process, availability of new and improved data sources, etc. In view of constant improvement in accordance with updated SNA standards, the GDP series for the Cayman Islands in this report benefits from improvements in, and refinements of, the data sources and methodology in the compilation process. One such methodological improvement is the industry allocation of the FISIM on deposits using gross output as opposed to using

deposit by industry.[1] This change in methodology results in a greater alignment of the Cayman SNA with international best practice and the global SNA 2008.

[1]The change in methodology relates to the FISIM on deposits for non-retail banks as the deposit by industry data for these institutions are less robust than the data for retail banks.

3. GROSS DOMESTIC PRODUCT ESTIMATES-THE PRODUCTION APPROACH

3.1 Overview of GDP at purchasers' prices

The Cayman Islands' System of National Accounts Report 2018 presents the gross domestic product (GDP) estimates for the period 2014-2018.[2] The main estimates for the entire data series were calculated using both the production (GDPP) and income approaches (GDPI). The third method of calculating GDP - GDP by expenditure (GDPE) - is only available from 2015 onwards.

The production approach to estimating GDP is obtained by summing the value added of all industries within the economy (i.e. the gross value of outputs minus the value of intermediate consumption). The income approach is obtained by summing the income earned by the factors of production, i.e. compensation of employees, consumption of fixed capital, taxes less subsidies on production and imports, and operating surplus/mixed income. The expenditure approach sums the expenditures on final goods and services, capital investments by business, and net exports of goods and services (i.e. exports minus imports).

This section takes a detailed look at GDPP (the main calculation methodology used in the SNA for the Cayman Islands) through the presentation of a series of tables and graphs showing the 2018 estimates of GDP by industry. GDPI and GDPE will be examined in detail in Sections 4 and 5, respectively.

The economy of the Cayman Islands continued on its upward trajectory in 2018 posting the eighth consecutive year of economic growth. The total value of goods and services produced in 2018 - as reflected by real GDP at purchasers' price - increased by 4.1 percent, outpacing the 3.1 percent growth recorded in 2017. The acceleration in the economic expansion in 2018 represents the highest annual growth rate recorded for the Cayman economy for the directly calculated GDP series.[3] The growth in 2018 resulted in an average annual expansion of 3.2 percent for the five-year period 2014-2018. The continued economic expansion, coupled with the acceleration in the rate of growth is evidence of the robustness of the recovery from the impacts of the global recession at the end of the last decade.

The growth in 2018 was generated through the expansion in both the goods-producing industries (6.9%) as well as the service industries (3.3%). The performance of the good-producing industries resulted from growth in all areas in the group, led by construction

[2]GDP by income components is provided for the period 2013-2018. GDP by expenditure (GDPE) is only available for 2015-2018.

[3]The calculated GDP series started in 2006. Prior to 2006 GDP estimates for the Cayman Islands were derived using indicators, not direct calculations.

services (7.8%), and manufacturing activities (6.7%). As with the goods-producing industries, all areas in the service industries expanded in 2018. This is further evidence of the broad-based performance of the domestic economy. The growth in the service-producing industries was led by the performance in hotel & restaurant activities (8.2%); human health & social work activities (6.3%); wholesale & retail trade (4.7%); professional, scientific & technical activities, which consists primarily of legal & accounting services (4.4%); other services (4.2%);[4] and public administration & defense (3.9).

Table 1 below shows the total value of domestic output for the years 2014 to 2018. Domestic output relates to all entities that have a physical presence in the Cayman Islands; therefore, for the most part, they exclude entities registered in the Cayman Islands but have no physical presence in the country. The table shows the current and constant (i.e. inflation-adjusted) price estimates of GDP valued in both basic and purchasers' prices. The table also shows the per capita indicator relating to the respective GDP aggregates.

Table 1: System of National Accounts Main Aggregates and Per Capita Indicators

Main Aggregates (CI$'000)	2014	2015	2016[R]	2017[R]	2018
GDP (Current Basic Prices)	3,595,881.2	3,720,304.5	3,867,947.6	4,066,600.3	4,317,119.5
GDP (Constant Basic 2015 Prices)	3,611,830.7	3,720,304.5	3,825,759.7	3,947,211.5	4,083,928.7
GDP (Current Purchasers' Prices)	3,802,362.8	3,923,457.0	4,091,085.5	4,294,070.9	4,597,617.1
GDP (Constant Purchasers' 2015 Prices)	3,815,363.1	3,923,457.0	4,050,576.1	4,176,247.7	4,348,580.0
Mean Population ('000)	56.993	59.054	61.331	63.115	64.420
Per Capita Indicators (CI$)	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**
GDP (Current Basic Prices)	63,093.4	62,998.3	63,066.8	64,431.6	67,015.2
GDP (Constant Basic 2015 Prices)	63,373.2	62,998.3	62,378.9	62,540.0	63,395.4
GDP (Current Purchasers' Prices)	66,716.3	66,438.5	66,705.0	68,035.7	71,369.4
GDP (Constant Purchasers' 2015 Prices)	66,944.4	66,438.5	66,044.5	66,168.9	67,503.6

Notes:

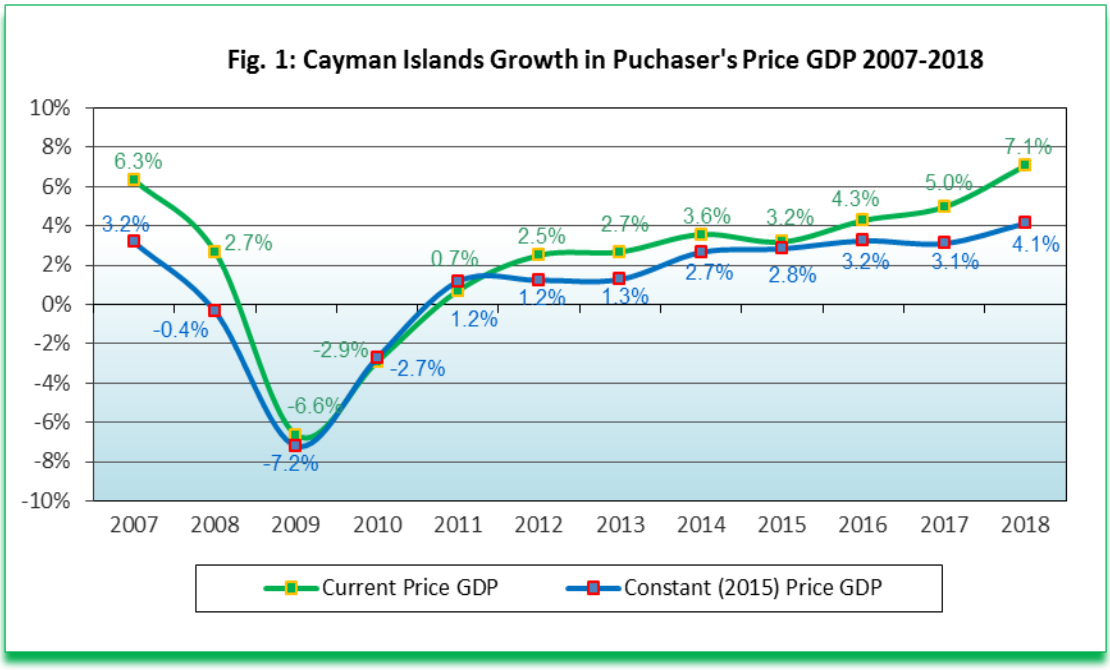
1. GDP at basic price excludes net taxes on goods and services
2. GDP at purchasers' price includes net taxes on goods and services
3. Mean population refers to the mid-year population

R-revised

[4]The other services industry is dominated by diving, snorkeling & related watersport activities. It also includes the activities of hairdressers, barbers, wedding planners, dry cleaners, churches, spas, etc.

The 4.1 percent increase in the overall real (purchasers' price) GDP[5], led to a 2.0 percent increase in the real GDP per capita as the estimated mid-year population grew by 2.1 percent. The inflation-adjusted per capita GDP (at purchasers' prices) increased for the second consecutive year, reversing the declines posted in 2016 and 2015. Real GDP per capita increased to CI$67,503.6 in 2018 from CI$66,168.9 in 2017, and CI$66,044.5 in 2016.

Figure 1 below shows the comparative growth rates of GDP at current and constant purchasers' prices for the period 2007-2018.[6] The graph reflects growth in GDP at constant prices/Real GDP of 4.1 percent in 2018, an acceleration of the 3.1 percent expansion recorded in 2017. GDP at current prices grew by 7.1 percent in 2018, an increase in the rate of growth of the 5.0 percent recorded in 2017. The graph shows the economy bottoming out in 2009 when GDP in real terms declined by 7.2 percent in the midst of the global recession. The economy has steadily recovered since 2009, returning to positive growth in 2011.



[5]Real GDP refers to GDP at constant (2015) prices, i.e. the inflation-adjusted GDP.

[6]This represents the growth rate for the entire calculated GDP series, which runs from 2006-2018 (the growth rate series would then be 2007-2018). The GDP estimates up to 2005 are based on an indicator method and not direct calculations.

3.2 GDP by industrial origin

The estimated real GDP (at purchasers' prices) for the Cayman Islands grew to CI$4,348.6 million in 2018 from the CI$4,176.2 million posted for 2017. The economic performance was broad-based, resulting from growth in all (18) industries. The expansion was primarily led by the growth in hotels & restaurants, construction, manufacturing, and human health & social work. Table 2 below provides a breakdown of real GDP by industry in purchasers' prices.[7]

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN

TABLE 2: GDP AT CONSTANT BASIC & PURCHASERS' PRICES, 2015=100 (CI$'000)

INDUSTRY	2014	2015	2016[R]	2017[R]	2018
01 Agriculture & Fishing	14,538.0	14,857.9	15,248.3	15,627.6	15,797.7
02 Mining & Quarrying	7,914.4	8,603.3	9,039.0	9,174.5	9,521.2
03 Manufacturing	31,929.7	32,607.7	35,240.9	36,096.3	38,516.2
04 Electricity, Gas & Air Conditioning Supply	55,360.7	57,045.2	58,794.9	60,109.2	60,912.7
05 Water Supply, Sewerage & Waste Management	39,549.3	34,491.5	36,265.6	37,758.4	39,019.6
06 Construction	132,136.9	142,131.2	148,018.7	151,613.5	163,383.7
07 Wholesale & Retail Trade	235,059.4	239,373.8	252,355.8	261,076.1	273,315.2
08 Transport & Storage	135,664.6	137,801.5	140,561.5	143,645.6	148,075.1
09 Hotels & Restaurants	200,648.2	202,259.0	203,886.3	214,031.0	231,580.1
10 Information & Communication	106,351.6	109,299.2	112,259.9	114,185.8	115,959.1
11 Financial & Insurance Services	1,235,187.4	1,263,887.5	1,282,392.8	1,313,948.9	1,337,239.9
12 Real Estate Activities	335,296.7	342,423.2	353,667.4	361,420.5	369,444.0
13 Professional, Scientific & Technical Activities	486,637.8	507,280.3	524,542.0	546,109.6	570,201.2
14 Administrative & Support Service Activities	95,087.2	98,405.3	101,805.1	106,133.0	109,400.4
15 Public Administration & Defense	197,358.0	202,395.6	207,760.9	215,012.4	223,419.1
16 Education Services	85,488.0	88,758.0	93,378.0	94,665.4	97,268.2
17 Human Health & Social Work	125,198.6	130,533.6	138,677.2	148,142.9	157,457.1
18 Other Services	105,889.9	108,150.5	111,865.3	118,460.8	123,418.2
GDP at Constant Basic (2015) Prices	**3,611,830.7**	**3,720,304.5**	**3,825,759.7**	**3,947,211.5**	**4,083,928.7**
Add: Taxes Less Subsidies on Products	202,391.2	203,152.6	224,816.5	229,036.3	264,651.3
GDP at Constant Purchasers' (2015) Prices	**3,815,363.1**	**3,923,457.0**	**4,050,576.1**	**4,176,247.7**	**4,348,580.0**

R-revised

[7]The GDP series prior to 2015 (new base year) is non-additive (i.e. total GDP not equal to the sum of its components) as a consequence of the methodology employed to link the rebased GDP series with the old GDP series. See Appendix 3 for a more thorough explanation of GDP rebasing.

3.3 GDP rates of growth by industry

Table 3 shows the growth rate of real GDP broken down by industry. The local economy recorded growth of 4.1 percent in 2018, which resulted in a 3.2 percent average annual growth rate over the five-year period (2014-2018). The expansion in the domestic economy in 2018 resulted from growth in both the goods-producing (6.9%) and service-producing industries (3.3%).

The continued growth in the goods-producing industries resulted in a five-year annual average growth rate of 4.6 percent. The service-producing industries also continued its upward trend posting a five-year annual average growth rate of 2.7 percent.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN

TABLE 3: RATE OF GROWTH OF GDP AT CONSTANT BASIC & PURCHASERS' PRICES, 2015=100

INDUSTRY	2014	2015	2016[R]	2017[R]	2018	5-Year Average
Goods Producing Industries	**2.7%**	**6.3%**	**4.7%**	**2.4%**	**6.9%**	**4.6%**
01 Agriculture & Fishing	8.2%	2.2%	2.6%	2.5%	1.1%	3.3%
02 Mining & Quarrying	-6.4%	8.7%	5.1%	1.5%	3.8%	2.5%
03 Manufacturing	3.3%	2.1%	8.1%	2.4%	6.7%	4.5%
06 Construction	2.6%	7.6%	4.1%	2.4%	7.8%	4.9%
Service Producing Industries	**2.0%**	**2.4%**	**2.7%**	**3.2%**	**3.3%**	**2.7%**
04 Electricity, Gas & Air Conditioning Supply	1.5%	3.0%	3.1%	2.2%	1.3%	2.2%
05 Water Supply, Sewerage & Waste Management	3.5%	-12.8%	5.1%	4.1%	3.3%	0.7%
07 Wholesale & Retail Trade	2.2%	1.8%	5.4%	3.5%	4.7%	3.5%
08 Transport & Storage	3.3%	1.6%	2.0%	2.2%	3.1%	2.4%
09 Hotels & Restaurants	4.0%	0.8%	0.8%	5.0%	8.2%	3.7%
10 Information & Communication	-0.5%	2.8%	2.7%	1.7%	1.6%	1.6%
11 Financial & Insurance Services	1.0%	2.3%	1.5%	2.5%	1.8%	1.8%
12 Real Estate Activities	1.1%	2.1%	3.3%	2.2%	2.2%	2.2%
13 Professional, Scientific & Technical Activities	4.2%	4.2%	3.4%	4.1%	4.4%	4.1%
14 Administrative & Support Service Activities	3.7%	3.5%	3.5%	4.3%	3.1%	3.6%
15 Public Administration & Defense	0.2%	2.6%	2.7%	3.5%	3.9%	2.6%
16 Education Services	0.8%	3.8%	5.2%	1.4%	2.7%	2.8%
17 Human Health & Social Work	4.0%	4.3%	6.2%	6.8%	6.3%	5.5%
18 Other Services	4.9%	2.1%	3.4%	5.9%	4.2%	4.1%
GDP at Constant Basic (2015) Prices	**2.3%**	**3.0%**	**2.8%**	**3.2%**	**3.5%**	**2.9%**
Taxes Less Subsidies on Products	8.6%	0.4%	10.7%	1.9%	15.5%	7.4%
GDP at Constant Purchasers' (2015) Prices	**2.7%**	**2.8%**	**3.2%**	**3.1%**	**4.1%**	**3.2%**

R-revised

Note: Average Annual Growth Rate (AAGR) represents the arithmetic mean of the annual growth rates.

3.3.1 Goods-producing industries

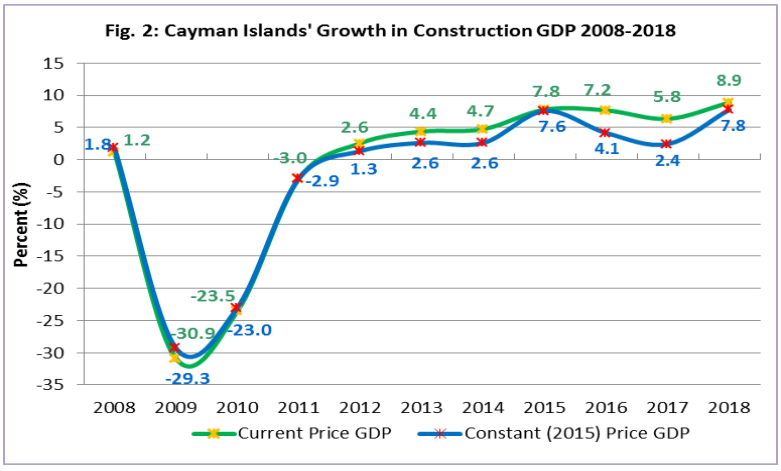
The goods-producing industries registered its sixth consecutive year of growth in 2018, led mainly by the continued improvement of construction and manufacturing activities. The group registered an uptick in the rate of growth in 2018, growing by 6.9 percent when compared to the 2.4 percent growth realized in 2017.

The activities of **agriculture & fishing** continued on its expansionary path in 2018, albeit at a reduced rate. The activity grew by 1.1 percent in 2018, following the 2.5 percent and 2.6 percent growth recorded in 2017 and 2016, respectively. This was due to the improvements in all sub-groups, i.e. agricultural crops, farming of animals and capture fishing.

The growth in **mining & quarrying** activities continued in 2018 with the industry expanding by 3.8 percent following on the growth posted in 2017 (1.5%) and 2016 (5.1%). The accelerated rate of expansion in mining & quarrying came amidst a deceleration in the imports of construction aggregate, which increased by 13.7 percent in 2018 (251,994 tons in 2018 from 221,537 tons in 2017) when compared to the 16.2 percent increase posted in 2017 (221,537 tons in 2017 from 190,629 tons in 2016).[8]

The **manufacturing industry** continued on its upward trajectory, growing by 6.7 percent in 2018. This resulted in a five-year annual average growth rate of 4.5 percent. The growth in 2018 was led by construction-related goods, which reflected the higher demand for concrete and concrete products.

The value added of **construction activities** grew by 7.8 percent, outpacing the 2.4 percent growth in 2017. This represents the highest rate of growth posted by the industry in the directly calculated GDP series.[9] This resulted in a five-year annual average growth rate of 4.9 percent, which is the second only to the performance of human health and social work activities over a



[8]Source: https://www.caymanport.com/wp-content/uploads/cargo_stats.pdf

[9]The calculated GDP series started in 2006. Prior to 2006 GDP estimates for the Cayman Islands were derived using indicators, not direct calculations.

similar period. The higher output levels in 2018 is attributed to the improved performance of the building installation and building construction sub-industries, which grew by 12.9 percent and 6.7 percent, respectively. The improvement in construction activities in 2018 adds to the positive performances posted in 2012 (1.3%), 2013 (2.6%), 2014 (2.6%), 2015 (7.6%), 2016 (4.1%) and 2017 (2.4%).

3.3.2 Service-producing industries

In 2018, the service-producing industries recorded their highest combined rate of growth over the past five years. The growth of 3.3 percent in 2018 represents the eighth consecutive year of increase, resulting in a five-year annual average growth of 2.7 percent. The expansion was fuelled by higher levels of activity in all industries, led by hotels & restaurants; human health & social work; wholesale & retail trade; professional scientific & technical activities; and other services.

The increase of 1.3 percent in the **electricity, gas & air conditioning supply industry** represents the sixth consecutive year of expansion since 2013. The industry posted a five-year annual average growth of 2.2 percent. The expansion was positively impacted by a 1.1 percent increase in electricity consumption, which moved from 621,786 megawatt-hours (Mwhrs) in 2017 to 628,822 Mwhrs in 2018.[10] The increase is attributed mainly to higher commercial electricity consumption supported by the marginal increase in residential consumption.

The **water supply, sewerage & waste management industry** grew by 3.3 percent in 2018. This resulted in a five-year annual average increase of 0.7 percent, which resulted from positive performances in water supply and garbage collection activities. The industry posted the lowest five-year average increase of all industries, which results from the 12.8 percent decline posted in 2015. The decline in 2015 resulted from the reclassification of government waste collection activities from this industry into public administration.

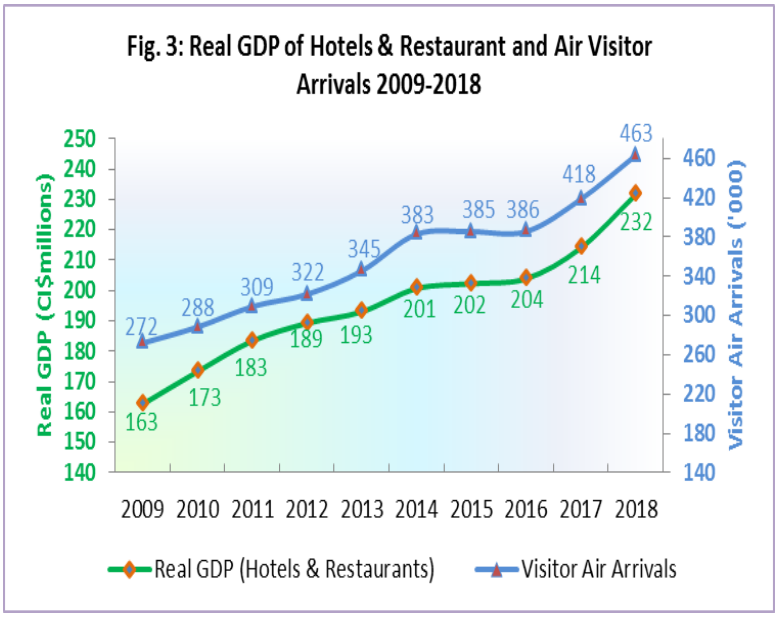
Wholesale & retail trade registered growth of 4.7 percent in 2018, resulting in a five-year annual average growth rate of 3.5 percent. The increase may be correlated with growth in the aggregate demand as the year-end population increased by 3.8 percent, moving to 65,813 in 2018 from 63,415 in 2017.

Transport & storage activities continued to grow in 2018, expanding by 3.1 percent. This improved performance resulted in a five-year annual average increase of 2.4 percent. The positive performance of the industry was fuelled by the 3.2 percent increase in both the transport services and supporting transport activities sub-industries. The positive result

[10]This represents electricity consumption for Grand Cayman; data for the Sister Islands was unavailable.

in the transport services sub-industry was underpinned primarily by the increases in land transport (6.4%) and sea transport (10.4%). Post and courier services grew by 1.3 percent, the third consecutive year of growth following three previous years of decline.

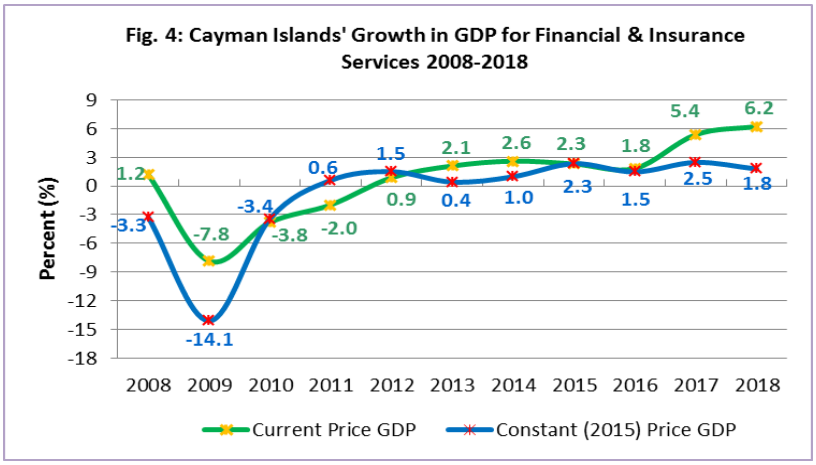
The **hotels & restaurants industry** recorded the highest level of growth in the service-producing industries, growing by 8.2 percent in 2018. This outpaced the 5.0 percent growth recorded in 2017. The increase in the industry was due in part to the 10.7 percent growth in stay-over visitors, which increased to 463.0 thousand in 2018 from 418.4 thousand in 2017. Figure 3 illustrates the continued positive relationship between real GDP for the hotels & restaurants industry and the stay-over (air arrival) visitors (i.e. real GDP and visitor arrivals are trending in a similar direction). The flattening of both series in 2015 and 2016 along with the parallel movement in other years is evidence of this positive relationship. However, it should be noted that while both maintain a positive relationship, there are other underlying factors that influence the movements in GDP for the hotels & restaurants industry.



Information & communication activities grew for the fourth consecutive year in 2018 (1.6%), albeit at a lower rate when compared to the increase of 1.7 percent in 2017. The expansion resulted in a five-year annual average growth rate of 1.6 percent. The performance of the industry was positively impacted by the 4.0 percent increase in the computer & related services sub-industry. In terms of contribution, the industry is dominated by telecommunication services, which grew by 1.4 percent in 2018. The decline in broadcasting services (5.5%) tempered the overall performance of the industry.

The **financial & insurance services industry** posted another year of expansion, growing by 1.8 percent in 2018. Notwithstanding the continued positive performance of the industry, the pace slowed in 2018 when compared to the 2.5 percent growth recorded for 2017. The industry continued to show consistent growth with a five-year annual average growth rate of 1.8 percent. The performance of the industry was broad-based

with all sub-industries expanding in 2018. The increased activity in the industry emanated from the growth in services of banking institutions (2.4%), other financial[11] and auxiliary financial services[12] (1.4%), and insurance and pension funding services (1.1%). Figure 4 provides a graphical display of the performance of the sector over the period 2008-2018.



Real estate activities continued its sustained growth, expanding by 2.2 percent in 2018. The favourable performance in 2018 resulted in a five-year annual average growth rate of 2.2 percent. The growth was underpinned by increases in other real estate activities[13] (12.2%), renting of residential buildings (2.9%), and renting of commercial buildings (1.4%). The expansion was tempered by a marginal decline in the operations of owner-occupied dwellings (-0.1%). The noteworthy performance of other real estate activities reflects the 7.4 percent increase in the total value of all land and property transfers in the Cayman Islands in 2018 (from CI$830 million in 2017 to CI$891.8 million in 2018).

The **professional, scientific & technical activities** industry registered an increase of 4.4 percent in 2018, representing an improvement over the 4.1 percent posted in 2017. The industry recorded a five-year annual average growth of 4.1 percent, resulting from continued expansion since 2009. The performance in 2018 was attributed to the increase in the value added of legal services (5.7%), other professional, scientific & technical activities (5.2%) and accounting services (2.7%).

Administrative & support service activities grew by 3.1 percent in 2018, growing at a slower rate than the 4.3 percent recorded in 2017. The growth in 2018 led to a five-year annual average growth rate of 3.6 percent. The performance of the industry was driven by increased activity in car rental services (10.3%), renting of other machinery &

[11]Other financial services include credit unions, building societies, remittance services, property trusts services, etc.

[12]Auxiliary financial services include portfolio management services, stock exchange services, security brokers, etc.

[13]Other real estate activities include real estate agents and brokers and property managers.

equipment (7.7%), travel agencies & tour planners (4.7%), and landscaping activities (2.6%).

Public administration & defence activities registered an increase of 3.9 percent, which outpaced the seven previous years of expansion. This resulted in a five-year annual average growth rate of 2.6 percent. The expansion in public administration services may be traced (in part) to the increase in the number of core government employees. Personnel costs increased by 3.0 percent, moving to CI$281.7 million in 2018, from CI$273.6 million in 2017.

Education services posted an increase of 2.7 percent in 2018, growing at a higher rate when compared to the 1.4 percent growth recorded in 2017. The expansion in 2018 resulted in a five-year annual average growth rate of 2.8 percent. The higher output levels recorded were as a result of growth in both the public and private education sub-industries of 3.3 percent and 2.2 percent, respectively.

The **human health & social work industry** continued on its growth trajectory, expanding by 6.3 percent in 2018 despite growing at a slower rate than the 6.8 percent posted in 2017. The performance in 2018 resulted in the highest five-year annual average growth of all industries in the economy (5.5%). The continued improvement in the output of both private and public health services positively impacted the performance of the industry. In 2018, private health services continued to provide the main impetus, expanding by 8.4 percent while public health services grew by 4.1 percent.

The value added of **other services** grew by 4.2 percent in 2018, albeit slower when compared to the 5.9 percent recorded in 2017. Contributing to the growth in the industry was the 4.1 percent growth in water sport activities and the 6.8 percent increase in activities of private household with employed persons. The increase in the output of water sports activities was positively influenced by the 11.0 percent increase in total visitors in 2018 compared to 2017.

In summary, the Cayman Islands' economy recorded its highest annual growth rate for the directly calculated GDP series (4.1%).[14] The increase in activity in 2018 adds to the 3.1 percent posted in 2017, 3.2 percent in 2016 and 2.8 percent in 2015. This trend of expansion led to a five-year annual average growth rate of 3.2 percent for the local economy. Domestic economic activity was bolstered by a general increase in the aggregate demand for goods and services associated with the continued increase in the resident population and the growth in total visitors. The continued growth in financial & insurance services, professional, scientific & technical activities and construction activity

[14]The calculated GDP series started in 2006. Prior to 2006 GDP estimates for the Cayman Islands were derived using indicators, not direct calculations.

along with the continued buoyance in global economic activity serve as positive indicators for the sustained expansion of the domestic economy.

3.4 Contribution to GDP by industry

Table 4 shows the industries classified as goods-producing and service-producing. In 2018, there was a marginal increase in the combined share of the goods-producing industries, which moved to 5.2 percent from 5.1 percent in 2017. This played a role in the noteworthy decline of the services-producing industries, which moved from 89.4 percent in 2017 to 88.7 percent in 2018. The contraction in the share of the service-producing industries resulted from the declines in the contribution of financial & insurance services, education services and real estate activities. This decline was mollified by an increase in the shares of hotels & restaurants, and human health & social work.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN

TABLE 4: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT PURCHASERS' PRICES, 2015=100

INDUSTRY	2014	2015	2016[R]	2017[R]	2018
Goods Producing Industries	**4.9%**	**5.1%**	**5.1%**	**5.1%**	**5.2%**
01 Agriculture & Fishing	0.4%	0.4%	0.4%	0.4%	0.4%
02 Mining & Quarrying	0.2%	0.2%	0.2%	0.2%	0.2%
03 Manufacturing	0.8%	0.8%	0.9%	0.9%	0.9%
06 Construction	3.5%	3.6%	3.7%	3.6%	3.8%
Service Producing Industries	**90.1%**	**89.8%**	**89.3%**	**89.4%**	**88.7%**
04 Electricity, Gas & Air Conditioning Supply	1.5%	1.5%	1.5%	1.4%	1.4%
05 Water Supply, Sewerage & Waste Management	1.0%	0.9%	0.9%	0.9%	0.9%
07 Wholesale & Retail Trade	6.2%	6.1%	6.2%	6.3%	6.3%
08 Transport & Storage	3.6%	3.5%	3.5%	3.4%	3.4%
09 Hotels & Restaurants	5.3%	5.2%	5.0%	5.1%	5.3%
10 Information & Communication	2.8%	2.8%	2.8%	2.7%	2.7%
11 Financial & Insurance Services	32.4%	32.2%	31.7%	31.5%	30.8%
12 Real Estate Activities	8.8%	8.7%	8.7%	8.7%	8.5%
13 Professional, Scientific & Technical Activities	12.8%	12.9%	12.9%	13.1%	13.1%
14 Administrative & Support Service Activities	2.5%	2.5%	2.5%	2.5%	2.5%
15 Public Administration & Defense	5.2%	5.2%	5.1%	5.1%	5.1%
16 Education Services	2.2%	2.3%	2.3%	2.3%	2.2%
17 Human Health & Social Work	3.3%	3.3%	3.4%	3.5%	3.6%
18 Other Services	2.8%	2.8%	2.8%	2.8%	2.8%
GDP at Constant Basic (2015) Prices	**94.7%**	**94.8%**	**94.4%**	**94.5%**	**93.9%**
Taxes Less Subsidies on Products	5.3%	5.2%	5.6%	5.5%	6.1%
GDP at Constant Purchasers' (2015) Prices	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

R-revised

An examination of the contribution of the various industries to the domestic economy is useful in discerning their relative ranking. Table 5 below shows the contribution of the eighteen (18) industries as well as their ranking over the period under review. The rankings reflect the relative importance of an industry (as it pertains to their direct contribution to real GDP) to the Cayman Islands' economy. There was only one change in the relative ranking of the industries in 2018 when compared to 2017. The change was found between rankings five (5) and six (6), where hotels & restaurants rose to fifth, thereby shifting public administration and defense one position down to sixth (6th). Changes were observed in the individual contribution of six (6) of the eighteen (18) industries. Of the six industries registering a change in their contribution, three registered increases while three posted declines.

TABLE 5: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT PURCHASERS' PRICES, 2015=100

Ranking					INDUSTRY	% Contribution to GDP				
2014	2015	2016	2017	2018		2014	2015	2016	2017	2018
1	1	1	1	1	Financial & Insurance Services	32.4	32.2	31.7	31.5	30.8
2	2	2	2	2	Professional, Scientific & Technical Activities	12.8	12.9	12.9	13.1	13.1
3	3	3	3	3	Real Estate Activities	8.8	8.7	8.7	8.7	8.5
4	4	4	4	4	Wholesale & Retail Trade	6.2	6.1	6.2	6.3	6.3
5	6	6	6	5	Hotels & Restaurants	5.3	5.2	5.0	5.1	5.3
6	5	5	5	6	Public Administration & Defense	5.2	5.2	5.1	5.1	5.1
8	7	7	7	7	Construction	3.5	3.6	3.7	3.6	3.8
9	9	9	8	8	Human Health & Social Work	3.3	3.3	3.4	3.5	3.6
7	8	8	9	9	Transport & Storage	3.6	3.5	3.5	3.4	3.4
11	11	11	10	10	Other Services	2.8	2.8	2.8	2.8	2.8
10	10	10	11	11	Information & Communication	2.8	2.8	2.8	2.7	2.7
12	12	12	12	12	Administrative & Support Service Activities	2.5	2.5	2.5	2.5	2.5
13	13	13	13	13	Education Services	2.2	2.3	2.3	2.3	2.2
14	14	14	14	14	Electricity, Gas & Air Conditioning Supply	1.5	1.5	1.5	1.4	1.4
15	15	15	15	15	Water Supply, Sewerage & Waste Management	1.0	0.9	0.9	0.9	0.9
16	16	16	16	16	Manufacturing	0.8	0.8	0.9	0.9	0.9
17	17	17	17	17	Agriculture & Fishing	0.4	0.4	0.4	0.4	0.4
18	18	18	18	18	Mining & Quarrying	0.2	0.2	0.2	0.2	0.2
					GDP at Constant Basic (2015) Prices	94.7	94.8	94.4	94.5	93.9
					Add: Taxes Less Subsidies on Products	5.3	5.2	5.6	5.5	6.1
					GDP at Constant Purchasers' (2015) Prices	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

The contribution of financial & insurance services continued to decline in 2018, but the industry maintained its dominance as the largest single contributor to real GDP of the

Cayman Islands. The contribution of the industry contracted to 30.8 percent in 2018, down from the 31.5 percent share in 2017. This represents the sixth consecutive year of decline as other industries posted higher growth rates. The decline of 0.7 percentage points in 2018 represents a more significant contraction compared to the decline of 0.2 percentage points in 2017.

The share of the professional, scientific & technical activities industry remained unchanged at 13.1 percent in 2018. This consolidates its position as the second-largest contributor to real GDP.

Other significant contributions to real GDP in 2018 came from real estate activities, wholesale & retail trade, hotel & restaurant activities, and public administration & defence. Real estate activities declined to 8.5 percent in 2018, from 8.7 percent in 2017. The share of wholesale & retail trade remained unchanged in 2018 when compared to 2017, posting a share of 6.3 percent. Hotel & restaurant services increased its share to 5.3 percent in 2018 from 5.1 percent in 2017. This increase in share is primarily due to the growth in stay-over visitors. Public administration held firm at 5.1 percent in 2018, similar to the share posted in 2017 and 2016.

Due to the robust growth in construction activities, the industry was able to increase its share of GDP in 2018. Construction activities maintained its seventh place, moving to 3.8 percent in 2018, from 3.6 percent in 2017.

3.5 Industry GDP at current prices

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN					
TABLE 6: GDP AT CURRENT BASIC & PURCHASERS' PRICES (CI$'000)					
INDUSTRY	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**
01 Agriculture & Fishing	13,611.5	14,857.9	16,342.2	17,323.7	17,876.3
02 Mining & Quarrying	7,891.2	8,603.3	9,742.1	9,785.1	10,149.6
03 Manufacturing	31,424.7	32,607.7	35,170.4	36,490.1	39,435.8
04 Electricity, Gas & Air Conditioning Supply	52,184.2	57,045.2	63,528.8	61,935.4	66,772.9
05 Water Supply, Sewerage & Waste Management	38,846.1	34,491.5	36,533.2	37,230.6	38,576.1
06 Construction	131,871.6	142,131.2	153,016.6	162,719.6	177,132.0
07 Wholesale & Retail Trade	231,496.1	239,373.8	248,672.8	260,900.9	280,916.9
08 Transport & Storage	130,326.5	137,801.5	141,825.2	146,556.0	153,899.9
09 Hotels & Restaurants	188,836.4	202,259.0	212,028.2	226,788.4	249,810.9
10 Information & Communication	103,922.1	109,299.2	115,055.0	120,098.7	121,817.2
11 Financial & Insurance Services	1,235,430.2	1,263,887.5	1,286,911.3	1,355,824.9	1,440,014.4
12 Real Estate Activities	344,187.8	342,423.2	353,873.5	365,436.5	368,935.0
13 Professional, Scientific & Technical Activities	488,315.9	507,280.3	532,806.7	566,421.7	606,638.9
14 Administrative & Support Service Activities	94,982.6	98,405.3	103,105.3	108,916.1	114,877.3
15 Public Administration & Defense	188,435.8	202,395.6	213,321.9	227,214.6	241,190.4
16 Education Services	84,708.0	88,758.0	94,517.4	96,206.2	102,112.7
17 Human Health & Social Work	123,474.4	130,533.6	139,289.9	147,582.9	160,693.4
18 Other Services	105,936.0	108,150.5	112,207.0	119,168.8	126,269.8
GDP at Current Basic Prices	**3,595,881.2**	**3,720,304.5**	**3,867,947.6**	**4,066,600.3**	**4,317,119.5**
Add: Taxes Less Subsidies on Products	206,481.6	203,152.6	223,137.9	227,470.6	280,497.6
GDP at Current Purchasers' Prices	**3,802,362.8**	**3,923,457.0**	**4,091,085.5**	**4,294,070.9**	**4,597,617.1**

R-revised

3.6 Detailed value added by industry

TABLE 7: DETAILED VALUE ADDED BY INDUSTRY	CURRENT/NOMINAL (CI$'000)					CONSTANT/REAL (CI$'000)				
INDUSTRY	2014	2015	2016[R]	2017[R]	2018	2014	2015	2016[R]	2017[R]	2018
AGRICULTURE & FISHING	**13,611.5**	**14,857.9**	**16,342.2**	**17,323.7**	**17,876.3**	**14,538.0**	**14,857.9**	**15,248.3**	**15,627.6**	**15,797.7**
Growing of Agricultural Crops	11,760.7	12,249.8	13,382.5	13,856.7	14,158.9	12,082.9	12,249.8	12,645.7	12,939.3	13,022.4
Farming of Animals	794.9	1,080.1	1,057.2	1,274.3	1,396.6	889.2	1,080.1	1,051.8	1,111.9	1,122.1
Capture Fishing	1,055.9	1,528.0	1,902.4	2,192.7	2,320.9	1,480.2	1,528.0	1,550.8	1,576.5	1,653.2
MINING & QUARRYING	**7,891.2**	**8,603.3**	**9,742.1**	**9,785.1**	**10,149.6**	**7,914.4**	**8,603.3**	**9,039.0**	**9,174.5**	**9,521.2**
Quarrying incl. Stone, Sand and Gravel	7,891.2	8,603.3	9,742.1	9,785.1	10,149.6	7,914.4	8,603.3	9,039.0	9,174.5	9,521.2
MANUFACTURING	**31,424.7**	**32,607.7**	**35,170.4**	**36,490.1**	**39,435.8**	**31,929.7**	**32,607.7**	**35,240.9**	**36,096.3**	**38,516.2**
Food Products, Beverages and Tobacco Products	8,203.3	8,489.2	9,094.6	9,544.1	10,332.4	8,448.6	8,489.2	8,955.1	9,131.3	9,635.0
Builders' Carpentry and Joinery, incl. Furniture and Rubber and Plastic Product	3,126.0	3,067.1	3,121.4	3,253.6	3,696.6	3,242.5	3,067.1	3,133.5	3,138.1	3,312.4
Non-Metallic Mineral Products (incl. Glass and Glass Products, Concrete, Cement)	9,414.0	10,781.5	12,021.1	12,419.4	13,465.3	9,282.1	10,781.5	12,001.7	12,669.2	13,726.5
Basic Metals, Fabricated Metal Products, Machinery & Equipment	3,792.0	3,850.0	4,168.4	4,404.0	4,656.7	3,703.5	3,850.0	4,191.8	4,097.6	4,307.8
Other Manufacturing Goods n.e.c.	6,889.6	6,420.0	6,764.9	6,869.0	7,284.9	6,443.9	6,420.0	6,958.8	7,060.1	7,534.5
ELECTRICITY, GAS & AIR CONDITIONING SUPPLY	**52,184.2**	**57,045.2**	**63,528.8**	**61,935.4**	**66,772.9**	**55,360.7**	**57,045.2**	**58,794.9**	**60,109.2**	**60,912.7**
Production, Collection and Distribution of Electricity and the Manufacture of Ice	52,184.2	57,045.2	63,528.8	61,935.4	66,772.9	55,360.7	57,045.2	58,794.9	60,109.2	60,912.7
WATER SUPPLY, SEWERAGE & WASTE MANAGEMENT	**38,846.1**	**34,491.5**	**36,533.2**	**37,230.6**	**38,576.1**	**39,549.3**	**34,491.5**	**36,265.6**	**37,758.4**	**39,019.6**
Water Collection, Treatment and Distribution, Sewerage and Waste Collection	38,846.1	34,491.5	36,533.2	37,230.6	38,576.1	39,549.3	34,491.5	36,265.6	37,758.4	39,019.6
CONSTRUCTION	**131,871.6**	**142,131.2**	**153,016.6**	**162,719.6**	**177,132.0**	**132,136.9**	**142,131.2**	**148,018.7**	**151,613.5**	**163,383.7**
Construction (incl building installation, building completion, etc.)	131,871.6	142,131.2	153,016.6	162,719.6	177,132.0	132,136.9	142,131.2	148,018.7	151,613.5	163,383.7
WHOLESALE & RETAIL TRADE	**231,496.1**	**239,373.8**	**248,672.8**	**260,900.9**	**280,916.9**	**235,059.4**	**239,373.8**	**252,355.8**	**261,076.1**	**273,315.2**
Wholesale & Retail Trade	231,496.1	239,373.8	248,672.8	260,900.9	280,916.9	235,059.4	239,373.8	252,355.8	261,076.1	273,315.2
TRANSPORT & STORAGE	**130,326.5**	**137,801.5**	**141,825.2**	**146,556.0**	**153,899.9**	**135,664.6**	**137,801.5**	**140,561.5**	**143,645.6**	**148,075.1**
Transport	60,023.8	63,068.3	66,120.7	65,315.6	67,806.0	61,471.0	63,068.3	64,176.9	64,408.7	66,477.0
Supporting Activities for Transport (incl Cargo)	62,502.1	67,051.9	67,680.7	72,458.8	77,098.3	66,283.8	67,051.9	68,327.2	70,544.6	72,789.4
Post and Courier Activities	7,800.5	7,681.3	8,023.8	8,781.6	8,995.6	7,888.8	7,681.3	8,057.4	8,692.3	8,808.7
HOTELS & RESTAURANTS	**188,836.4**	**202,259.0**	**212,028.2**	**226,788.4**	**249,810.9**	**200,648.2**	**202,259.0**	**203,886.3**	**214,031.0**	**231,580.1**
Hotels & Other Short-Term Accommodations Activities	131,029.1	142,266.3	150,455.2	162,640.1	181,558.2	141,223.9	142,266.3	143,408.3	152,346.5	168,005.3
Restaurants, Bars & Other Food Service Activities	57,807.4	59,992.8	61,573.0	64,148.3	68,252.7	59,421.4	59,992.8	60,478.0	61,684.5	63,574.9
INFORMATION & COMMUNICATION	**103,922.1**	**109,299.2**	**115,055.0**	**120,098.7**	**121,817.2**	**106,351.6**	**109,299.2**	**112,259.9**	**114,185.8**	**115,959.1**
Motion Picture Projection, Radio & TV Programming and Broadcasting and Telecommunications Activities	77,337.5	81,400.8	86,424.6	92,570.4	93,119.0	79,495.1	81,400.8	83,224.7	86,295.8	87,512.0
Publishing, Printing and Computer & Data Processing Services	26,584.6	27,898.4	28,630.4	27,528.3	28,698.2	26,821.4	27,898.4	29,035.2	27,890.0	28,447.2

TABLE 7 cont'd: DETAILED VALUE ADDED BY INDUSTRY	CURRENT/NOMINAL (CI$'000)					CONSTANT/REAL (CI$'000)				
INDUSTRY	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**
FINANCIAL & INSURANCE SERVICES	**1,235,430.2**	**1,263,887.5**	**1,286,911.3**	**1,355,824.9**	**1,440,014.4**	**1,235,187.4**	**1,263,887.5**	**1,282,392.8**	**1,313,948.9**	**1,337,239.9**
Monetary Institutions (incl. CIMA)	633,274.8	615,477.7	619,192.8	667,846.7	713,393.0	604,873.5	615,477.7	619,099.6	625,939.3	640,876.3
Other Financial Institutions & Financial Services	252,840.6	258,246.6	256,752.1	269,412.8	281,757.7	253,761.7	258,246.6	259,751.7	269,164.4	272,819.3
Insurance, Pension Funding (incl. Auxiliary Activities)	349,314.8	390,163.2	410,966.5	418,565.4	444,863.7	402,984.2	390,163.2	403,541.4	418,845.2	423,544.3
REAL ESTATE ACTIVITIES	**344,187.8**	**342,423.2**	**353,873.5**	**365,436.5**	**368,935.0**	**335,296.7**	**342,423.2**	**353,667.4**	**361,420.5**	**369,444.0**
Operating of Owner-Occupied Dwellings	184,897.7	172,610.0	174,456.6	177,653.2	172,115.3	173,222.3	172,610.0	177,951.0	180,583.5	180,489.0
Renting of Residential Buildings	79,585.2	83,631.6	89,521.1	89,994.9	91,371.7	80,862.1	83,631.6	85,610.3	86,047.7	88,547.1
Renting of Commercial Buildings	45,781.8	50,815.4	52,181.5	55,776.5	58,404.8	48,850.2	50,815.4	52,912.2	55,103.8	55,878.9
Other Real Estate Activities	33,923.1	35,366.2	37,714.3	42,011.9	47,043.3	34,172.3	35,366.2	37,193.8	39,685.5	44,529.0
PROFESSIONAL, SCIENTIFIC & TECHNICAL ACTIVITIES	**488,315.9**	**507,280.3**	**532,806.7**	**566,421.7**	**606,638.9**	**486,637.8**	**507,280.3**	**524,542.0**	**546,109.6**	**570,201.2**
Legal Activities	237,844.1	246,198.4	262,334.4	278,123.8	300,265.2	238,145.5	246,198.4	256,700.1	267,829.8	281,544.6
Accounting & Auditing Activities	147,670.2	152,528.3	158,094.8	170,228.7	179,823.3	144,593.3	152,528.3	157,103.7	164,101.6	168,489.0
Other Professional, Scientific & Technical Activities	102,801.6	108,553.6	112,377.5	118,069.2	126,550.4	104,420.9	108,553.6	110,738.2	114,178.1	120,167.6
ADMINISTRATIVE & SUPPORT SERVICE ACTIVITIES	**94,982.6**	**98,405.3**	**103,105.3**	**108,916.1**	**114,877.3**	**95,087.2**	**98,405.3**	**101,805.1**	**106,133.0**	**109,400.4**
Administrative and Support Service to Businesses (incl. Renting of Machinery & Equipment)	94,982.6	98,405.3	103,105.3	108,916.1	114,877.3	95,087.2	98,405.3	101,805.1	106,133.0	109,400.4
PUBLIC ADMINISTRATION & DEFENSE	**188,435.8**	**202,395.6**	**213,321.9**	**227,214.6**	**241,190.4**	**197,358.0**	**202,395.6**	**207,760.9**	**215,012.4**	**223,419.1**
Public Administration and Defense	188,435.8	202,395.6	213,321.9	227,214.6	241,190.4	197,358.0	202,395.6	207,760.9	215,012.4	223,419.1
EDUCATION SERVICES	**84,708.0**	**88,758.0**	**94,517.4**	**96,206.2**	**102,112.7**	**85,488.0**	**88,758.0**	**93,378.0**	**94,665.4**	**97,268.2**
Public Education	43,946.3	45,776.1	47,544.6	48,820.6	51,402.6	43,473.4	45,776.1	47,865.6	48,888.7	50,501.7
Private Education	40,761.7	42,981.9	46,972.9	47,385.6	50,710.1	42,492.2	42,981.9	45,512.4	45,776.7	46,766.5
HUMAN HEALTH & SOCIAL WORK	**123,474.4**	**130,533.6**	**139,289.9**	**147,582.9**	**160,693.4**	**125,198.6**	**130,533.6**	**138,677.2**	**148,142.9**	**157,457.1**
Public Health and Social Services	63,222.9	68,236.0	70,104.9	72,156.4	78,357.7	66,152.6	68,236.0	69,684.3	71,423.1	74,321.4
Private Health & Social Services	60,251.5	62,297.7	69,184.9	75,426.5	82,335.7	58,477.9	62,297.7	68,992.9	76,719.8	83,135.7
OTHER SERVICES	**105,936.0**	**108,150.5**	**112,207.0**	**119,168.8**	**126,269.8**	**105,889.9**	**108,150.5**	**111,865.3**	**118,460.8**	**123,418.2**
Private Arts, Entertainment & Recreation	39,368.7	40,065.7	41,445.8	43,292.3	46,186.8	39,149.8	40,065.7	41,563.9	43,085.5	44,502.2
Personal & Household Services (incl. Activities of Membership Organization)	37,276.6	38,248.9	39,655.6	41,437.3	43,285.5	37,109.7	38,248.9	39,195.7	40,936.1	42,118.5
Private Households with Employed Persons	29,290.7	29,835.9	31,105.7	34,439.1	36,797.5	29,635.3	29,835.9	31,105.7	34,439.1	36,797.5
VALUE ADDED/GDP AT BASIC PRICES	**3,595,881.2**	**3,720,304.5**	**3,867,947.6**	**4,066,600.3**	**4,317,119.5**	**3,611,830.7**	**3,720,304.5**	**3,825,759.7**	**3,947,211.5**	**4,083,928.7**
TAXES LESS SUBSIDIES ON PRODUCTS	206,481.6	203,152.6	223,137.9	227,470.6	280,497.6	202,391.2	203,152.6	224,816.5	229,036.3	264,651.3
GROSS DOMESTIC PRODUCTS AT PURCHASERS' PRICES	**3,802,362.8**	**3,923,457.0**	**4,091,085.5**	**4,294,070.9**	**4,597,617.1**	**3,815,363.1**	**3,923,457.0**	**4,050,576.1**	**4,176,247.7**	**4,348,580.0**

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3.7 Implicit price index by industry

The GDP Implicit Price Index (IPI) is an indicator for price inflation calculated by dividing the current price GDP (nominal GDP) by the constant price GDP (Real GDP). This index measures the implicit prices of all the final goods and services produced in the local economy. It is used to gauge the inflationary tendency in the economy similar to the Consumer Price Index (CPI) and the Producer Price Index (PPI) but is the broadest measure of price level of the three. The IPI is derived indirectly from the estimates of GDP in constant and current prices, unlike the CPI or PPI, which are derived directly from the collected price data for the items included in the index.

Table 8 below shows the IPI by industry for the Cayman Islands for the period 2012-2018. The IPI by industry provides information on the inflationary tendency at the industry level. The interpretation of the table is to show how prices have moved year over year or relative to the base year. The inflation rate using the GDP IPI is derived as the percentage change in the index from one period to the next. The IPI for the base year (in this case 2015) is equal to 100.

CAYMAN ISLANDS GROSS DOMESTIC (GDP) TABLES

TABLE 8: GDP IMPLICIT PRICE INDEX (IPI), 2015=100

INDUSTRY	2012	2013	2014	2015	2016	2017	2018
01 Agriculture & Fishing	89.5	93.2	93.6	100.0	107.2	110.9	113.2
02 Mining & Quarrying	96.2	96.6	99.7	100.0	107.8	106.7	106.6
03 Manufacturing	93.1	94.3	98.4	100.0	99.8	101.1	102.4
04 Electricity, Gas & Air Conditioning Supply	92.6	98.9	94.3	100.0	108.1	103.0	109.6
05 Water Supply, Sewerage & Waste Management	99.8	96.9	98.2	100.0	100.7	98.6	98.9
06 Construction	96.1	97.8	99.8	100.0	103.4	107.3	108.4
07 Wholesale & Retail Trade	95.5	96.5	98.5	100.0	98.5	99.9	102.8
08 Transport & Storage	89.7	92.2	96.1	100.0	100.9	102.0	103.9
09 Hotels & Restaurants	84.0	89.6	94.1	100.0	104.0	106.0	107.9
10 Information & Communication	94.6	94.2	97.7	100.0	102.5	105.2	105.1
11 Financial & Insurance Services	96.8	98.4	100.0	100.0	100.4	103.2	107.7
12 Real Estate Activities	104.0	102.9	102.7	100.0	100.1	101.1	99.9
13 Professional, Scientific & Technical Activities	98.7	99.5	100.3	100.0	101.6	103.7	106.4
14 Administrative & Support Service Activities	97.8	99.0	99.9	100.0	101.3	102.6	105.0
15 Public Administration & Defense	95.0	94.0	95.5	100.0	102.7	105.7	108.0
16 Education Services	95.3	98.2	99.1	100.0	101.2	101.6	105.0
17 Human Health & Social Work	94.4	97.2	98.6	100.0	100.4	99.6	102.1
18 Other Services	93.9	97.2	100.0	100.0	100.3	100.6	102.3
GDP Implicit Deflator at Basic Prices	**97.0**	**98.2**	**99.6**	**100.0**	**101.1**	**103.0**	**105.7**
Add: Taxes Less Subsidies on Products	106.0	109.1	102.0	100.0	99.3	99.3	106.0
GDP Implicit Deflator at Purchasers' Prices	**97.4**	**98.8**	**99.7**	**100.0**	**101.0**	**102.8**	**105.7**
GDP IPI (Basic Prices) percentage change	**1.2%**	**1.3%**	**1.4%**	**0.4%**	**1.1%**	**1.9%**	**2.6%**
GDP IPI (Purchasers' Prices) percentage change	**1.3%**	**1.4%**	**0.9%**	**0.3%**	**1.0%**	**1.8%**	**2.8%**
CPI percentage change	**1.2%**	**2.1%**	**1.3%**	**-2.3%**	**-0.7%**	**2.0%**	**3.4%**

3.8 Production and cost components of value added by industry

Table 9 below shows the production components (gross value added, gross output and intermediate consumption) and cost/income components (compensation of employees, consumption of fixed capital, operating surplus and other net taxes on production) by industry. Gross output is defined as the total value of goods and services produced by an establishment (basically sales). Gross output can be used by businesses to gauge their market share in a particular industry. Intermediate consumption refers to the goods and services that are used up in the production process, excluding fixed assets as its consumption is recorded as consumption of fixed capital. The gross value added is the excess of the gross output over the intermediate consumption. GDP via the production approach is the sum of the value added of all entities operating in the economy. GDP via the income approach is calculated as the sum of the compensation of employees, operating surplus/mixed income, consumption of fixed capital and taxes on production and imports less subsidies on production and imports.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN

TABLE 9: PRODUCTION AND COST COMPONENTS OF VALUE ADDED AT CURRENT BASIC & PURCHASERS' PRICES 2018 (CI$'000)

INDUSTRY	Production Components			Cost/Income Components			
	Gross Value Added[1, 1a, 1b]	Gross Output	Intermediate Consumption	Compensation of Employees	Operating Surplus/Mixed Income	Consumption of Fixed Capital[2]	Taxes less Subsidies on Production
01 Agriculture & Fishing	17,876.3	25,716.2	7,839.9	7,829.7	8,915.8	727.0	403.8
02 Mining & Quarrying	10,149.6	21,695.6	11,546.0	7,149.3	991.6	1,598.0	410.6
03 Manufacturing	39,435.8	101,028.3	61,592.4	22,410.5	13,478.4	2,551.6	995.4
04 Electricity, Gas & Air Conditioning Supply	66,772.9	175,107.9	108,335.0	12,618.8	24,154.8	28,476.8	1,522.4
05 Water Supply, Sewerage & Waste Management	38,576.1	66,399.7	27,823.6	15,970.1	14,693.9	7,303.0	609.2
06 Construction	177,132.0	587,726.5	410,594.5	133,816.5	27,386.5	4,272.0	11,656.9
07 Wholesale & Retail Trade	280,916.9	427,065.1	146,148.2	131,859.2	110,593.0	24,899.9	13,564.9
08 Transport & Storage	153,899.9	281,269.9	127,370.0	96,298.9	41,139.3	13,968.0	2,493.8
09 Hotels & Restaurants	249,810.9	512,514.2	262,703.3	150,460.9	86,536.9	5,294.7	7,518.4
10 Information & Communication	121,817.2	212,529.7	90,712.5	50,556.6	39,500.6	20,171.2	11,588.7
11 Financial & Insurance Services	1,440,014.4	2,666,231.9	1,226,217.5	369,120.5	796,884.4	31,397.9	242,611.7
12 Real Estate Activities	368,935.0	645,936.6	277,001.6	56,050.2	258,068.9	53,107.1	1,708.8
13 Professional, Scientific & Technical Activities	606,638.9	820,672.3	214,033.4	414,414.8	114,498.1	7,454.8	70,271.2
14 Administrative & Support Service Activities	114,877.3	156,520.4	41,643.1	81,646.0	21,403.3	6,655.4	5,172.7
15 Public Administration & Defense	241,190.4	358,299.7	117,109.3	223,724.9	0.0	17,210.9	254.6
16 Education Services	102,112.7	139,776.4	37,663.7	92,335.4	2,816.4	6,493.9	467.1
17 Human Health & Social Work	160,693.4	240,499.3	79,806.0	127,293.6	22,044.5	8,089.0	3,266.3
18 Other Services	126,269.8	203,192.0	76,922.2	62,920.4	54,303.5	5,964.1	3,081.9
Total	4,317,119.5	7,642,181.8	3,325,062.3	2,056,476.1	1,637,409.8	245,635.2	377,598.3
GDP at Current Basic Prices/Total	**4,317,119.5**			**4,317,119.5**			
Add: Taxes Less Subsidies on Products	280,497.6						
GDP at Current Purchasers' Prices	**4,597,617.1**						

Notes

1. Discrepancies between the total and the sum of the components are due to rounding

1a. Gross Value Added (Production) = Gross Output - Intermediate Consumption

1b. Gross Value Added (Income) = Compensation of Employees + Operating Surplus/Mixed income + Consumption of Fixed Capital + Taxes less Subsidies on Production

2. Accounting depreciation is used as a proxy for Consumption of Fixed Capital

4. GROSS DOMESTIC PRODUCT ESTIMATES-THE INCOME APPROACH

4.1 GDP and rate of growth of GDP at purchasers' prices by income

Cayman Islands' GDP at current purchasers' prices for 2018 stood at CI$4,597.6 million. This represents another year of positive performance growing by a 7.1 percent when compared to the CI$4,294.1 million posted for 2017. This follows on the 5.0 percent and 4.3 percent growth registered in 2017 and 2016, respectively. The components of GDP by income and their rates of growth are shown in Tables 10a and 10b below. Table 10b shows that all income components increased in 2018 led by operating surplus/mixed income (10.8%), followed by taxes less subsidies (net taxes) on production and imports (9.9%), compensation of employees (4.2%), and consumption of fixed capital (0.9%).

TABLE 10a: GROSS DOMESTIC PRODUCT (GDP) BY INCOME AT CURRENT PRICES (CI$'000)

Type of Income	2013	2014	2015	2016[R]	2017[R]	2018
Compensation of Employees (COE)	1,722,182.8	1,775,238.5	1,841,704.3	1,905,078.6	1,973,414.6	2,056,476.1
Operating Surplus\Mixed Income	1,227,565.1	1,262,375.0	1,322,772.1	1,381,001.3	1,478,431.1	1,637,409.8
Consumption of Fixed Capital	213,070.9	224,443.5	223,939.2	230,292.0	243,488.7	245,635.2
Taxes less Subsidies on Production and Imports	508,663.2	540,305.8	535,041.5	574,713.6	598,736.5	658,095.9
Gross Domestic Product at Purchasers' Prices	**3,671,482.0**	**3,802,362.8**	**3,923,457.0**	**4,091,085.5**	**4,294,070.9**	**4,597,617.1**

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TABLE 10b: PERCENTAGE GROWTH of GDP BY INCOME AT CURRENT PURCHASERS' PRICES

Type of Income	Percentage Growth					
	2013	2014	2015	2016[R]	2017[R]	2018
Compensation of Employees (COE)	2.5	3.1	3.7	3.4	3.6	4.2
Operating Surplus\Mixed Income	(2.1)	2.8	4.8	4.4	7.1	10.8
Consumption of Fixed Capital	1.3	5.3	(0.2)	2.8	5.7	0.9
Taxes less Subsidies on Production and Imports	18.0	6.2	(1.0)	7.4	4.2	9.9
Gross Domestic Product at Purchasers' Prices	**2.7**	**3.6**	**3.2**	**4.3**	**5.0**	**7.1**

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Total compensation of employees (COE)[15] amounted to CI$2,056.5 million in 2018, increasing from CI$1,973.4 in 2017. The 4.2 percent growth in 2018 represents an uptick in the rate of expansion when compared to the 3.6 percent realized in 2017 and continues the upward trajectory since 2011. The growth in total compensation in 2018 is

[15]COE is defined as the total remuneration, in cash or in kind, payable by an enterprise to an employee in return for work done by the latter during the accounting period.

underpinned by the 9.9 percent increase in the number of employed persons, which moved to 44,887 from 40,856 in 2017.[16]

Operating surplus/mixed income[17] registered the most significant growth of all the income components in 2018, growing by 10.8 percent and outpacing the 7.1 percent growth posted in 2017. Operating surplus increased for the fifth consecutive year in 2018, a trend that goes back to 2014. The growth suggests that businesses are continuing to capture the benefits of the current upswing in the economy.

Consumption of fixed capital[18] increased marginally in 2018 (0.9%), continuing on the 5.7 percent and 2.8 percent posted in 2017 and 2016, respectively. This reverses the 0.2 percent decline posted in 2015.

Taxes (less subsidies) on production and imports[19] in 2018 grew by 9.9 percent after growing by 4.2 percent in 2017. The accelerated rate of growth in the net taxes component of GDP emanated from, among other things, an increase in the receipt from import duties, tourist accommodation charges and stamp duty on land transfers.

4.2 Contribution to GDP at purchasers' prices

TABLE 11: PERCENTAGE CONTRIBUTION to GDP BY INCOME AT CURRENT PRICES

Type of Income	2013	2014	2015	2016[R]	2017[R]	2018
Compensation of Employees (COE)	46.9	46.7	46.9	46.6	46.0	44.7
Operating Surplus\Mixed Income	33.4	33.2	33.7	33.8	34.4	35.6
Consumption of Fixed Capital	5.8	5.9	5.7	5.6	5.7	5.3
Taxes less Subsidies on Production and Imports	13.9	14.2	13.6	14.0	13.9	14.3
Gross Domestic Product at Purchasers' Prices	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

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The share of COE declined to 44.7 percent of GDP in 2018 from 46.0 percent in 2017. The results in 2018 represent the third consecutive year that the share of COE in GDP has declined and is the lowest level it has been since 2006. The declining share stems from the expansion in GDP, outpacing the growth in COE.

[16]Table 10.01b Compendium of Statistics 2018 (pg. 95)

[17]Operating Surplus is the measure of the surplus accruing from production. Mixed income is a combination of operating surplus and implicit remuneration for work done by owner.

[18]Consumption of fixed capital is the decline, during the course of the accounting period, in the current value of the stock of fixed and intangible assets owned and used by a producer as a result of physical deterioration, normal obsolescence or normal accidental damage.

[19]This includes import duties, hotel occupancy tax, business and professional licences, building permit fees, property tax, stamp duties, etc.

The second-largest contribution (35.6%) came from operating surplus/mixed income, with a total value of CI$1,637.4 million in 2018 (see Table 10a). This component posted the highest growth rate (10.8%) in 2018, which led to an increase in share from 34.4 percent in 2017.

The share of net taxes increased in 2018 after declining in 2017. Net tax accounted for 14.3 percent of GDP in 2018 up from 13.9 percent in 2017 and 14.0 percent in 2016.

Consumption of fixed capital declined slightly to 5.3 percent in 2018 from 5.7 percent in 2017 and 5.6 percent in 2016.

4.3 Income components of GDP at purchasers' prices

4.3.1 Compensation of employees (COE)

Table 12 below shows the breakdown of total compensation by industry in the Cayman Islands for the period 2013-2018.

TABLE 12: COMPENSATION OF EMPLOYEES (CI$'000)						
INDUSTRY	**2013**	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**
Agriculture & Fishing	5,895.8	6,373.5	6,877.7	7,367.7	7,665.8	7,829.7
Mining & Quarrying	5,902.9	5,660.8	6,030.6	6,327.1	6,777.0	7,149.3
Manufacturing	18,105.8	19,044.0	20,277.1	21,718.1	21,406.8	22,410.5
Electricity, Gas & Air Conditioning Supply	12,320.4	13,029.4	12,141.6	12,355.3	12,405.3	12,618.8
Water Supply, Sewerage & Waste Management	20,262.7	20,188.9	14,763.9	14,974.5	15,046.7	15,970.1
Construction	110,705.3	113,487.5	121,868.7	125,492.2	126,616.4	133,816.5
Wholesale & Retail Trade	107,385.6	112,556.5	118,789.2	124,110.8	129,781.2	131,859.2
Transport & Storage	79,583.9	81,952.4	86,370.6	92,581.9	94,588.7	96,298.9
Hotels & Restaurants	120,716.7	123,488.1	127,738.2	132,622.0	138,794.4	150,460.9
Information & Communication	47,307.0	48,078.9	49,037.7	50,744.2	52,881.7	50,556.6
Financial & Insurance Services	336,386.4	335,187.0	340,654.6	350,914.8	358,885.3	369,120.5
Real Estate Activities	44,410.8	46,302.4	47,894.4	49,469.3	51,364.0	56,050.2
Professional, Scientific & Technical Activities	348,746.3	366,608.3	378,599.9	383,544.0	400,715.7	414,414.8
Administrative & Support Service Activities	68,323.8	70,986.9	73,293.7	75,975.8	78,591.8	81,646.0
Public Administration & Defense	171,189.7	174,214.9	187,529.1	197,934.4	209,813.6	223,724.9
Education Services	75,523.5	77,369.3	81,671.9	85,647.0	87,976.0	92,335.4
Health and Social Work	97,170.4	106,006.1	111,927.5	114,804.6	119,348.0	127,293.6
Other Services	52,245.7	54,703.7	56,238.0	58,495.0	60,756.3	62,920.4
TOTAL	**1,722,182.8**	**1,775,238.5**	**1,841,704.3**	**1,905,078.6**	**1,973,414.6**	**2,056,476.1**

R-revised

The distribution of total compensation in the Cayman Islands was dominated by the following three industries in 2018:

- Professional, scientific & technical activities (mainly legal and accounting services) with CI$414.4 million or 20.2 percent of total compensation, declining from 20.3 percent in 2017;
- The financial & insurance services industry with CI$369.1 million in compensation or 17.9 percent of the total compensation, down from the 18.2 percent posted in 2017; and
- Public administration & defense with CI$223.7 million or 10.9 percent of total compensation. This represents an increase in contribution from the 10.6 percent realized in 2017.

The three above-mentioned industries accounted for 49.0 percent of the total compensation generated in the Cayman Islands in 2018. This represents a slight decline from 49.1 percent in 2017, which is underpinned by the decline in the contributions of two of the top three industries. Hotel & restaurant services experienced the largest gain in contribution, moving from 7.0 percent in 2017 to 7.3 percent in 2018. The most significant decline in contribution was posted by the financial & insurance services industry.

4.3.2 Operating surplus/mixed income

TABLE 13: OPERATING SURPLUS AND MIXED INCOME (CI$'000)						
INDUSTRY	**2013**	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**
Agriculture & Fishing	5,757.0	6,325.2	7,005.1	7,950.3	8,576.8	8,915.8
Mining & Quarrying	391.2	403.5	752.9	1,547.1	948.7	991.6
Manufacturing	7,742.8	9,027.4	8,886.7	10,133.9	11,595.5	13,478.4
Electricity, Gas & Air Conditioning Supply	17,829.0	16,686.3	20,892.2	24,248.5	21,558.1	24,154.8
Water Supply, Sewerage & Waste Management	10,235.7	12,177.0	14,079.1	15,360.8	14,236.0	14,693.9
Construction	5,461.5	7,734.2	8,600.5	15,201.8	21,375.5	27,386.5
Wholesale & Retail Trade	83,064.9	85,236.6	85,775.3	88,028.1	93,142.3	110,593.0
Transport & Storage	29,448.9	35,497.8	38,499.1	35,507.7	36,289.1	41,139.3
Hotels & Restaurants	41,188.2	53,806.5	62,072.3	66,543.4	74,788.3	86,536.9
Information & Communication	24,037.5	21,364.4	28,375.2	32,953.5	33,165.9	39,500.6
Financial & Insurance Services	630,846.6	643,149.8	672,031.4	674,713.5	729,392.9	796,884.4
Real Estate Activities	245,678.0	245,502.8	242,007.3	251,271.2	258,088.1	258,068.9
Professional, Scientific & Technical Activities	60,041.2	59,270.4	65,783.4	80,116.8	89,320.4	114,498.1
Administrative & Support Service Activities	13,969.7	14,524.5	14,854.4	16,267.1	18,542.2	21,403.3
Public Administration & Defense	-	-	-	-	-	-
Education Services	1,289.7	863.3	622.7	2,352.4	1,174.4	2,816.4
Health and Social Work	11,379.0	6,963.4	7,775.2	14,037.4	16,958.6	22,044.5
Other Services	39,204.1	43,842.1	44,759.2	44,767.7	49,278.1	54,303.5
TOTAL	**1,227,565.1**	**1,262,375.0**	**1,322,772.1**	**1,381,001.3**	**1,478,431.1**	**1,637,409.8**

R-revised

Financial & insurance services accounts for the largest share of operating surplus/mixed income of CI$796.9 million in 2018. The second-largest share was recorded by the real estate activities (CI$258.1 million), followed by professional, scientific & technical activities (CI$114.5 million), and wholesale & retail trade with CI$110.6 million.

The four largest contributors to operating surplus/mixed income in 2018 accounted for 78.2 percent of the total. This represents a decline compared to the 79.1 percent recorded in 2017 and 79.2 percent in 2016.

4.3.3 Consumption of fixed capital

TABLE 14: CONSUMPTION OF FIXED CAPITAL (CI$'000)						
INDUSTRY	**2013**	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**
Agriculture & Fishing	615.0	637.1	634.5	661.6	686.4	727.0
Mining & Quarrying	1,437.5	1,487.9	1,462.7	1,482.4	1,633.3	1,598.0
Manufacturing	2,337.6	2,332.5	2,496.7	2,405.6	2,535.5	2,551.6
Electricity, Gas & Air Conditioning Supply	21,336.4	20,759.3	22,220.8	25,029.7	26,226.4	28,476.8
Water Supply, Sewerage & Waste Management	5,892.6	5,881.9	5,071.2	5,573.8	7,297.0	7,303.0
Construction	2,943.0	3,018.2	3,417.4	3,551.3	4,044.5	4,272.0
Wholesale & Retail Trade	21,267.9	23,552.8	23,666.2	23,869.6	24,280.7	24,899.9
Transport & Storage	10,590.2	11,274.0	11,223.5	11,601.3	13,314.5	13,968.0
Hotels & Restaurants	5,459.3	5,837.8	5,619.1	5,554.9	5,568.4	5,294.7
Information & Communication	17,963.7	23,109.5	20,364.2	19,157.0	20,812.8	20,171.2
Financial & Insurance Services	27,299.4	26,800.2	27,286.6	28,421.0	29,977.7	31,397.9
Real Estate Activities	49,905.9	50,986.0	51,023.4	51,545.6	54,328.6	53,107.1
Professional, Scientific & Technical Activities	10,697.6	10,903.0	10,510.4	10,514.1	8,653.7	7,454.8
Administrative & Support Service Activities	4,892.5	5,387.5	5,905.6	6,123.3	6,450.6	6,655.4
Public Administration & Defense	13,898.3	14,063.5	14,667.0	15,253.4	17,202.6	17,210.9
Education Services	6,070.4	6,069.9	6,070.2	6,096.7	6,608.5	6,493.9
Health and Social Work	6,650.7	8,095.8	8,122.5	7,551.8	7,909.7	8,089.0
Other Services	3,812.8	4,246.6	4,177.4	5,899.2	5,958.0	5,964.1
TOTAL	**213,070.9**	**224,443.5**	**223,939.2**	**230,292.0**	**243,488.7**	**245,635.2**

R-revised

As presented in Table 14 above, the largest amounts of consumption of fixed capital (i.e. depreciation) in 2018 occurred in real estate services (CI$53.1 million) due to the level of fixed assets involved in the activity. This is followed by financial & insurance services (CI$31.4 million), electricity, gas & air conditioning supply services (CI$28.5 million), wholesale and retail trade activities (CI$24.9 million), and information and communication services (CI$20.2 million). The share of depreciation for electricity services and information and communication services is disproportionately large relative to their share of GDP because of the capital-intensive nature of these activities.

4.3.4 Taxes less *subsidies on production and imports*

TABLE 15: TAXES less SUBSIDIES ON PRODUCTION AND IMPORTS (CI$'000)						
INDUSTRY	**2013**	**2014**	**2015**	**2016[R]**	**2017[R]**	**2018**
Other Taxes less Subsidies on Production	305,373.4	333,824.2	331,888.9	351,575.7	371,265.9	377,598.3
Agriculture & Fishing	251.0	275.8	340.6	362.6	394.6	403.8
Mining & Quarrying	435.4	339.0	357.0	385.5	426.1	410.6
Manufacturing	960.3	1,020.9	947.2	912.9	952.3	995.4
Electricity, Gas & Air Conditioning Supply	2,442.9	1,709.1	1,790.7	1,895.3	1,745.6	1,522.4
Water Supply, Sewerage & Waste Management	667.2	598.5	577.3	624.1	651.0	609.2
Construction	6,801.6	7,631.7	8,244.7	8,771.4	10,683.3	11,656.9
Wholesale & Retail Trade	10,375.3	10,150.1	11,143.1	12,664.3	13,696.8	13,564.9
Transport & Storage	1,511.0	1,602.3	1,708.2	2,134.4	2,363.7	2,493.8
Hotels & Restaurants	5,465.7	5,704.1	6,829.5	7,307.9	7,637.3	7,518.4
Information & Communication	11,337.8	11,369.3	11,522.2	12,200.3	13,238.3	11,588.7
Financial & Insurance Services	209,702.6	230,293.2	223,914.9	232,862.1	237,569.0	242,611.7
Real Estate Activities	1,384.3	1,396.7	1,498.2	1,587.4	1,655.8	1,708.8
Professional, Scientific & Technical Activities	45,396.2	51,534.2	52,386.7	58,631.9	67,732.0	70,271.2
Administrative & Support Service Activities	3,527.7	4,083.7	4,351.6	4,739.1	5,331.5	5,172.7
Public Administration & Defense	151.6	157.4	199.4	134.1	198.4	254.6
Education Services	359.9	405.5	393.3	421.2	447.3	467.1
Health and Social Work	1,727.4	2,409.1	2,708.5	2,896.1	3,366.6	3,266.3
Other Services	2,875.6	3,143.6	2,976.0	3,045.2	3,176.4	3,081.9
Taxes less Subsidies on Products	203,289.8	206,481.6	203,152.6	223,137.9	227,470.6	280,497.6
TOTAL	**508,663.2**	**540,305.8**	**535,041.5**	**574,713.6**	**598,736.5**	**658,095.9**

R-revised

Table 15 shows two data sets:

1. Other taxes on production net of other subsidies on production charged to industries; and
2. Taxes net of subsidies charged to buyers of products and imports.

There was a notable decline in the share of net other taxes on production in total taxes resulting from the decline in this component coupled with the increase in the value of net taxes on products. The share of net other taxes on production contracted to 57.4 percent of the total in 2018 from 62.0 percent in 2017. The value of net taxes on production in 2018 was CI$377.6 million, moving from CI$371.3 million in 2017. This increase is due, in part to higher revenue generated from some financial service licences (e.g. other company fees-exempt, partnership fees, mutual fund administrator's fee, etc.) notwithstanding the decline in work permit fees.

The industry breakdown of other taxes on production shows that financial and insurance services accounted for 64.3 percent of the total in 2018, increasing from the 64.0 percent in 2017. Despite the marginal increase in the share in 2018, it remains below the 66.2 percent posted in 2016. That notwithstanding, the activity remains a significant revenue generator for the government.

5. GROSS DOMESTIC PRODUCT ESTIMATES-THE EXPENDITURE APPROACH

5.1 Introduction

GDP by expenditure (GDPE) constitutes all final expenditures by households and government, investments and exports minus imports. In other words, GDPE measures GDP as the sum of the final purchases of goods and services. Added to final purchases is the value of exports, which represents goods and services produced domestically and sold to non-resident households and businesses. Imports are subtracted as they represent goods and services produced by other economies. GDPE represents the third approach to calculating GDP in the Cayman Islands, adding to the other two approaches, i.e. GDP by the production approach (GDPP) and GDP by the income approach (GDPI) as presented earlier in Chapters 3 and 4. See Appendix A1.5 for a more detailed explanation of GDPE and the compilation methodology.

5.2 GDP by expenditure (GDPE)

The estimated nominal GDP (calculated using the expenditure approach) for the Cayman Islands grew to CI$4,559.8 million in 2018 from the CI$4,348.0 million recorded for 2017. This represents a continued expansion from the CI$4,100.2 million recorded in 2016 and CI$3,923.5 million in 2015. The performance in 2018 resulted from growth in two of the four components GDPE, i.e. final consumption expenditure (FCE) and gross fixed capital formation (GFCF). However, the increase was tempered by a decline in net exports and to a lesser extent changes in inventories.

Table 16 below presents a detailed disaggregation of the components of nominal GDPE with results from 2015-2018. Based on the table, the largest expenditure component of the 2018 nominal GDPE for the Cayman Islands was household final consumption expenditure (CI$2,336.5 million). Net exports contributed the second-largest share to nominal GDPE at CI$1,024.6 million. This was followed by gross fixed capital formation (CI$726.9 million), final consumption expenditure of general government (CI$435.9 million), final consumption expenditure of NPISH (CI$34.7 million) and changes in inventories (CI$1.2 million).

CAYMAN ISLANDS GROSS DOMESTIC PRODUCT BY EXPENDITURE				
TABLE 16: GDP BY EXPENDITURE AT CURRENT PURCHASERS' PRICES (CI$'000)				
Expenditure Components	**2015**	**2016**	**2017**	**2018**
Final Consumption Expenditure:	**2,483,963.6**	**2,603,872.5**	**2,689,453.8**	**2,807,097.1**
Households	2,089,115.0	2,179,271.8	2,244,417.5	2,336,488.5
General Government	365,201.6	394,453.1	412,705.7	435,891.8
Non-Profit Institutions Serving Households	29,647.0	30,147.6	32,330.5	34,716.8
Gross Fixed Capital Formation:	**538,113.1**	**560,227.8**	**605,569.3**	**726,869.6**
Buildings and Infrastructure	286,395.4	304,225.0	319,145.2	365,970.1
Machinery and Equipment	123,243.7	103,202.7	111,054.1	128,425.6
Transport Equipment	26,712.3	28,072.8	39,436.7	43,051.1
Office and Computing Machinery	21,553.1	25,690.3	27,807.0	44,417.2
Other Capital Goods[1]	80,208.7	99,036.9	108,126.3	145,005.6
Changes in Inventories	**2,132.0**	**2,864.4**	**11,740.3**	**1,203.8**
Net Exports:	**899,248.2**	**933,235.0**	**1,041,258.7**	**1,024,606.4**
Exports of Goods and Services[2]	2,522,673.9	2,621,032.8	2,910,309.1	3,062,314.9
Less Imports of Goods and Services	1,623,425.6	1,687,797.7	1,869,050.4	2,037,708.5
Statistical Discrepancy	**0.0**	**(9,114.3)**	**(53,951.2)**	**37,840.3**
GDP by Expenditure at Purchasers' Prices	**3,923,457.0**	**4,100,199.8**	**4,348,022.0**	**4,559,776.9**
GDP by Production at Purchasers' Prices	**3,923,457.0**	**4,091,085.5**	**4,294,070.9**	**4,597,617.1**

Notes:

1. Other capital goods include cultivated biological assets, intellectual property products, cost of ownership transfer on non produced assets and acquisitions less disposal of valuables.

2. Total exports here deviates from the total exports published in the BOP report as the figure here excludes goods under merchanting which is currently excluded from the GDP by production estimates as the data was not available during the 2015 base year estimates.

The table also shows a comparison of GDP calculated using the production approach, which is the reference methodology used to compile GDP for the Cayman Islands. The table shows the discrepancy between GDPE and the reference methodology (GDPP).[20]

[20]The discrepancy is due to the wide variety of data sources that are used to compile GDPP and GDPE and the fact that any error in any source will lead to a difference between the GDPP and GDPE results. The discrepancy is attached to the GDPE as (based on data sources) the GDPP estimates are relatively more robust and hence is used as the reference estimates for the Cayman Islands.

Table 17 shows estimated values of expenditure on real (inflation-adjusted) GDP, which grew to CI$4,308.1 million in 2018 from the CI$4,158.6 million recorded for 2017, CI$4,052.7 million in 2016 and CI$3,923.5 million in 2015. Similar to the nominal values, real household final consumption expenditure dominates as the largest single expenditure item reaching CI$2,306.2 million in 2018. This was followed by real net exports (CI$864.3 million), real gross fixed capital formation (CI$689.2 million), final consumption expenditure of general government (CI$414.5 million), final consumption expenditure of NPISH (CI$32.8 million) and changes in inventories (CI$1.1 million).

CAYMAN ISLANDS GROSS DOMESTIC PRODUCT BY EXPENDITURE

TABLE 17: GDP BY EXPENDITURE AT CONSTANT PURCHASERS' PRICES, 2015=100 (CI$'000)

Expenditure Components	2015	2016	2017	2018
Final Consumption Expenditure:	**2,483,963.6**	**2,601,781.7**	**2,651,199.2**	**2,753,519.5**
Households	2,089,115.0	2,183,000.0	2,221,330.9	2,306,238.4
General Government	365,201.6	388,739.6	397,939.2	414,458.1
Non-Profit Institutions Serving Households	29,647.0	30,042.1	31,929.0	32,823.0
Gross Fixed Capital Formation:	**538,113.1**	**568,801.7**	**596,478.8**	**689,195.2**
Buildings and Infrastructure	286,395.4	302,935.5	309,278.9	330,286.8
Machinery and Equipment	123,243.7	104,774.6	112,773.5	128,198.1
Transport Equipment	26,712.3	28,300.0	39,721.5	43,057.3
Office and Computing Machinery	21,553.1	28,327.0	32,934.9	53,745.3
Other Capital Goods[1]	80,208.7	104,464.6	101,769.9	133,907.6
Changes in Inventories	**2,132.0**	**2,764.9**	**11,078.8**	**1,146.2**
Net Exports:	**899,248.2**	**879,303.1**	**899,878.0**	**864,281.9**
Exports of Goods and Services	2,522,673.9	2,556,608.5	2,715,148.6	2,791,553.6
Less Imports of Goods and Services	1,623,425.6	1,677,305.4	1,815,270.6	1,927,271.7
Statistical Descrepancy	**0.0**	**(2,075.2)**	**17,612.9**	**40,437.2**
GDP by Expenditure at Purchasers' Prices	**3,923,457.0**	**4,052,651.4**	**4,158,634.8**	**4,308,142.8**
GDP by Production at Purchasers' Prices	**3,923,457.0**	**4,050,576.1**	**4,176,247.7**	**4,348,580.0**

Notes:

1. Other capital goods include cultivated biological assets, intellectual property products, cost of ownership transfer on non produced assets and acquisitions less disposal of valuables.

5.3 GDPE rates of growth by component

Table 18 shows the growth in the nominal values of the expenditure components of GDP. All components posted positive performances over the 2016-2018 years except for changes in inventories and net exports, which both declined in 2018. Contributing to the overall performance in 2018 was the growth in HFCE (4.1%), final consumption expenditure of general government (5.6%), final consumption expenditure of NPISH (7.4%), GFCF (20.0%), exports of goods and services (5.2%) and imports of goods and services (9.0%). Counterbalancing the growth in the other expenditure components was the decline in the value changes in inventories (89.7%).

CAYMAN ISLANDS GROSS DOMESTIC PRODUCT BY EXPENDITURE			
TABLE 18: RATE OF GROWTH OF GDP BY EXPENDITURE AT CURRENT PRICES (CI$'000)			
Expenditure Components	**Percentage Growth**		
	2016	**2017**	**2018**
Final Consumption Expenditure:	4.8	3.3	4.4
Households (HFCE)	4.3	3.0	4.1
General Government	8.0	4.6	5.6
Non-Profit Institutions Serving Households	1.7	7.2	7.4
Gross Fixed Capital Formation (GFCF)	4.1	8.1	20.0
Changes in Inventories	34.4	309.9	(89.7)
Net Exports	3.8	11.6	(1.6)
Exports of Goods and Services	3.9	11.0	5.2
Less Imports of Goods and Services	4.0	10.7	9.0

The growth rates of the expenditure component of GDP in real (inflation-adjusted) terms are shown in Table 19. The decline in changes in inventory (89.7%) was counterbalanced by growth in HFCE (3.8%), final consumption expenditure of general government (4.2%), final consumption expenditure of non-profit institutions serving households (2.8%), GFCF (15.5%), exports of goods and services (2.8%) and imports of goods and services (6.2%)

CAYMAN ISLANDS GROSS DOMESTIC PRODUCT BY EXPENDITURE			
TABLE 19: RATE OF GROWTH OF GDP BY EXPENDITURE AT CONSTANT PRICES, 2015=100 (CI$'000)			
Expenditure Components	**Percentage Growth**		
	2016	**2017**	**2018**
Final Consumption Expenditure:	4.7	1.9	3.9
Households	4.5	1.8	3.8
General Government	6.4	2.4	4.2
Non-Profit Institutions Serving Households	1.3	6.3	2.8
Gross Fixed Capital Formation	5.7	4.9	15.5
Changes in Inventories	29.7	300.7	(89.7)
Net Exports	(2.2)	2.3	(4.0)
Exports of Goods and Services	1.3	6.2	2.8
Less Imports of Goods and Services	3.3	8.2	6.2

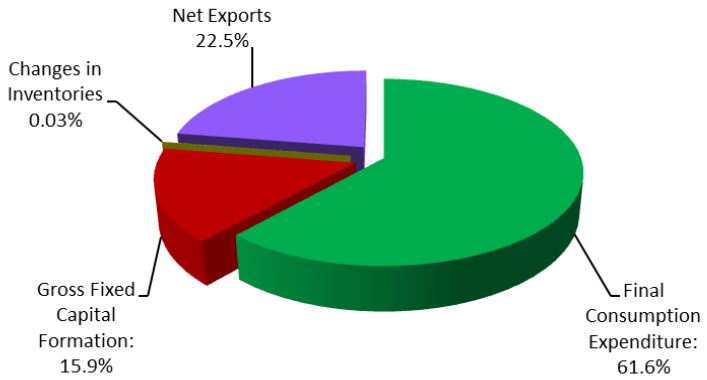
5.4 Contribution to GDPE by component

Table 20 shows the contributions of the individual expenditure components to the overall nominal GDPE from 2015 to 2018.

CAYMAN ISLANDS GROSS DOMESTIC PRODUCT BY EXPENDITURE				
TABLE 20: PERCENTAGE CONTRIBUTION TO GDPE AT CURRENT PRICES (CI$'000)				
Expenditure Components	**2015**	**2016**	**2017**	**2018**
Final Consumption Expenditure:	63.3	63.5	61.9	61.6
Households (HFCE)	53.2	53.2	51.6	51.2
General Government and NPISH	10.1	10.4	10.2	10.3
Gross Fixed Capital Formation (GFCF)	13.7	13.7	13.9	15.9
Changes in Inventories	0.1	0.1	0.3	0.0
Net Exports	22.9	22.8	23.9	22.5
GDP by Expenditure at Purchasers' Prices	**100.0**	**100.0**	**100.0**	**100.0**

The table shows the dominance of HFCE as the main contributor to nominal GDPE. This is reinforced by the graphical display of the component shares for 2018 shown in Figure 5. HFCE accounted for 61.6 percent of nominal GDPE in 2018, slightly down from the 61.9 percent registered in 2017. This however, is a noteworthy decline from the 63.5 and 63.3 percent posted in 2016 and 2015, respectively. Net exports maintained its relative ranking as the second-largest contributor to GDPE despite marginal fluctuations in its contribution. This component posted a contribution of 22.5 percent in 2018, declining from the 23.9 percent in 2017, 22.8 percent in 2016 and 22.9 percent in 2015. GFCF continued to increase its share of GDPE to 15.9 percent in 2018 after posting 13.9 percent in 2017 and 13.7 percent in both 2016 and 2015. The contribution of the aggregate of general government and NPISH remained stable over the period posting 10.3 percent in 2018, following on the 10.2, 10.4 and 10.1 percent in 2017, 2016 and 2015, respectively. Figure 5 provides a graphical display of the share of the expenditure components of nominal GDP for 2018.

Fig 5: Expenditure Component of Nominal GDP, 2018



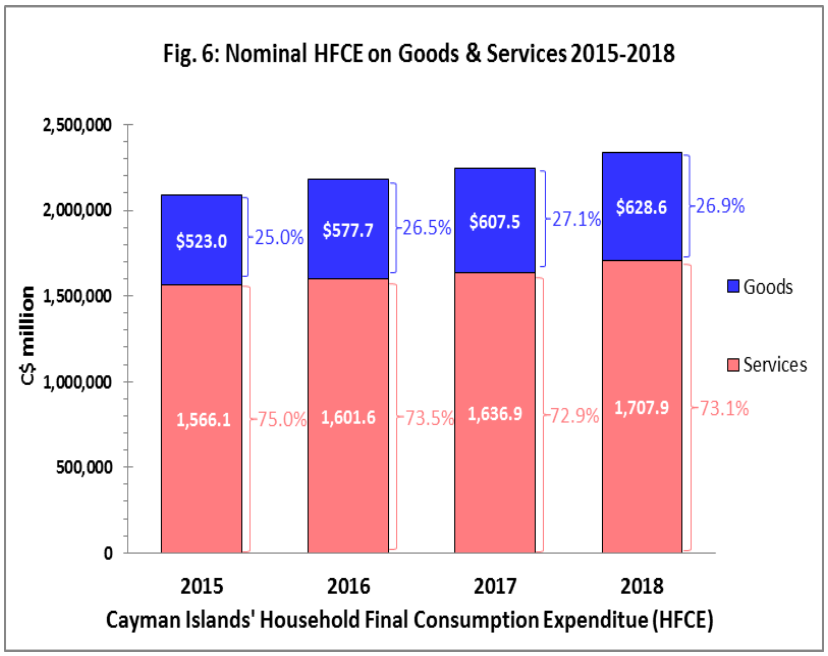
5.5 Expenditure components of GDP

This section examines in detail the performance of the individual expenditure components on GDP.

5.5.1 Household final consumption expenditure (HFCE)

HFCE consists of expenditures incurred by resident households on the consumption of goods and services, whether that expenditure is incurred within the economic territory or abroad.

Fig. 6 shows a disaggregation of nominal HFCE on goods and services. The graph shows there were only minor changes in the split between expenditure on goods versus expenditure on services. For 2018, Cayman residents purchased a total of CI$628.6 million in goods. This represents an increase on the CI$607.5 million in 2017, CI$577.7 million in 2016 and CI$523.0 million in 2015. The household expenditure on goods for 2018 was again dominated by food & beverage purchases similar to the expenditure for 2015 to 2017. This was followed by purchases of motor vehicles & other transport equipment, clothing & shoes, gasoline & diesel, electronic & electrical equipment, etc.



Expenditure on goods represented 26.9 percent of total HFCE in 2018, a decline from the 27.1 percent realized in 2017. Despite the decline, the 2018 share of goods expenditure represents an increase from the 26.5 percent and 25.0 percent posted in 2016 and 2015, respectively.

In terms of the expenditure on services, Cayman residents consumed CI$1,707.9 million in services in 2018 when compared to CI$1,636.9 million in 2017. This follows on the CI$1,601.6 million in service consumption in 2016 and CI$1,566.1 million in 2015.

Expenditure on services was dominated by actual & imputed rent, financial & insurance services, medical services, hotel & restaurant services, and transport services.

The purchase of services dominates the composition of HFCE, accounting for 73.1 percent in 2018. This is a marginal uptick in the 72.9 percent in 2017 but is lower than the 73.5 percent in 2016 and 75.0 percent in 2015.

5.5.2 Government final consumption expenditure (GFCE)

GFCE is derived as the output of general government less any sales of goods and services by the government. It includes government purchases of goods and services from the businesses and distributed as social transfers to households.

In nominal terms, GFCE amounted to CI$435.9 million in 2018. This shows a continued increase on the CI$412.7 million in 2017, CI$394.5 million in 2016 and CI$365.2 million in 2015.[21]

5.5.3 Final consumption expenditure of NPISH

Non-profit institutions serving households (NPISH) are private, voluntary, non-market producers who provide goods or services to households for free or at prices below market prices. Similar to GFCE, the FCE of NPISH is derived as the output of these entities less any sales of goods and services and is compiled from their production accounts from the GDPP compilation.

In 2018, final consumption expenditure of NPISH increased to CI$34.7 million from CI$32.3 million in 2017, CI$30.1 million in 2016 and CI$29.6 million in 2015.[21] This points to the continued economic contribution of these institutions.

5.5.4 Gross fixed capital formation (GFCF)

Gross fixed capital formation (GFCF) relates to the addition less disposal of fixed assets. For businesses and government, fixed assets are those used repeatedly or continuously in the production process over multiple accounting periods. For households, fixed assets relate to additions to the stock of residential buildings and major improvements to the existing stock.

[21]See Table 16

Figure 7 below presents the growth in GFCF in both nominal and real terms for 2015 to 2018. The graph shows the year on year increase in the current price GFCF for the review period. There was a notable increase in 2018 with current price GFCF moving to CI$726.9 million from CI$605.6 million in 2017, an increase of 20.0 percent. This followed on the 8.1 percent and 4.1 percent growth in 2017 and 2016, respectively.

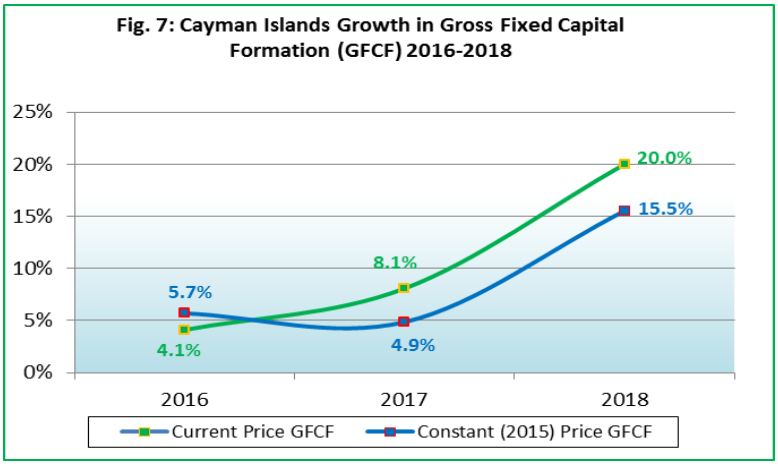


Table 21 and Figure 8 provide a disaggregation of GFCF by type and show the value of the components and their contribution to total GFCF. It disaggregates GFCF into buildings & other infrastructure, machinery & equipment, transport equipment, office & computing machinery, and other capital goods.

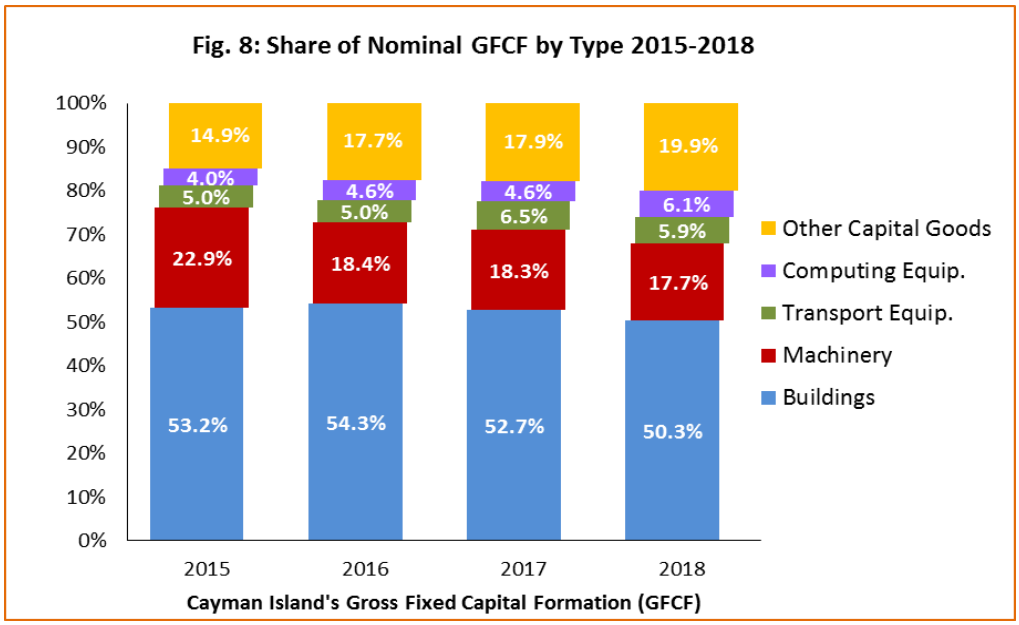
CAYMAN ISLANDS GROSS DOMESTIC PRODUCT BY EXPENDITURE

TABLE 21: GROSS FIXED CAPITAL FORMATION BY TYPE AT CURRENT PRICES (CI$'000)

Expenditure Component	2015	2016	2017	2018
Gross Fixed Capital Formation:	**538,113.1**	**560,227.8**	**605,569.3**	**726,869.6**
Buildings and Infrastructure	286,395.4	304,225.0	319,145.2	365,970.1
Machinery and Equipment	123,243.7	103,202.7	111,054.1	128,425.6
Transport Equipment	26,712.3	28,072.8	39,436.7	43,051.1
Office and Computing Machinery	21,553.1	25,690.3	27,807.0	44,417.2
Other Capital Goods[1]	80,208.7	99,036.9	108,126.3	145,005.6

Notes:

1. Other capital goods include cultivated biological assets, intellectual property products, cost of ownership transfer on non produced assets and acquisitions less disposal of valuables.



Buildings & infrastructure continues to be the largest component of GFCF despite the decline in share in 2018. The decline in share was notwithstanding the increase in the value of the component as the growth in building & infrastructure was outpaced by the growth in GFCF. In 2018, the value of the addition to the stock of buildings & infrastructure amounted to CI$365.9 million (50.3%), which was up from CI$319.9 million (52.7%) in 2017. This follows on the CI$304.2 million (54.3%) in 2016 and CI$286.4 million (53.2%) in 2015.

The value of the addition to the stock of machinery & equipment (compiled from merchandize imports data) amounted to CI$128.4 million in 2018. This adds to the CI$111.1 million in 2017, CI$103.2 million in 2016 and CI$123.2 million in 2015. Machinery and equipment slipped to third place in the ranking in terms of share, accounting for 17.7 percent of nominal GFCF in 2018. However, it maintained its second-place ranking in 2017 (18.3%), 2016 (18.4%) and 2015 (22.9%).

The value of transport equipment in GFCF represents expenditure by businesses on this type of asset. The component maintained fourth place in terms of share for the period 2015-2017 but slipped to fifth place in 2018. GFCF relating to transport equipment posted a value of CI$43.1 million (5.9%) in 2018, CI$39.4 million (6.5%) in 2017, CI$28.1 million (5.0%) in 2016 and CI$26.7 million (5.0%) in 2015.

The share of GFCF for office & computing machinery remained stable in fifth place 2015-2017 but rose to fourth place in 2018. The jump to fourth place in 2018 resulted from

the increase to CI$44.4 million (6.1%) from CI$27.8 million (4.6%). This follows on the CI$25.7 million (4.6%) in 2016 and CI$21.6 million (4.0%) in 2015.

Other capital goods increased its relative share to 19.9 percent (CI$145.0 million) in 2018 compared to the 17.9 percent (CI$108.1 million) registered in 2017. The increase in 2018 resulted in a jump from third to second place in the relative ranking. The component posted value of CI$99.0 million (17.7%) in 2016 and CI$80.2 million (14.9%) in 2015.

5.5.5 Changes in inventories

The derivation of the value changes in inventories is based on estimates of stock changes (of goods produced or purchased) reported by businesses on the annual business survey. The nominal value of changes in inventories was estimated at CI$1.2 million in 2018 down from the CI$11.7 million in 2017, CI$2.9 million in 2016 and CI$2.1 million in 2015.[22] The spike in 2017 primarily resulted from activity in construction services.

5.5.6 Net export of goods and services (X-M)

Net export refers to exports less imports of goods and services. Imports and exports have opposite effects on GDP. Exports add to GDP and imports subtract from GDP.

CAYMAN ISLANDS GROSS DOMESTIC PRODUCT BY EXPENDITURE

TABLE 22: EXPORT & IMPORTS AT CURRENT PRICES (CI$'000)

Expenditure Components	2015	2016	2017	2018
Net Exports:	**899,248.2**	**933,235.0**	**1,041,258.7**	**1,024,606.4**
Exports of Goods and Services	2,522,673.9	2,621,032.8	2,910,309.1	3,062,314.9
Exports of Goods[1]	163,739.2	177,337.9	167,016.4	180,459.2
Exports of Services	2,358,934.7	2,443,694.8	2,743,292.8	2,881,855.7
Imports of Goods and Services	1,623,425.6	1,687,797.7	1,869,050.4	2,037,708.5
Imports of Goods	821,029.3	852,621.8	914,762.1	1,058,597.1
Imports of Services	802,396.3	835,175.9	954,288.4	979,111.4

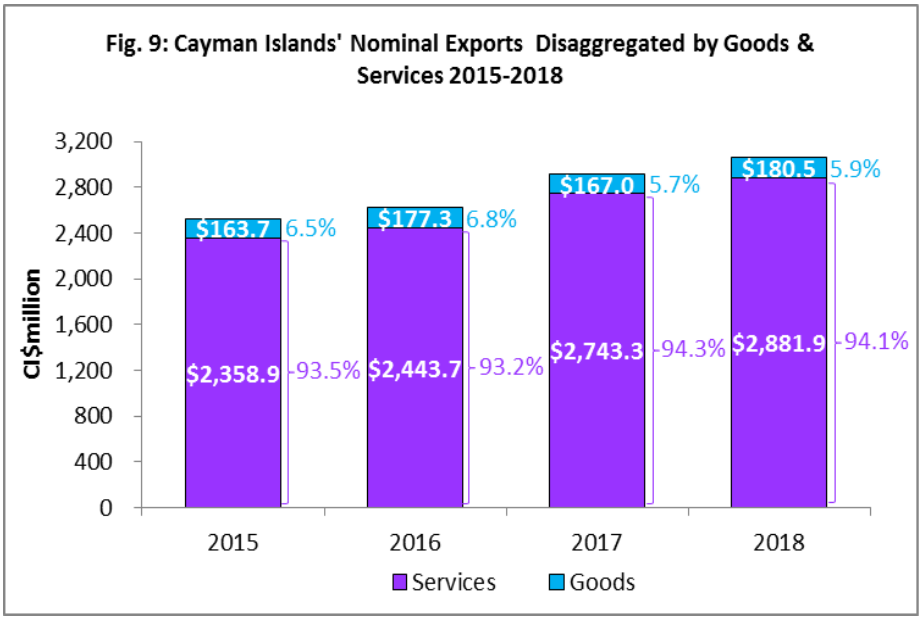
Notes:

1. Exports of goods here deviates from the figure published in the BOP report as the figure here excludes goods under merchanting which is currently excluded from the GDP by production estimates as the data was not available during the 2015 base year estimates.

[22] See Table 16

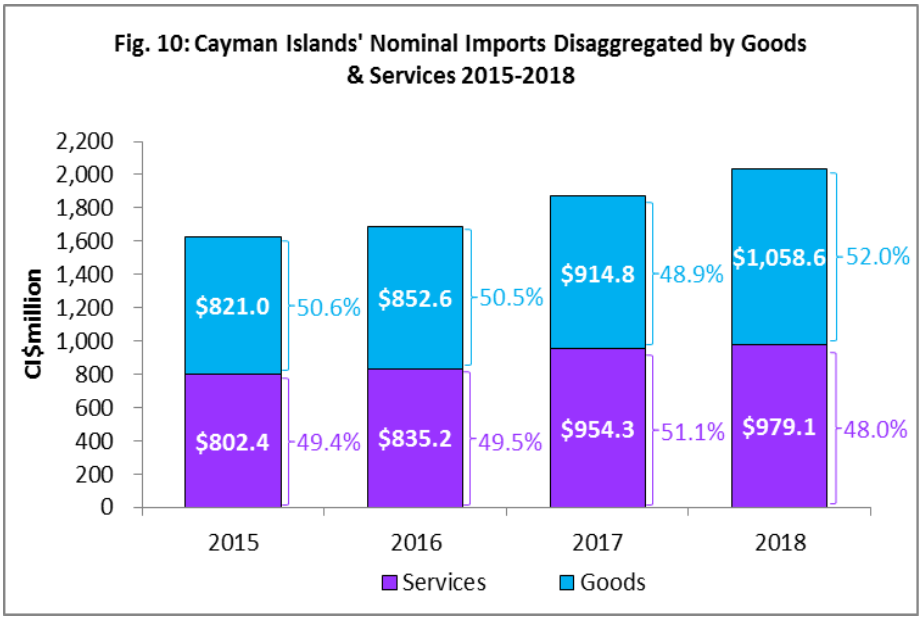
Net exports of goods and services at current prices for 2018 was CI$1,024.6 million resulting from exports of CI$3,062.3 million and imports of CI$2,037.7 million. This represents a 1.6 percent decline in net exports from the CI$1,041.3 million in 2017, which resulted from exports of CI$2,910.3 million and imports of CI$1,869.1 million. Total exports and imports increased year on year for the entire review period.

Figure 9 shows the disaggregation of total exports into goods and services in terms of value and share. Export of services for 2018 amounted to CI$2,881.9 million, increasing on the CI$2,743.3 million in 2017, CI$2,443.7 million in 2016 and CI$2,358.9 million in 2015. The bar graph shows the clear domination of services in total exports due to the Cayman Islands being a service dominated economy in terms of GDP. Services accounted for 94.1 percent of total exports in 2018. The 94.1 percent share in 2018 represents a continued strengthening of the dominance of services when compared to 94.3 percent in 2017, 93.2 percent in 2016 and 93.5 percent in 2015.



Total export of goods from the Cayman Islands reached CI$180.5 million in 2018. This represents an increase on the CI$167.0 million realized in 2017, CI$177.3 million in 2016 and CI$163.7 million in 2015. The share of goods in total export was 5.9 percent in 2018, 5.7 percent in 2017, 6.8 percent in 2016 and 6.5 percent in 2015. Notwithstanding the continued increase in the value of goods export, its share has generally declined over the review period as the growth in goods is outpaced by the growth in service exports. The export of goods is dominated by the on-island purchases of visitors, i.e. tourist expenditure on goods. Goods exported would also include the purchase of aviation fuel (for local suppliers) by foreign airlines.

The disaggregation of total imports into goods imports and service imports reflect a more equal split when compared to total exports. Services accounted for 48.0 percent of imports in 2018 after declining in share from 51.1 percent in 2017, 49.5 percent in 2016 and 49.4 percent in 2015. There was CI$979.1 million in services imported by Cayman Islands' resident individuals and companies in 2018. This was up from CI$954.3 million in 2017, CI$835.2 million in 2016 and CI$802.4 million in 2015.



The share of goods in total imports increase over the period to 52.0 percent in 2018 from 48.9 percent in 2017, 50.5 percent in 2016 and 50.6 percent in 2015. The importation of all goods in 2018 aggregated to CI$1,058.6 million. This was a notable increase from the CI$914.8 million in 2017, CI$852.6 million in 2016 and CI$821.0 million in 2015.

APPENDIX 1: KEY CONCEPTS AND DEFINITIONS

A1.1 Classifications in the National Accounts

The main building blocks in the system of national accounts are classifications. These are used in different ways and situations throughout the system. The system of national accounts involves a large number of economic transactions in goods and services that are undertaken by a number of economic agents. The function of the national accounts is to organize and group the basic units of transactions to provide meaningful information. The classification system also guarantees comparability over time and internationally.

The Cayman Islands' national accounts use the International Standard Industrial Classification of all Economic Activities (ISIC) for the classifications of industries, as follows (see also Appendix 3):

i. Agriculture, Forestry and Fishing
ii. Mining and Quarrying
iii. Manufacturing
iv. Electricity, Gas, Steam and Air Conditioning Supply
v. Water Supply; Sewerage, Waste Management and Remediation Activities
vi. Construction
vii. Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles
viii. Transport and Storage
ix. Accommodation and Food Service Activities
x. Information and Communication
xi. Financial and Insurance Activities
xii. Real Estate Activities
xiii. Professional, Scientific and Technical Activities
xiv. Administrative and Support Service Activities
xv. Public Administration and Defense; Compulsory Social Security
xvi. Education
xvii. Health and Social Work
xviii. Other Services

It should be noted that establishments owned or controlled by government are excluded from the industry "Public Administration and Defense" using the following criteria:

(a) if the prices they charge for the goods and services they produce are economically significant;
(b) if they are operated and managed like a corporation; and

(c) if they have a complete set of accounts such that their operating surplus, savings, assets and liabilities can be separately identified and measured. These establishments are included in the industries in which their principal activity falls.

A1.2 Measuring Gross Domestic Product (GDP) using the Production Approach

This approach calculates GDP as the sum of the value added of all industries in the economy. This is the difference between gross output (essentially sales) of producers and the value of their intermediate inputs. Intermediate inputs refer to goods and services that are used up in the production process, excluding fixed assets whose consumption is recorded as consumption of fixed capital, i.e. purchases of commodities that are used up in the production of other commodities:

Gross Output – Intermediate Input = Value Added

The production account for industries allows for the compilation of GDP using the production approach. It records the production of goods and services as defined by the production boundary. The output generated from the production process is recorded as a resource on the left-hand side of the 'T' account and the inputs used up in the production process is recorded as a use on the right-hand side of the account. The value added is the balancing item for this account.

Production Account of a Producer

Uses (Debit)		Resources (Credit)	
Intermediate consumption	30	Gross Output	100
		Market	*95*
		For own final use	*5*
		Other non-market	*0*
Gross Value Added	70		

A1.2.1 Valuation of output, intermediate consumption and value added

Output can be valued at either basic or producers' prices. The SNA 2008 recommends basic prices for the valuation of output; intermediate consumption should be valued at purchasers' price.

GDP estimates in this report are presented in both basic prices and purchaser's (market) prices. The main difference between basic and purchasers' price is the taxes less subsidies (or net taxes) on products. A tax on a product is a tax that is payable per unit of some good or service. The tax may be a specific amount of money per unit or a specified percentage of the value of the goods or services. In the Cayman Islands, taxes on products

are primarily taxes and duties on imports, stamp duty and other taxes on product excluding taxes and duties on imports (e.g. hotel occupancy tax).

Basic price is defined as the amount receivable by the producer from the purchase of a unit of good or service less any tax payable, plus any subsidy receivable as a consequence of its production or sale. Separately invoiced transport charges by the producer are excluded.

Producer's price (net of all valued tax (VAT)) is the amount receivable by the producer from the purchase of a unit of good or service less any VAT invoiced to the purchaser. Separately invoiced transport charges by the producer are excluded.

Purchaser's value is the amount paid by the purchaser, excluding any deductible VAT but includes any transport charges paid separately by the purchaser for delivery of the goods.

The above three concepts are related as follows:

- Basic Price
  plus taxes on product excluding VAT
  less subsidies on product
- Equals Producer's Price
  plus trade and transport margins
  plus non- deductible VAT
- Equals Purchaser's Price

It should be noted that in the Cayman Islands, there is no VAT; hence, producers' prices is the same as purchasers' price if there are no trade and transport margins.

A1.3 Measuring Gross Domestic Product at Constant Prices

The change in GDP results from the contribution of (i) the quantity of goods and services produced and (ii) the price at which these goods and services are sold. GDP at current prices reflects both these contributions as the production of the period is measured at the prices at that period. GDP at constant prices, on the other hand, reflects only the change in quantities produced. This indicator measures the production of the period at the prices of another period referred to as the base year.

GDP at constant price is a measure of the real growth, which takes place within an economy. The rate of change of GDP at constant prices from period to period is often used to assess the economic performance of a country as it shows only the change in the volume of goods and services produced as the price effect is removed. In theory,

correcting for inflation refers to the process of revaluing current production using the average prices prevailing in the base year as follows:

GDP at current prices = $Quantity_t \times \Pr ice_t$

(Current quantities of goods and services produced multiplied by their current prices)

GDP at constant prices = $Quantity_t \times \Pr ice_0$

(Current quantities of goods and services produced multiplied by their prices in a year chosen as the base year)[23].

Movement in GDP at constant prices over time indicates whether the economy is growing or is in decline. An increase in GDP at constant prices means that output is growing faster than the rate of inflation and hence the economy is considered to be growing. The reverse would be true for a fall in GDP at constant prices.

The explanation given above is an oversimplification of the actual computation but is necessary to convey what the process is intended to accomplish. The final estimates of GDP contain different components, which all have to be adjusted for inflation. Even though the process of deflation varies depending on the industry, the process always entails the compilation of indices. The deflation process can be effected by either directly deflating the current price estimates with a price index (usually the CPI) or by extrapolating the base year estimates by a volume index.[24] The two approaches might also be used simultaneously.

The process recommended by the SNA to estimate GDP at constant prices is to deflate both gross output and intermediate consumption separately and then subtract the latter from the former. The recommendation is that estimations be made for both gross output and intermediate consumption at constant prices; taking the difference would yield GDP at constant prices. This is referred to as double deflation, though intuitively appealing, it is difficult to apply in practice as it requires detailed data of good quality on price indicators for both gross output and intermediate inputs.

The alternative to double deflation is the use of a single indicator to extrapolate the GDP at constant prices or deflate GDP at current prices. Although single indicators are unsuitable in industries where the relationship between value-added, gross output and intermediate consumption vary significantly from one year to the other, they are less

[23] The current base year for the Cayman Islands System of National Accounts is 2015.
[24] In the base year the current and constant estimates are the same.

sensitive to errors in other industries and hence extensively used.[25] The single indicator method was the method of choice for the Cayman Islands and hence is discussed below in more details.

The single indicator method used in the Cayman Islands is the extrapolation of base year value added by a volume index of gross output. Where relevant quantity data were available, the volume index was calculated directly. In the absence of quantity data, the volume index was calculated indirectly by deflating gross output at current prices by the appropriate price index from the CPI. This approach tends to be the most frequently used single indicator and is based on the assumption that the ratio of value added to gross output in current prices remains unchanged at constant prices. This assumption might hold in the short run but becomes progressively less relevant in the long run hence periodic rebasing of the constant price estimates is recommended.

Another single indicator approach is the deflation of current value added by a price index of gross output. SNA defines a price index as "an average of the proportionate changes in the prices of a specified set of goods or services between two periods of time." This approach is referred to as single deflation because only the current value added is deflated and not the gross output and the intermediate consumption. The ideal price index for this approach would be one based on wholesale or producer prices. However, these types of indices are not always available; as a result, indices based on retail or consumer prices (e.g. CPI) are used. The disadvantage with using the CPI (in this case) is that the CPI relates specifically to price movements of goods and services purchased by households for consumption and so should not be used as a deflator for gross output destined for non-household consumption.

Extrapolation of value added by a volume index of employment is another single indicator method employed in the Cayman Islands System of National Accounts. This method entails the use of proxy indicators of gross output, such as hours worked, or numbers employed to extrapolate gross value added in the base year. These proxy indicators are most often used in services industries where it is difficult to specify direct volume measures. The weakness of this method is that it assumes constant labour productivity between the base year and subsequent years. This assumption inevitably leads to mismatches between employment and gross output hence the necessity for frequent revisions. According to the accepted convention, where this method is employed an explicit assumption should be made about growth in labour productivity of about 1% per year.

[25]The agriculture industry is one such industry where the relationship between gross output, intermediate consumption and valued added vary significantly from one year to another due to disease, weather conditions, etc.

Material input is another proxy indicator that can be used to extrapolate base year gross value added. This volume index should comprise of the most important material inputs to the production process. This method is usually employed in industries with heterogeneous output (e.g. construction, garment manufacturing, manufacturing of bakery products, etc.). This method also necessitates frequent rebasing to account for changes in the ratio of gross output to value added and inputs.

A1.4 Measuring Gross Domestic Product (GDP) using the Income Approach

The income approach measures GDP as the sum of all income accruing to the factors of production. With this approach, GDP is calculated as the sum of the compensation of employees, operating surplus/mixed income, consumption of fixed capital and taxes on production and imports less subsidies on production and imports.

GDP = Compensation of Employees
+ Consumption of Fixed Capital
+ Operating Surplus
+ Taxes on production and imports
- Subsidies on production and imports

The definitions employed in the calculation of each of the above components are discussed below.

A1.4.1 Compensation of employees (COE)

This is defined as the total remuneration (in cash and kind) paid by employers to employees for work done during the accounting period. Compensation consists of two components:

1. Gross wages and salaries
2. Employers' social contributions

A1.4.1a Gross wages and salaries

This is defined to include all payments which employees receive in respect of their work. Included are:

(a) Commissions, tips, bonuses and gratuities;
(b) Allowances such as housing, uniform and travelling;
(c) Wages paid during vacation and sick leave;
(d) Overtime payments; and
(e) Wages and salaries in kind.

The following items are among the consumption goods and services provided by the employer to the employee without charge or at a markedly reduced cost, which are of clear and direct benefit to the employees as consumers and are therefore included as part of wages and salaries:

(a) Meal and drinks;
(b) Housing services that can be used by all members of the household;
(c) Uniforms that employees choose to wear frequently outside of the workplace as well as at work;
(d) Sports, recreation and holiday facilities for employees and their families;
(e) Transportation to and from work, car parking; and
(f) Nurseries for the children of employees.

A1.4.1b Employers' social contribution

This includes contributions paid by employers on behalf of their employees to social security schemes, private pension funds and insurances schemes. These are geared towards providing benefits for the employees if circumstances affect their ability to earn income, such as sickness, accidents, redundancy, retirement, etc. These social contributions may be actual or imputed.

- Employers' actual social contributions - These consists of social contributions paid directly by employers for the benefit of their employees to social security funds, insurance enterprises or other instituted units responsible for the administration and management of social insurance schemes.

- Employers' imputed social contributions - Some employers provide social benefits directly to their employees or dependents out of their resources without the use of an insurance enterprise or special pension fund. In this case, an amount equal in value to the amount of social contributions that would be needed to secure the entitlement should therefore be imputed.

A1.4.2 Consumption of fixed capital

This is the cost of production associated with the decline in the value of fixed assets used in the production process. It can be viewed in general terms as the replacement cost of the fixed assets used up in the process of production.

The SNA recommends that this be valued using the actual or estimated prices of fixed assets prevailing at the time the production takes place but not the prices at the time the fixed asset was originally acquired. However, in the case of the Cayman Islands depreciation is used as a proxy for the consumption of fixed capital.

A1.4.3 Taxes on production and imports

Taxes are compulsory, unrequited payments made to the government by other institutional units. Taxes are said to be unrequited because the government does not directly provide a specific good or service in return for the payments made. There are two types of taxes on production and imports:

1. Taxes on products are taxes on goods and services that become payable when the goods are produced, sold, imported or otherwise disposed of by their producers. The following are categories of this type of tax:
   a) Taxes and duties on import
   b) Other taxes on product excluding taxes and duties on import (e.g. hotel occupancy tax).

2. Other taxes on production are all taxes excluding taxes on products that establishments incur as a result of engaging in production (e.g. business and professional licences, property tax, building permit fees, etc.).

A1.4.4 Subsidies on production and imports

Subsidies are current unrequited transfers that government makes to resident producers and importers. These transfers or payments are based on the levels of production and/or the quantity and value of goods and services produced, imported or sold. Subsidies are seen as negative taxation as producers receive them rather than pay them. There are two types of subsidies on production and imports:

1. Subsidies on products - subsidies payable per unit of a good or service, e.g. fertilizer sold to farmers;
2. Other subsidies on production - subsidies excluding subsidies on products that are paid to resident establishments as a result of engaging in production.

A1.4.5 Operating surplus/mixed income

Operating surplus/mixed income is the income accruing to the production process before deducting interest charges, rent or property incomes payable. It is equivalent to the excess of the value added over the sum of the compensation of employers, net taxes on production, and allowances for the consumption of fixed capital, i.e.:

Operating Surplus = Gross Value Added – (Compensation of Employees + net Taxes on Production and Imports + allowance for the Consumption of Fixed Capital)

A1.5 Measuring Gross Domestic Product (GDP) using the Expenditure Approach

GDP by expenditure (GDPE) is the third approach to calculating GDP in the Cayman Islands, along with the Production and Income approach. GDPE measures GDP as the sum of the final purchases of goods and services. Added to final purchases is the value of exports as they represent goods and services produced domestically and sold to non-resident households and businesses. Imports are subtracted as they represent goods and services produced by other economies.

The expenditure approach is a method of measuring GDP by calculating all spending throughout the economy. A more detailed explanation shows GDPE as the sum of (a) household and government spending on goods and services; (b) investment in fixed capital (construction of buildings & other infrastructure, machinery and equipment); (c) changes in inventories; and (d) exports less imports of goods and services following the economic formula: **GDPE = C + G + I + (X-M)**, where C represents the consumption expenditure by households (HFCE), G is the consumption expenditure by government (GFCE), "I" represents gross capital formation plus changes in inventories (GCF), X is the value of exports, and M is the value of Imports. The individual components/subgroups comprising GDPE are Final Consumption Expenditure, Gross Fixed Capital Formation, Changes in Inventory and Net Exports.

A1.5.1 Household final consumption expenditure (HFCE)

HFCE consists of expenditures incurred by resident households on the consumption of goods and services, whether that expenditure is incurred within the economic territory or abroad. Technically, this includes purchases of consumer goods and services, value of barter transactions, goods and services received in kind, and goods and services produced and consumed by the same household (e.g. a farmer consuming some of the agricultural products he produced or a dressmaker making a dress for herself). HFCE excludes expenditure on fixed assets in the form of dwellings and on valuables as these are included in capital formation.[26]

For the Cayman Islands, HFCE is estimated using data from a combination of Import data and domestic data collected through the annual business survey. Data collected through sources mentioned above are used to extrapolate the 2015 benchmark estimates, which were compiled from the Household Budget Survey (HBS) in 2015. The HBS was conducted over the 12-month period from January to December 2015. The data from this survey

[26]Valuables are produced goods of considerable value that are not used primarily for purposes of production or consumption but are held as stores of value over time. HFCE includes household expenditure on other fixed assets (other than dwelling and valuables) like motor vehicles, furniture, major appliances, etc.

was classified according to the Classification of Individual Consumption According to Purpose (COICOP).

A1.5.2 Government final consumption expenditure (GFCE)

GFCE is derived as the output of general government less any sales of goods and services by government. It includes government purchases of goods and services from businesses and distributed as social transfers to households. GFCE includes both collective and individual consumption expenditure by government. Individual consumption expenditure includes goods and services provided by government where the benefits can be assigned to individual households or units (e.g. education, health, etc.). Collective consumption refers to goods and services whose benefits are not easily assigned to individual units (e.g. public security, street lighting, etc.). GFCE is derived (with some adjustments) from the production accounts of general government from the compilation of GDPP.

A1.5.3 Final consumption expenditure of NPISH

Non-profit institutions serving households (NPISH) are private, voluntary, non-market producers who provide goods or services to households for free or at prices below market prices. These are separate legal entities with their main resources (apart from those derived from occasional sales) being derived from voluntary contributions in cash or in kind from households in their capacity as consumers, from payments made by general governments, etc. Examples include churches and religious societies, sports and other clubs, trade unions, etc. Similar to GFCE, the FCE of NPISH is derived as the output of these entities less any sales of goods and services and is compiled from their production accounts from the GDPP compilation.

A1.5.4 Gross fixed capital formation (GFCF)

GFCF is measured by the total value of the producers' acquisitions, less disposals of fixed assets. It includes investment in fixed capital by households, businesses and government. GFCF relates to the addition to the available stock of fixed assets and not the change in ownership of the existing stock. That is, the value of building & infrastructure in GFCF represents the addition (in the reporting period) to the existing stock and is not the actual value of the total stock of building & infrastructure as of the end of the period. Business GFCF includes construction of new commercial buildings, major improvements to the existing stock, acquisition less disposal of machinery & equipment, and investment in intangible fixed assets (e.g. computer software, research & development, etc.). GFCF for government includes investment in assets such as roads, schools, hospitals, etc. The machinery & equipment portion of GFCF is compiled using imports of these types of goods

as there is no domestic production. For households, GFCF relates to any addition to the stock of residential buildings and major improvements to the existing stock.

A1.5.5 Changes in inventories

Simply put, the change in inventory is the amount companies add to the inventories of the goods they plan to sell and materials used in the production process. It is calculated as the difference between the closing stocks and opening stocks during the accounting period. Positive changes in inventories add to GDP while negative changes reduce GDP. The underlining concept is that businesses will increase inventories to address an increase in the demand for a certain good. That increase in demand positively contributes to GDP. On the other hand, businesses will reduce inventories when the demand for the good declines; the decline in demand reduces GDP. The change in inventories for the Cayman Islands is based on estimates of stock changes reported by businesses in the annual business survey.

A1.5.6 Net export of goods and services (X-M)

Net export refers to exports less imports of goods and services. Imports and exports have opposite effects on GDP. Exports add to GDP and imports subtract from GDP. Exports consist of sales of domestically produced goods and services to non-residents. Imports consist of the purchase of goods and services by residents from non-resident producers. Data on the export and import of goods is derived from external trade statistics, while the data on the export and import of services is gleaned from the BOP data produced by the ESO.

APPENDIX 2: IMPLEMENTATION OF THE CAYMAN ISLANDS' SNA

A2.1 Introduction

This section provides an overview of the work done in developing the System of National Accounts for the Cayman Islands. It examines the classification system employed in delineating institutional units into specific industries. This is fundamental to the measurement of output and value added by industry. The section also examines the main sources of data used in compiling the estimates. The Annual National Accounts Survey was the main data source and was supplemented by data from government accounts and other administrative sources. The section concludes by examining the estimation techniques employed in deriving gross value added by industry at current and constant prices.

A2.2 Coverage of industries

As indicated in Appendix 1, all active business units were classified according to the International Standard Industrial Classification (ISIC) Revision 4, which is the industrial classification scheme recommended by the SNA 2008 manual.[27] In accordance with SNA 2008 and ISIC guidelines, business units were assigned codes based on their principal economic activity.[28] The ISIC Revision 4 was adapted to accommodate a more detailed dis-aggregation of economic activity. For the most part, estimation and analysis were done at the product group level (5-digit ISIC code). However, some estimation had to be done at the class level (4-digit code) due to data constraints.

The concept of GDP for the economy as a whole is that it should measure the total GVA for all producers resident in the economy. The overall estimate of Cayman Islands' GDP comprises the value added of 18 industries as classified using ISIC Rev. 4. The data shown are the most recent estimates of GDP and include any revisions (to previously published data) due to revised figures obtained from businesses during the most recent Annual National Accounts Survey. In general, figures for the most recent year are to be regarded as preliminary.

[27]The System of National Accounts Manual 2008 (SNA 2008) is the manual that guides the compilation of GDP estimates. It outlines the internationally accepted methodologies and rules that govern the derivation of estimates of GDP. Relevant aspects of SNA 2008 have been incorporated in the Cayman Islands' National Accounts.

[28]The principal activity of a business is the activity whose value added exceeds that of any other activity carried out by the business.

A2.3 Data sources

Gross value added at current and constant prices was compiled using data from a variety of primary and/or secondary sources. Primary sources relate to data collected and compiled by the Economics and Statistics Office (ESO). The main source of primary data was the Annual National Accounts Survey. Other primary data sources were the consumer price index (CPI), Labour Force Survey (LFS), Survey of Living Conditions (SLC) and the Household Budget Survey (HBS). Secondary data sources (i.e. sources external to the ESO) consist mostly of administrative records and data generated as by-products of the administrative process. Revenue and expenditure accounts of government and statutory agencies, merchandise trade data, and specified data from the Cayman Islands Monetary Authority (CIMA) comprised the main secondary data sources.

The Annual National Accounts Survey is designed primarily to collect information from active business units on their income and expenditure. Questionnaires are hand-delivered to business units on Grand Cayman (entities for whom a physical address was available) and mailed to those in Cayman Brac and Little Cayman. The survey was administered to all relevant establishments in ESO's Business Register. Data on government ministries and departments were obtained from government accounting reports.

The consumer price index (CPI) was predominantly used in computing gross value added at constant 2015 prices. The CPI is used in two ways: (1) gross output (at current prices) of some industries is deflated by a relevant price index of CPI items, or groups of items to derive the inflation-adjusted gross output (gross output at constant prices). The series of gross output constant is then used to formulate a volume index which is then used extrapolate base year gross value added to derive gross value added (at constant prices). (2) The gross value added (at current prices) of some activities are deflated directly by a relevant price index of CPI items, or groups of items to derive gross value added (at constant prices). This method is utilized in the absence of relevant volume indicators. The CPI was also used in estimating the current price gross value added of owner-occupied dwellings and fishing industries.

The government accounts comprise a voluminous amount of data that had to be classified, partitioned and adjusted to suit national accounts purposes. Revenue and expenditure data were gathered from the government database and then exported to Excel where it was adjusted for national accounts purposes. The database allows for the generation of reports based on cost centres. Through this process, public administration was identified. Additionally, revenue was classified into three groups: taxes (customs duties, property tax, hotel occupancy tax, cruise ship departure tax, stamp duty, etc.),

sales of goods and services (work permits, departmental sales, etc.) and other revenue (interest, fines and forfeitures, etc.).

A2.4 Revision policy

To improve the System of National Accounts, revisions are undertaken periodically. New and revised data from regular surveys, administrative records, audited financial statements from companies, public sector accounts, etc. are incorporated into the system as they become available. The previous two year's estimates are revised (as necessary) when current-year estimates are being generated except at the completion of a rebasing process where the entire GDP series might be revised.

APPENDIX 3: GDP REBASING

A3.1 Introduction

At its most basic, rebasing is the process of replacing the old base year of the GDP series with a more recent year. This is necessary to adequately capture the continuous structural changes as the economy evolves. The rebasing of the Cayman Islands' GDP series resulted in the real GDP now being expressed in 2015 prices instead of 2007 prices. The rebasing exercise resulted in greater alignment with the latest SNA methodological standards (SNA 2008), inclusion of stockpiled revisions, improvement in coverage, data sources, methodology, and ultimately more robust national accounts data for the Cayman Islands.

A3.2 GDP rebasing explained

The change in GDP results from the contribution of two main effects: the quantity of goods and services produced and the price at which these goods and services are sold. GDP at current prices reflects both these contributions as the production during the period is measured at the prices in that period. GDP at constant prices (real GDP), on the other hand, reflects only the change in quantities produced by keeping the price level constant at base year levels. Thus, real GDP provides a more complete picture of changes in the actual production level of the country as it excludes the changes due to price movements. Since real GDP measures the production of the current period using the price level in the base year, the selection of the specific base year is imperative. Rebasing allows for the change of the base year of the GDP series, which should be done every 5-10 years as per international best-practice.

The base year selected should be a "normal" year, i.e. devoid of any sharp economic changes, which would cause drastic or abnormal fluctuations in prices. Ideally, the base year that is chosen would be one in which there are virtually no sharp fluctuations in prices or major changes in underlying economic conditions, e.g. a year without a major natural disaster.

A3.3 Reasons to rebase the GDP

An economy changes over time. There are continuous changes in consumption patterns, technology, production techniques, available goods and services, etc. These continuous changes mean that the base year price structure and weights become less representative of the current economic situation as time passes. It is therefore necessary to update the base period to reflect these changes and maintain the accuracy and relevance of the estimates of real GDP. Rebasing enables the national accounts to capture the real picture

of the economy by taking account of factors such as relative price movements, and structural changes in production and consumption patterns, which over time may contribute to an under or over estimation of GDP.

The rebasing process also provides an opportunity to incorporate (in the GDP series) methodological and compilation changes, pertinent international recommendations, new and more relevant data sources, changes to product and industry classifications, stockpiled revisions, etc.

A3.4 Rebasing methodology

There are two main methods used to complete the rebasing process, i.e. with or without linking (connecting the new base year series to old base year series), or annual rebasing using chain-linking to connect the two series.

Periodic rebasing without linking involves extrapolation for the entire GDP series at the most detailed level using price indicators based on the new base year prices. The detailed volume series can then be aggregated to compile the new real GDP series with the price structure of the new base year. This approach results in an additive (i.e., components of GDP sum up to total GDP) real GDP series but the historical growth rates are revised for the entire series. This approach is not recommended as it may lead to loss of confidence in the GDP estimates as the historical growth rates are revised whenever the series is rebased.

An improvement on the previous methodology involves extrapolation from the new base year onwards at the most detailed level then aggregating up to the total GDP using the price structure of the new base year. The series prior to the new base year is generated using the price structure from the previous base year. This results in an additive real GDP series and there is no revision of the historical growth rates as in the preceding approach. However, this approach leads to inconsistency in the real GDP series due to the use of different base year prices. This inconsistency results in a break in the GDP series, which coincides with the change in the base year, i.e. there is a break every time the series is rebased. These breaks in the GDP series make it difficult for researchers to do time-series analyses using the GDP series.

Joining the new base year GDP series with the old base year series remedies the problem with the break in the data series. The process of joining the two series is referred to as linking. With linking, the total GDP series and its components are extrapolated backwards (from the new base year) at the most detailed level possible using the real growth rates of GDP and its components. It is important to note that the backward extrapolation is done separately for the total GDP and its components. The real growth rates used in this

case are those derived from the old base year series. This method yields consistent volume measures of GDP as the entire series is expressed in terms of the prices of the current base year. Since the old growth rates are used to extrapolate backward, the old growth rates are preserved and there is no revision to the historical growth rates, which maintains confidence in the GDP series. Despite the major advantages of this rebasing approach, the disadvantage is that the GDP series prior to the base year will not be additive (i.e., components of GDP will not sum up to total GDP) as the total GDP series and its components were extrapolated separately. This is the approach used in rebasing the Cayman Islands' GDP due to the advantage of preserving the historical growth rates of real GDP while yielding consistent volume measures of GDP. These advantages outweigh the downside of non-additivity of the GDP series prior to the new base year.

Annual chain-linking is the approach recommended by SNA 2008, but it is computationally difficult and demands additional resources. According to SNA 2008, *"the computing requirements of deriving annual chain indices……should not be attempted without adequate, tailored software"* (2008 SNA 15.94b, p. 306). The details of the chain-linking methodology are beyond the scope of this report. However, at its most basic, chain-linking involves annual updating of the base year weights to derive real GDP growth rates calculated using weights, which are more representative than those under periodic rebasing.

APPENDIX 4: INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION OF ALL ECONOMIC ACTIVITIES (REVISION 4)

A - Agriculture, Forestry and Fishing

01-Crop and animal production, hunting and related service activities
02-Forestry and logging
03-Fishing and aquaculture

B - Mining and Quarrying

05-Mining of coal and ignite
06-Extraction of crude petroleum and natural gas
07-Mining of metal ores
08-Other mining and quarrying
09-Mining support service activities

C - Manufacturing

10-Manufacture of food products
11-Manufacture of beverages
12-Manufacture of tobacco products
13-Manufacture of textiles
14-Manufacture of wearing apparel
15-Manufacture of leather and related products
16-Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
17-Manufacture of paper and paper products
18-Printing and reproduction of recorded media
19-Manufacture of coke and refined petroleum products
20-Manufacture of chemicals and chemical products
21-Manufacture of pharmaceuticals, medicinal chemical and botanical products
22-Manufacture of rubber and plastics products
23-Manufacture of other non-metallic mineral products
24-Manufacture of basic metals
25-Manufacture of fabricated metal products, except machinery and equipment
26-Manufacture of computer, electronic and optical products
27-Manufacture of electrical equipment
28-Manufacture of machinery and equipment n.e.c.
29-Manufacture of motor vehicles, trailers and semi-trailers
30-Manufacture of other transport equipment
31-Manufacture of furniture
32-Other manufacturing
33-Repair and installation of machinery and equipment

D - Electricity, Gas, Steam and Air Conditioning Supply

35-Electricity, gas, steam and air conditioning supply

E - Water Supply; Sewerage, Waste Management and Remediation Activities

36-Water collection, treatment and supply
37-Sewerage
38-Waste collection, treatment and disposal activities; materials recovery
39-Remediation activities and other waste management services

F - Construction

41-Construction of buildings
42-Civil engineering
43-Specialized construction activities

G - Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles

45-Wholesale and retail trade and repair of motor vehicles and motorcycles
46-Wholesale trade, except of motor vehicles and motorcycles
47-Retail trade, except of motor vehicles and motorcycles

H - Transportation and storage

49-Land transport and transport via pipelines
50-Water transport
51-Air transport
52-Warehousing and support activities for transportation
53-Postal and courier activities

I - Accommodation and Food Service Activities

55-Accommodation
56-Food and beverage service activities

J - Information and Communication

58-Publishing activities
59-Motion picture, video and television programme production, sound recording and music publishing activities
60-Programming and broadcasting activities
61-Telecommunications
62-Computer programming, consultancy and related activities
63-Information service activities

K - Financial and Insurance Activities

64-Financial service activities, except insurance and pension funding
65-Insurance, reinsurance and pension funding, except compulsory social security
66-Activities auxiliary to financial service and insurance activities

L - Real Estate Activities

68-Real estate activities

M - Professional, Scientific and Technical Activities

69-Legal and accounting activities
70-Activities of head offices; management consultancy activities
71-Architectural and engineering activities; technical testing and analysis
72-Scientific research and development
73-Advertising and market research
74-Other professional, scientific and technical activities
75-Veterinary activities

N - Administrative and Support Service Activities

77-Rental and leasing activities
78-Employment activities
79-Travel agency, tour operator, reservation service and related activities
80-Security and investigation activities
81-Services to buildings and landscape activities
82-Office administrative, office support and other business support activities

O - Public Administration and Defence; Compulsory Social Security

84-Public administration and defence; compulsory social security

P - Education

85-Education

Q - Human Health and Social Work Activities

86-Human health activities
87-Residential care activities
88-Social work activities without accommodation

R - Arts, Entertainment and Recreation

90-Creative, arts and entertainment activities
91-Libraries, archives, museums and other cultural activities
92-Gambling and betting activities
93-Sports activities and amusement and recreation activities

S - Other Service Activities

94-Activities of membership organizations
95-Repair of computers and personal and household goods
96-Other personal service activities

T - Activities of Households as Employers; Undifferentiated Goods-and Services-Producing Activities of Households for Own Use

97-Activities of households as employers of domestic personnel
98-Undifferentiated goods- and services-producing activities of private households for own use

U - Activities of Extraterritorial Organizations and Bodies

99-Activities of extraterritorial organizations and bodies