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# THE CAYMAN ISLANDS' SYSTEM OF NATIONAL ACCOUNTS REPORT 2016

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THE ECONOMICS AND STATISTICS OFFICE



<b><u>TABLE OF CONTENTS</u></b>	<b>Page</b>
<b>ACKNOWLEDGEMENT .....</b>	<b><i>i</i></b>
<b>ABBREVIATIONS AND ACRONYMS.....</b>	<b><i>ii</i></b>
<b>1. EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>2. INTRODUCTION.....</b>	<b>4</b>
2.1 Importance of the SNA.....	4
2.2 Key Data Sources.....	5
2.3 Valuation of Gross Domestic Product (GDP).....	5
2.4 Improvement in Methodology.....	5
<b>3. GROSS DOMESTIC PRODUCT ESTIMATES-PRODUCTION APPROACH .....</b>	<b>6</b>
3.1 Overview of GDP at basic and purchasers' prices.....	6
3.2 GDP by industrial origin .....	9
3.3 GDP rates of growth by industry.....	10
3.3.1 <i>Goods-producing industries</i> .....	11
3.3.2 <i>Service-producing industries</i> .....	12
3.4 Contribution to GDP by industry.....	16
3.5 Industry GDP at Current Prices .....	19
3.6 Detailed Value Added by Industry .....	20
3.7 Implicit Price Index by Industry.....	22
3.8 Production and Cost Components of Value Added by Industry .....	23
<b>4. GROSS DOMESTIC PRODUCT ESTIMATES-THE INCOME APPROACH .....</b>	<b>24</b>
4.1 GDP and Rate of Growth of GDP at Purchasers' Prices by Income.....	24
4.2 Contribution to GDP at Purchasers' Prices .....	25
4.3 Income Components of GDP at Purchasers' Prices .....	26
4.3.1 <i>Compensation of employees (COE)</i> .....	26
4.3.2 <i>Operating surplus/mixed income</i> .....	27
4.3.3 <i>Consumption of fixed capital</i> .....	28
4.3.4 <i>Taxes less subsidies on production and imports</i> .....	29
<b>APPENDIX 1: KEY CONCEPTS AND DEFINITIONS .....</b>	<b>31</b>
<b>APPENDIX 2: IMPLEMENTATION OF THE CAYMAN ISLANDS' SNA.....</b>	<b>39</b>
<b>APPENDIX 3: INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION of ALL ECONOMIC ACTIVITIES (Revision 4) .....</b>	<b>41</b>

## ACKNOWLEDGEMENT

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This report was produced by the System of National Accounts (SNA) Unit of the ESO. Some field work assistance was provided by the Survey Staff of the Social Statistics Unit of the ESO. The general support and effort of the ESO staff is acknowledged and greatly appreciated.

**ABBREVIATIONS AND ACRONYMS**

AAC	Aggregate Advisory Committee
AAGR	Average Annual Growth Rate
ANA	Annual National Accounts
ANAS	Annual National Accounts Survey
BEC	Classification by Broad Economic Categories
BR	Business Register
CARTAC	Caribbean Regional Technical Assistance Centre
CIDOT	Cayman Islands Department of Tourism
CIF	Cost, Insurance, Freight
CIMA	Cayman Islands Monetary Authority
CISNA	Cayman Islands System of National Accounts
CI\$	Cayman Islands Dollars
COE	Compensation of Employees
CPI	Consumer Price Index
CRE	Central Register of Establishments
ECLAC	Economic Commission for Latin America and the Caribbean
ESO	Economics and Statistics Office
FISIM	Financial Intermediation Services Indirectly Measured
FOB	Free On Board
GDP	Gross Domestic Product
GO	Gross Output
GVA	Gross Value Added
HBS	Household Budget Survey
IMF	International Monetary Fund
IPI	Implicit Price Index
ISIC	International Standard Industrial Classification of Economic Activity
LFS	Labour Force Survey
NEC	Not Elsewhere Classified
NPISG	Non-Profit Institutions Serving Government
NPISH	Non-Profit Institutions Serving Household
PPI	Producer Price Index
PSPB	Public Sector Pension Board
ROW	Rest of the World
SBU	Simple Blow Up
SITC	Standard International Trade Classification
SNA	System of National Accounts
SR	Sample Ratio
UNSD	United Nation Statistics Division

## 1. EXECUTIVE SUMMARY

- 1.1 The Cayman Islands' System of National Accounts Report 2016 presents the gross domestic product (GDP) estimates for the period 2012–2016. The estimates were calculated using both the production and income approaches. 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 income approach estimates GDP in current purchasers' prices.
- 1.2 Gross Value Added (GVA) is defined as the difference between the gross output (essentially sales) of producers and the value of their intermediate inputs (goods and services that are used up in the production process, excluding fixed assets whose consumption is recorded as consumption of fixed capital).
- 1.3 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 the International Standard Industrial Classification (ISIC) Revision 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 (2016) are to be regarded as preliminary.
- 1.4 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, and other taxes on product excluding taxes and duties on imports (e.g. hotel occupancy tax).
- 1.5 The 2016 nominal (current) basic price GDP for the Cayman Islands stood at CI\$2,963.2 million, resulting in an estimated per capita nominal GDP of CI\$48,314.2.

- 1.6 Real GDP at basic price (i.e. GDP at constant 2007 prices or GDP adjusted for inflation) stood at CI\$2,708.1 million in 2016. The corresponding per capita GDP for 2016 was estimated at CI\$44,155.1.
- 1.7 The domestic economy continued on its upward trajectory in 2016, recording another year of economic expansion. The economy grew by 3.1 percent in 2016 when compared to 2015. This represents the sixth consecutive year of economic expansion adding to the 1.2 percent growth recorded in 2011, 1.3 percent in 2012, 1.5 percent in 2013, 2.3 percent in 2014 and 3.0 percent in 2015. The expansion in 2016 was broad-based with all industries posting growth.
- 1.8 The top six performing industries in terms of the rate of growth in constant price GDP in 2016, are: (i) human health & social work (10.0%); (ii) construction (7.9%); (iii) mining & quarrying (6.2%); (iv) water supply, sewerage & waste management (5.2%); (v) administrative & support services activities which consists mainly of security and car rental services (4.5%); and (vi) electricity, gas & air conditioning supply (4.3%). The financial & insurance services industry posted growth of 1.8 percent in 2016, following on growth of 2.3 percent and 1.0 percent in 2015 and 2014, respectively.
- 1.9 The Average Annual Growth Rate (AAGR) over the five-year period (2012-2016) showed average annual constant price GDP growth of 2.2 percent for the total economy. The highest average expansion over the period was recorded by the human health & social work industry, which posted average growth of 4.7 percent. This was followed by construction (4.4%); administrative & support services activities (3.6%); professional, scientific & technical activities (3.6%); mining & quarrying (3.3%); agriculture & fishing (3.3%); and manufacturing (3.3%). Financial and insurance services expanded by an average rate of 1.4 percent over the period. All industries posted positive average growth rate for the review period (2012-2016) with 12 of the 18 industries registering growth rates higher or equal to the economy average (2.2%). The lowest average expansion (0.9%) was posted by the information and communication industry.
- 1.10 Financial and insurance services (the largest single contributor to real GDP) accounted for 40.5 percent of total GDP in 2016. This represents a continued decline in the contribution of the industry from the 42.2 percent recorded for 2012. The other industries making up the top six contributors in 2016 include: (i) professional, scientific & technical activities, which comprises primarily of legal and accounting services (14.7%); (ii) real estate activities (8.5%); (iii) wholesale & retail trade (8.2%); (iv) public administration & defense which consists primarily of central government operations (7.4%); and (v) hotels and restaurants (5.6%). There was no

change in the relative ranking of the industries within the Cayman Islands' economy in 2016 when compared to 2015.

- 1.11 All income components of GDP recorded growth in 2016 when compared to the 2015. The highest increase was posted by taxes (less subsidies) on production and imports<sup>1</sup> which increased by 6.8 percent to CI\$532.9 million. This was followed by consumption of fixed capital<sup>2</sup> which increased by 5.9 percent to CI\$196.1 million. Compensation of employees<sup>3</sup> increased by 3.4 percent to CI\$1,585.4 million, while operating surplus/mixed income<sup>4</sup> increased by 2.8 percent to CI\$883.4 million.
- 1.12 In terms of share of GDP, total compensation of employees reached 49.6 percent in 2016, declining from 49.8 percent in 2015. Total operating surplus/mixed income reached 27.6 percent of GDP in 2016, down from the 27.9 percent reached in 2015. There were increases in the share of consumption of fixed capital which moved to 6.1 percent in 2016 from 6.0 percent in 2015, and net taxes on production and imports which moved to 16.7 percent from 16.2 percent in 2015.

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<sup>1</sup> Taxes on production and imports consists of:

- a. Taxes on products - taxes on goods and services that become payable when the goods are produced, sold, imported or otherwise disposed of by their producers, e.g. taxes and duties on import and other taxes on products excluding taxes and duties on import (e.g. hotel occupancy tax).
- b. Other taxes on production - all taxes excluding taxes on products that establishments incur as a result of engaging in production (e.g. business and professional licences, building permit fees, property tax, etc.).

<sup>2</sup> 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.

<sup>3</sup> Compensation of employees 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.

<sup>4</sup> Operating Surplus/Mixed income – operating surplus is the measure of the surplus accruing from production. It may be used in macro-economics as a proxy for total pre-tax profit income. The term "mixed income" is used when operating surplus cannot be distinguished from wage income, i.e. mixed income is a combination of operating surplus and implicit remuneration for work done by owner.



## 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 to making an assessment of 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; and

## 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 March to May 2016. 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 product excluding taxes and duties on import (e.g. hotel occupancy tax).

## 2.4 Improvement in Methodology

The System of National Accounts (SNA) is ever evolving, and as such, from time to time there will be adjustments in the methodology used to derive the estimates. This covers the gamut from the refinement of the estimation process to the availability of new and improved data sources. In this vein, the Economics and Statistics Office (ESO) seeks to improve the quality of the GDP estimates as necessary. The estimates in this report benefited from improvements in, and refinements of, the data sources used in the compilation process.

### 3. GROSS DOMESTIC PRODUCT ESTIMATES-PRODUCTION APPROACH

#### 3.1 Overview of GDP at basic and purchasers' prices

The Cayman Islands' System of National Accounts Report 2016 presents the gross domestic product (GDP) estimates for the period 2012-2016.<sup>5</sup> The estimates were calculated using both the production and income approaches. 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.

This section presents a series of tables and figures showing various presentations of the preliminary 2016 estimates of GDP by industry as follows:

- Main aggregates of GDP and the per capita indicators (Table 1);
- GDP at constant prices by industrial origin (Table 2);
- GDP rate of growth at constant prices (Table 3);
- Goods and service-producing industries' contribution to GDP at constant basic prices (Table 4);
- Industry ranking by contribution to GDP at constant (2007) basic prices (Table 5);
- GDP at current basic and purchasers' prices (Table 6);
- Detailed value added by industries (Table 7);
- GDP implicit price index (Table 8); and
- Production and cost components of value added (Table 9).

The Cayman Islands' economy continued on its expansionary path in 2016 posting the sixth consecutive year of economic growth. The total value of goods and services produced in 2016 (as reflected by real GDP) increased by 3.1 percent, a marginal increase on the 3.0 percent growth recorded in 2015. The performance in 2016 represents the most significant annual growth recorded since the economy emerged from recession in 2011. The growth in 2016 resulted in an average annual expansion of 2.2 percent for the five-year period 2012-2016. The continued upward trajectory of the domestic economy speaks to the robustness of the recovery from the impact of the global recession in the latter part of the last decade.

The expansion in 2016 was generated through growth in the goods-producing industries (6.7%) as well as the service industries (2.8%). The performance of the good-producing industries resulted from growth in all areas in the grouping, led by construction services

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<sup>5</sup> GDP by income components is provided for the period 2011-2016.

(7.9%), and mining & quarrying activities (6.2%). As with the goods-producing industries, all areas in the service industries expanded in 2016. This is further evidence of the broad-based performance of the domestic economy in the period. Eight of the fourteen industries categorized as service-producing posted growth rates of 3 percent or higher, with another three growing at 2 or more percent. The growth in the service-producing industries was led by the performance in human health & social work activities (10.0%); water supply and waste management services (5.2%); administrative & support services activities which consists mainly of security and car rental services (4.5%); electricity services (4.3%); and professional, scientific & technical activities which consists primarily of legal and accounting services (4.2%)<sup>6</sup>.

Table 1 below shows the total value of domestic output for the years 2012 to 2016. 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)	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
GDP (Current Basic Prices)	2,575,384.8	2,649,063.7	2,756,707.3	2,860,577.0	2,963,155.8
GDP (Constant Basic 2007 Prices)	2,458,228.8	2,494,624.7	2,551,188.4	2,627,808.0	2,708,078.5
GDP (Current Purchasers' Prices)	2,776,388.0	2,852,353.5	2,977,306.5	3,077,619.6	3,197,861.3
GDP (Constant Purchasers' 2007 Prices)	2,623,775.3	2,657,342.0	2,727,882.0	2,805,166.2	2,904,347.3
Mean Population ('000)	56.125	56.240	56.993	59.054	61.331
Per Capita Indicators (CI\$)	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
GDP (Current Basic Prices)	45,886.6	47,102.8	48,369.2	48,440.0	48,314.2
GDP (Constant Basic 2007 Prices)	43,799.2	44,356.8	44,763.2	44,498.4	44,155.1
GDP (Current Purchasers' Prices)	49,467.9	50,717.5	52,239.9	52,115.3	52,141.0
GDP (Constant Purchasers' 2007 Prices)	46,748.8	47,250.0	47,863.5	47,501.7	47,355.3

Notes:

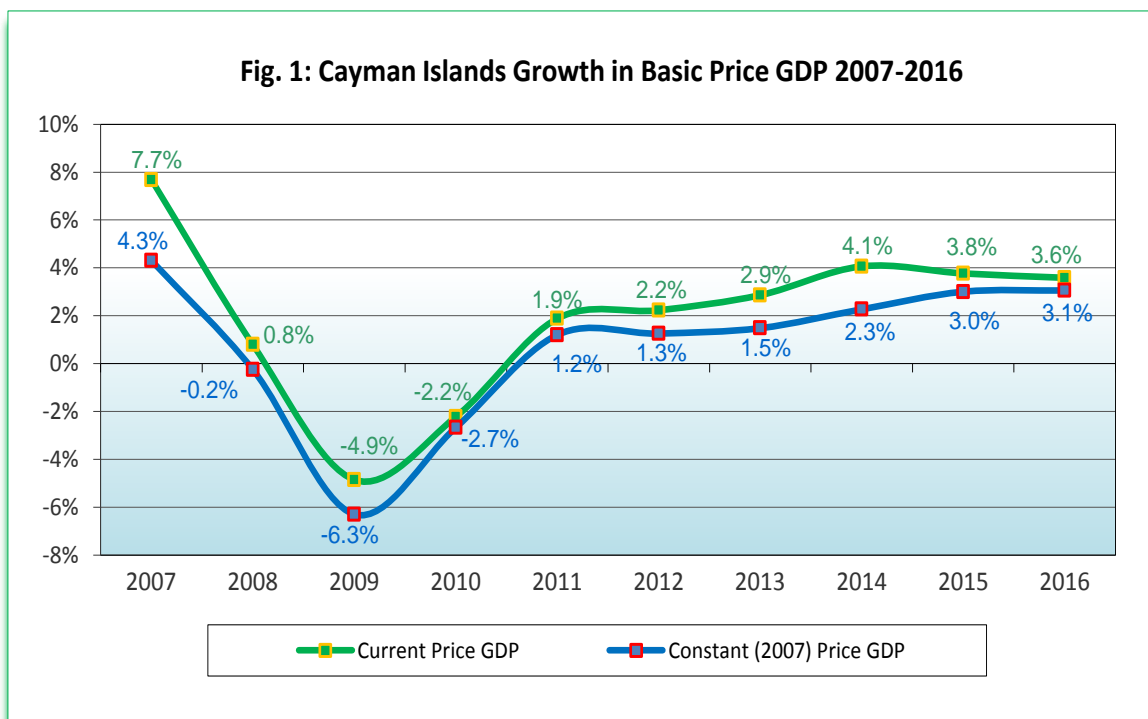
1. GDP at basic price excludes net taxes on goods and services
2. GDP at purchasers' price includes net taxes on goods and services
3. Mean Population refers to the mid-year population

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<sup>6</sup> See Table 3.

Notwithstanding the 3.1 percent increase in the overall real (basic price) GDP<sup>7</sup>, the real GDP per capita declined slightly by 0.8 percent as the growth in real GDP was outstripped by a 3.9 percent increase in the estimated mid-year population. The inflation-adjusted per capita GDP (at basic prices) decreased for the second consecutive year, moving to CI\$44,155.13 in 2016 from CI\$44,498.39 in 2015, and CI\$44,763.19 in 2014.

Figure 1 below shows the comparative growth rates of GDP at current and constant basic prices for the period 2007-2016.<sup>8</sup> The graph reflects a growth in GDP at constant prices of 3.1 percent in 2016 following on the 3.0 percent expansion registered in 2015. GDP at current prices grew by 3.6 percent in 2016 albeit at a slower pace than the 3.8 percent recorded in 2015. The graph shows the economy bottoming out in 2009 when the constant price GDP declined by 6.3 percent in the midst of the global recession. The economy has steadily recovered since 2009, returning to positive growth since 2011.



<sup>7</sup> Real GDP refers to GDP at constant (2007) prices, i.e. the inflation-adjusted GDP

<sup>8</sup> This represents the growth rate for the entire calculated GDP series which runs from 2006-2016 (the growth rate series would then be 2007-2016). 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 basic prices) for the Cayman Islands increased to CI\$2,708.1 million in 2016 from the CI\$2,627.8 million recorded for 2015. This resulted from the expansion in economic activity of all industries. The overall increase was led by the growth in human health & social work followed by construction services. Table 2 below provides a breakdown of real GDP by industry in basic prices. The table also shows the real GDP in purchasers' prices.

<b>CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN</b>					
<b>TABLE 2: GDP AT CONSTANT BASIC &amp; PURCHASERS' PRICES, 2007=100 (CI\$'000)</b>					
<b>INDUSTRY</b>	<b>2012</b>	<b>2013</b>	<b>2014<sup>R</sup></b>	<b>2015<sup>R</sup></b>	<b>2016</b>
01 Agriculture & Fishing	9,179.5	9,338.6	10,106.2	10,328.6	10,655.5
02 Mining & Quarrying	19,297.2	19,234.2	18,009.4	19,576.9	20,781.6
03 Manufacturing	22,468.0	23,105.8	23,864.4	24,371.2	25,402.8
04 Electricity, Gas & Air Conditioning Supply	58,778.5	59,585.4	60,521.4	62,362.9	65,030.1
05 Water Supply, Sewerage & Waste Management	34,616.7	34,217.1	35,402.9	36,290.2	38,179.7
06 Construction	76,088.4	78,246.2	80,277.1	86,348.9	93,197.5
07 Wholesale & Retail Trade	204,935.8	208,002.7	212,494.0	216,394.2	222,006.1
08 Transport & Storage	97,367.0	99,608.5	102,873.9	104,494.3	107,752.5
09 Hotels & Restaurants	140,664.5	143,465.4	149,157.2	150,354.7	151,701.8
10 Information & Communication	115,605.5	114,748.9	114,173.8	117,338.1	119,033.5
11 Financial & Insurance Services	1,038,447.8	1,042,573.3	1,052,615.8	1,077,073.7	1,096,936.7
12 Real Estate Activities	214,484.2	215,888.8	218,294.7	222,934.5	228,862.5
13 Professional, Scientific & Technical Activities	342,757.3	351,796.5	366,441.1	381,985.1	398,025.7
14 Administrative & Support Service Activities	54,045.3	54,394.1	56,423.0	58,391.9	61,029.9
15 Public Administration & Defense	186,107.5	190,590.9	190,910.2	195,783.2	201,382.8
16 Education Services	65,675.1	66,884.9	67,434.2	70,013.7	72,474.7
17 Human Health & Social Work	77,374.7	80,569.3	83,824.3	87,396.2	96,162.1
18 Other Services	78,765.4	79,672.5	83,558.6	85,342.5	87,864.7
<b>Total</b>	<b>2,836,658.5</b>	<b>2,871,923.0</b>	<b>2,926,381.9</b>	<b>3,006,780.6</b>	<b>3,096,480.1</b>
Less: Financial Services Indirectly Measured (FISIM)	378,429.7	377,298.3	375,193.5	378,972.6	388,401.6
<b>GDP at Constant Basic (2007) Prices</b>	<b>2,458,228.8</b>	<b>2,494,624.7</b>	<b>2,551,188.4</b>	<b>2,627,808.0</b>	<b>2,708,078.5</b>
Add: Taxes Less Subsidies on Products	165,546.5	162,717.3	176,693.6	177,358.2	196,268.8
<b>GDP at Constant Purchasers' (2007) Prices</b>	<b>2,623,775.3</b>	<b>2,657,342.0</b>	<b>2,727,882.0</b>	<b>2,805,166.2</b>	<b>2,904,347.3</b>

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### 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 3.1 percent in 2016 which resulted in a 2.2 percent average annual growth rate over the five-year period (2012-2016). The expansion in the domestic economy in 2016 resulted from increased activities in both the goods-producing (6.7%) and service-producing industries (2.8%).

The continued expansion in the goods-producing industries resulted in a five-year annual average growth rate 3.9 percent. The service-producing industries also continued its upward trajectory posting a five-year annual average growth rate of 2.0 percent.

<b>CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN</b>						
<b>TABLE 3: RATE OF GROWTH OF GDP AT CONSTANT BASIC &amp; PURCHASERS' PRICES, 2007=100</b>						
<b>INDUSTRY</b>	<b>2012</b>	<b>2013</b>	<b>2014<sup>R</sup></b>	<b>2015<sup>R</sup></b>	<b>2016</b>	<b>5-Year Average</b>
<b>Goods Producing Industries</b>	<b>2.6%</b>	<b>2.3%</b>	<b>1.8%</b>	<b>6.3%</b>	<b>6.7%</b>	<b>3.9%</b>
01 Agriculture & Fishing	1.1%	1.7%	8.2%	2.2%	3.2%	3.3%
02 Mining & Quarrying	8.2%	-0.3%	-6.4%	8.7%	6.2%	3.3%
03 Manufacturing	3.9%	2.8%	3.3%	2.1%	4.2%	3.3%
06 Construction	1.1%	2.8%	2.6%	7.6%	7.9%	4.4%
<b>Service Producing Industries</b>	<b>1.7%</b>	<b>1.2%</b>	<b>1.9%</b>	<b>2.6%</b>	<b>2.8%</b>	<b>2.0%</b>
04 Electricity, Gas & Air Conditioning Supply	-1.2%	1.4%	1.6%	3.0%	4.3%	1.8%
05 Water Supply, Sewerage & Waste Management	1.2%	-1.2%	3.5%	2.5%	5.2%	2.2%
07 Wholesale & Retail Trade	1.3%	1.5%	2.2%	1.8%	2.6%	1.9%
08 Transport & Storage	1.8%	2.3%	3.3%	1.6%	3.1%	2.4%
09 Hotels & Restaurants	3.2%	2.0%	4.0%	0.8%	0.9%	2.2%
10 Information & Communication	1.6%	-0.7%	-0.5%	2.8%	1.4%	0.9%
11 Financial & Insurance Services	1.5%	0.4%	1.0%	2.3%	1.8%	1.4%
12 Real Estate Activities	0.5%	0.7%	1.1%	2.1%	2.7%	1.4%
13 Professional, Scientific & Technical Activities	2.6%	2.6%	4.2%	4.2%	4.2%	3.6%
14 Administrative & Support Service Activities	5.6%	0.6%	3.7%	3.5%	4.5%	3.6%
15 Public Administration & Defense	2.4%	2.4%	0.2%	2.6%	2.9%	2.1%
16 Education Services	0.8%	1.8%	0.8%	3.8%	3.5%	2.2%
17 Human Health & Social Work	1.0%	4.1%	4.0%	4.3%	10.0%	4.7%
18 Other Services	3.2%	1.2%	4.9%	2.1%	3.0%	2.9%
Total	1.8%	1.2%	1.9%	2.7%	3.0%	2.1%
Financial Services Indirectly Measured (FISIM)	5.3%	-0.3%	-0.6%	1.0%	2.5%	1.6%
<b>GDP at Constant Basic (2007) Prices</b>	<b>1.3%</b>	<b>1.5%</b>	<b>2.3%</b>	<b>3.0%</b>	<b>3.1%</b>	<b>2.2%</b>
Taxes Less Subsidies on Products	0.9%	-1.7%	8.6%	0.4%	10.7%	3.8%
<b>GDP at Constant Purchasers' (2007) Prices</b>	<b>1.2%</b>	<b>1.3%</b>	<b>2.7%</b>	<b>2.8%</b>	<b>3.5%</b>	<b>2.3%</b>

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

### 3.3.1 Goods-producing industries

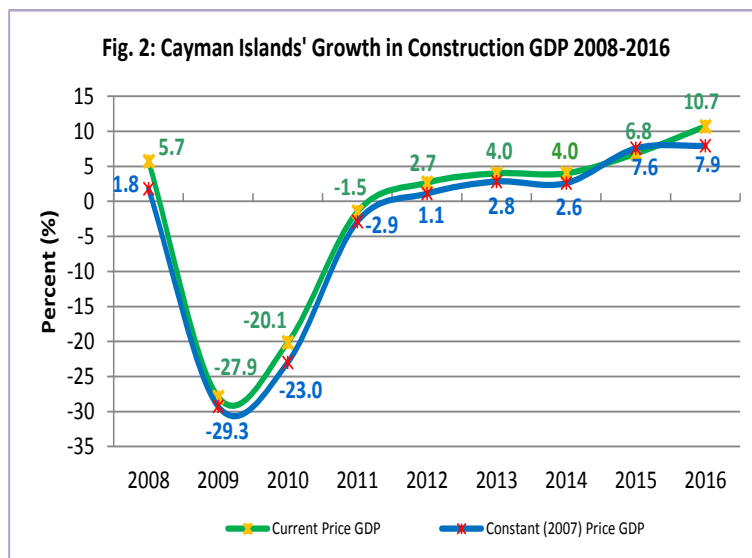
The continued expansion in 2016 for the goods-producing industries was led mainly by the improved activities of construction and mining & quarrying. The grouping registered growth of 6.7 percent in 2016 following the 6.3 percent growth posted in 2015.

The activities of **agriculture & fishing** increased for the fifth consecutive year in 2016, growing by 3.2 percent following the 2.2 percent and 8.2 percent growth in 2015 and 2014, respectively. This resulted from the improvements in the agriculture crops subgroup.

**Mining and quarrying** continued its recovery as it grew by 6.2 percent in 2016 on the back of an 8.7 percent growth posted in 2015. This reversed the declines recorded in 2013 and 2014.

The **manufacturing industry** recorded its highest growth rate in the last five years, growing by 4.2 percent in 2016. This improvement doubled the 2.1 percent expansion recorded in 2015 and resulted in a five-year annual average of 3.3 percent.

The 7.9 percent increase in value added of the **construction industry** in 2016 bypassed the 7.6 percent growth in 2015. This resulted in a five-year annual average growth rate of 4.4 percent and is evidence of the continued recovery of the industry from the declines posted in 2009-2011. The higher output levels in 2016 is attributed to the improved performance of the building construction sub-industry which grew by 5.5 percent and road construction which grew by 17.7 percent. The improvement in construction activities in 2016 adds to the positive performances posted in 2012 (1.1%), 2013 (2.8%), 2014 (2.6%), and 2015 (7.6%).





### 3.3.2 Service-producing industries

In 2016, the service-producing industries registered the highest rate of growth over the past five years. The grouping posted growth of 2.8 percent in 2016, outpacing the 2.6 percent increase in 2015. The performance in 2016 represents the sixth consecutive year of increase starting in 2011. This resulted in a five-year annual average growth rate of 2.0 percent. The expansion was broad-based, fuelled by higher level of activity in all industries, led by human health & social work; water supply & sewerage management; administrative & support services; electricity, gas & air conditioning supply; and professional scientific & technical activities.

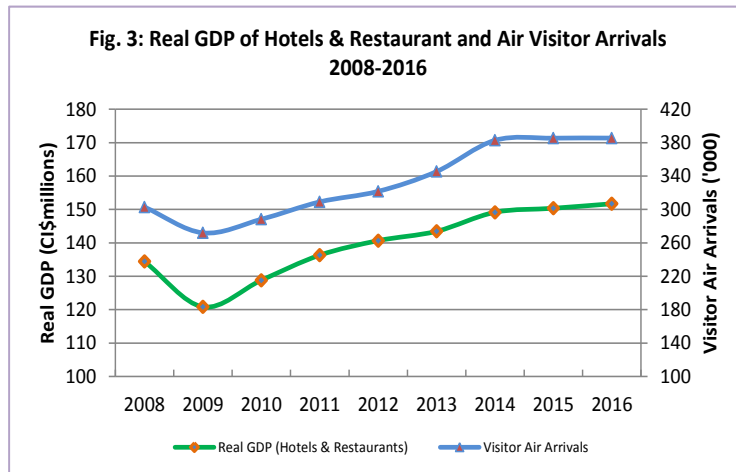
The increase of 4.3 percent in the **electricity, gas & air conditioning supply industry** represents the fourth consecutive year of expansion and the highest rate of growth since 2013. The industry posted a five-year annual average growth of 1.8 percent. The expansion occurred against the background of a 4.1 percent increase in electricity consumption, which moved from 601,548 megawatt hours (Mwhrs) in 2015 to 626,270 Mwhrs in 2016. The increase is attributed mainly to higher residential electricity consumption supported by the marginal increase in commercial consumption.

The **water supply, sewerage and waste management industry** registered its highest increase in three years, growing by 5.2 percent in 2016. This growth more than doubled 2.5 percent growth in 2015 and resulted in a five-year annual average increase of 2.2 percent. This expansion resulted from an increase in water consumption which moved from 1,718.4 million US gallons in 2015 to 1,854 million US gallons in 2016.

**Wholesale & retail trade** grew by 2.6 percent in 2016 which represents the highest growth level in the five-year review period. This was the fifth consecutive year of positive outturn which resulted in a five-year annual average growth rate of 3.2 percent. The expansion was influenced by an increase in the aggregate demand related to the 1.6 percent increase in the end of year population which moved to 62,357 in 2016 from 60,413 in 2015.

The 3.1 percent expansion in **transport and storage activities** represents the second highest growth rate in the last five years, slightly lower than the 3.3 percent increase in 2014. This expansion led to a five-year annual average increase of 2.4 percent. The positive performance of the industry was fuelled by the 3.0 percent increase in the transport services sub-industry and the 2.8 percent increase in supporting transport activities. The contributors to the positive results in transport services sub-industry were land transport (7.0%), air transport services (1.9%) and sea transport (0.3%). Post & courier services also contributed, growing by 6.9 percent which reversed three previous years of decline.

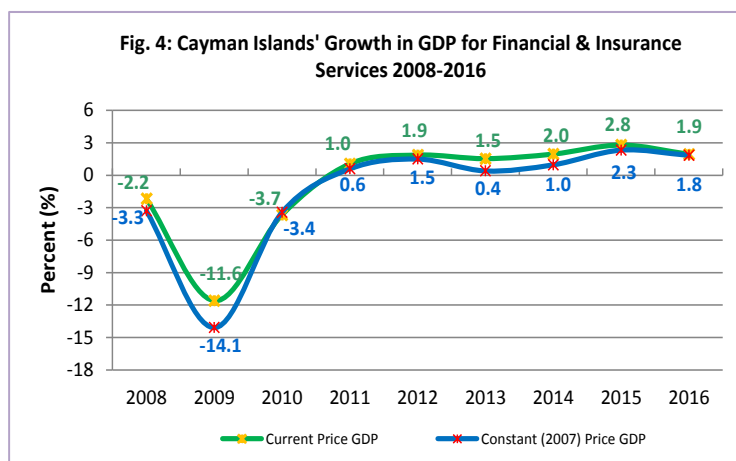
The **hotels and restaurants industry** grew modestly in 2016 (0.9%), continuing the trend of tempered growth seen in 2015 when it expanded by 0.8 percent. Notwithstanding, the performance in 2016 represented the fifth consecutive year of growth. This was due in part to the fact that the number of stay-over visitors grew marginally



for the second year in a row, increasing by 0.03 percent and 0.68 percent in 2016 and 2015, respectively. The number of stay-over visitors moved to 385.5 thousand in 2016 from 385.4 thousand in 2015. 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 2016 along with the parallel movement in previous years is evidence of this positive relationship

**Information and communication activities** grew for the second consecutive year in 2016 (1.4%), albeit at a lower rate compared to the increase of 2.8 percent in 2015. The expansion resulted in a five-year annual average growth rate of 0.9 percent. The 1.0 percent increase in telecommunications activities was the main impetus to the expansion in the industry.

The **financial and insurance services industry** posted another year of expansion in 2016 growing by 1.8 percent. This is lower than the 2.3 percent growth recorded for 2015 but higher than the 1.0 percent growth registered for 2014. Despite the slowing of the rate of expansion in 2016, the industry continued to show signs of recovery with a five-year annual average growth rate of 1.4 percent. The



performance of the industry was broad-based with all sub-industries expanding in 2016. The increased activity in the industry emanated from the growth in insurance services (3.85%), other financial services<sup>9</sup> (3.82%), auxiliary financial services<sup>10</sup> (1.6%), and services of banking institutions (1.0%). The deceleration of the rate of expansion of the industry in 2016 resulted from a slowing of the growth in banking services which is the largest sub-industry. Banking services grew by 1.8 percent in 2015 but slowed to 1.0 percent in 2016. Figure 4 provides a graphical display of the performance of the sector over the period 2008-2016. It shows how the industry has grappled with the effects of the global recession in the second half of the last decade and also shows evidence of the continued recovery.

**Real estate activities** increased by 2.7 percent in 2016 following on the 2.1 percent increase registered for 2015. The growth in 2016 represents the highest rate of expansion since 2007. The accelerated growth in 2016 resulted in a five-year annual average growth rate of 1.4 percent. The expansion resulted from increases in the activities of real estate agents and brokers (6.1%), property management activities (4.6%), operations of owner-occupied dwellings (4.1%), and renting of commercial buildings (3.2%).

The **professional, scientific & technical activities** industry maintained a stable growth rate in 2016 of 4.2 percent similar to the two previous years, 2014 and 2015. The industry registered a five-year annual average growth of 3.6 percent, resulting from five consecutive years of expansion. The performance in 2016 was attributed to the increase in the value added of accounting services (5.2%) and legal services (4.1%).

**Administrative & support service activities** posted its highest increase in four years, growing by 4.5 percent in 2016. The industry continued on its upward trajectory with a fifth consecutive year of positive outturn leading to a five-year annual average growth rate of 3.6 percent. Security activities continue to play a leading role with majority share of the industry; it grew by 3.8 percent in 2016 followed by car rental services which grew by 5.9 percent.

**Public administration & defence activities** registered an increase of 2.9 percent which outpaced the four previous years of expansion. This resulted in a five-year annual average growth rate of 2.1 percent. The expansion in public administration services is driven by a 1.7 percent increase in the number of government employees and the 4.4

<sup>9</sup> Other financial services include credit unions, building societies, remittance services, property trusts services, etc.

<sup>10</sup> Auxiliary financial services include portfolio management services, stock exchange services, security brokers, etc.

percent increase in personnel costs. The number of core government employees increased to 3,652 in 2016 from 3,591 in 2015.

**Education services** posted an increase of 3.5 percent in 2016, slightly lower compared to the 3.8 percent growth in 2015. This continued expansion in the activity resulted in a five-year annual average growth rate of 2.2 percent. Contributing to the increase in output was the growth in both the public and private education sub-industries of 3.4 percent and 3.7 percent, respectively.

The **human health and social work industry** led the way with the highest growth rate (10.0%) among the services-producing industries in 2016. The rate of expansion more than doubled the 4.3 percent posted in 2015. This resulted in the largest five-year annual average growth of all industries in the economy (4.7%). The continued growth in the output of both private and public health services contributed to the performance of the industry. In 2016, private health services expanded by 16.1 percent while public health services grew by 6.9 percent.

The value added of **other services** recorded growth of 3.0 percent in 2016, outpacing the 2.1 percent posted in 2015. Contributing to the growth in the industry was the 2.7 percent growth in water sport activities and the 4.3 percent increase in activities of private household with employed persons. The increase in the output of water sports activities was realized despite the 0.2 percent reduction in total visitors in 2016 compared to 2015.

In summary, the Cayman Islands' economy continued on the growth trajectory which started in 2011 and has increased its rate of expansion every year overcoming any lingering effects from the global economic recession. The 3.1 percent growth in 2016 represents the sixth consecutive year of economic expansion following growth in 2015 (3.0%), 2014 (2.3%), 2013 (1.5%), 2012 (1.3%), and 2011 (1.2%). This growth trend led to a five-year annual average growth rate of 2.2 percent for the local economy. The continued lowering of consumer prices (mainly due to lower oil prices and electricity cost), continued growth in construction activity and the resident population augurs well for further expansion in the domestic economic activity.

### 3.4 Contribution to GDP by industry

Table 4 shows the industries classified as goods-producing and service-producing. In 2016, for the second consecutive year, there was a marginal increase in the combined share of the goods-producing industries, moving to 5.5 percent from 5.4 percent in 2015. This resulted from increases in the shares of both construction activities, and mining & quarrying. The decline in the shares of the services-producing industries resulted from the marginal decline in the contribution of financial and insurance services, activities of hotels & restaurants, information & communication, and public administration & defense. These declines were tempered by the increased shares of professional, scientific & technical activities, administrative & support service activities and human health & social work services.

<b>CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN</b>					
<b>TABLE 4: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT BASIC PRICES, 2007=100</b>					
<b>INDUSTRY</b>	<b>2012</b>	<b>2013</b>	<b>2014<sup>R</sup></b>	<b>2015<sup>R</sup></b>	<b>2016</b>
<b>Goods Producing Industries</b>	<b>5.2%</b>	<b>5.2%</b>	<b>5.2%</b>	<b>5.4%</b>	<b>5.5%</b>
01 Agriculture & Fishing	0.4%	0.4%	0.4%	0.4%	0.4%
02 Mining & Quarrying	0.8%	0.8%	0.7%	0.7%	0.8%
03 Manufacturing	0.9%	0.9%	0.9%	0.9%	0.9%
06 Construction	3.1%	3.1%	3.1%	3.3%	3.4%
<b>Service Producing Industries</b>	<b>94.8%</b>	<b>94.8%</b>	<b>94.8%</b>	<b>94.6%</b>	<b>94.5%</b>
04 Electricity, Gas & Air Conditioning Supply	2.4%	2.4%	2.4%	2.4%	2.4%
05 Water Supply, Sewerage & Waste Management	1.4%	1.4%	1.4%	1.4%	1.4%
07 Wholesale & Retail Trade	8.3%	8.3%	8.3%	8.2%	8.2%
08 Transport & Storage	4.0%	4.0%	4.0%	4.0%	4.0%
09 Hotels & Restaurants	5.7%	5.8%	5.8%	5.7%	5.6%
10 Information & Communication	4.7%	4.6%	4.5%	4.5%	4.4%
11 Financial & Insurance Services	42.2%	41.8%	41.3%	41.0%	40.5%
12 Real Estate Activities	8.7%	8.7%	8.6%	8.5%	8.5%
13 Professional, Scientific & Technical Activities	13.9%	14.1%	14.4%	14.5%	14.7%
14 Administrative & Support Service Activities	2.2%	2.2%	2.2%	2.2%	2.3%
15 Public Administration & Defense	7.6%	7.6%	7.5%	7.5%	7.4%
16 Education Services	2.7%	2.7%	2.6%	2.7%	2.7%
17 Human Health & Social Work	3.1%	3.2%	3.3%	3.3%	3.6%
18 Other Services	3.2%	3.2%	3.3%	3.2%	3.2%
Less: Financial Services Indirectly Measured (FISIM)	15.4%	15.1%	14.7%	14.4%	14.3%
<b>GDP at Constant Basic (2007) Prices</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

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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 contribution to real GDP) to the Cayman Islands' economy. The relative ranking of the industries remained unchanged in 2016 when compared to 2015 despite changes in the individual contribution of nine (9) of the eighteen (18) industries. Of the nine industries registering a change in their contribution, five registered increases while four posted declines.

TABLE 5: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT BASIC PRICES, 2007=100										
Ranking					INDUSTRY	% Contribution to GDP				
2012	2013	2014	2015	2016		2012	2013	2014	2015	2016
1	1	1	1	1	Financial & Insurance Services	42.2	41.8	41.3	41.0	40.5
2	2	2	2	2	Professional, Scientific & Technical Activities	13.9	14.1	14.4	14.5	14.7
3	3	3	3	3	Real Estate Activities	8.7	8.7	8.6	8.5	8.5
4	4	4	4	4	Wholesale & Retail Trade	8.3	8.3	8.3	8.2	8.2
5	5	5	5	5	Public Administration & Defense	7.6	7.6	7.5	7.5	7.4
6	6	6	6	6	Hotels & Restaurants	5.7	5.8	5.8	5.7	5.6
7	7	7	7	7	Information & Communication	4.7	4.6	4.5	4.5	4.4
8	8	8	8	8	Transport & Storage	4.0	4.0	4.0	4.0	4.0
10	9	9	9	9	Human Health & Social Work	3.1	3.2	3.3	3.3	3.6
11	11	11	10	10	Construction	3.1	3.1	3.1	3.3	3.4
9	10	10	11	11	Other Services	3.2	3.2	3.3	3.2	3.2
12	12	12	12	12	Education Services	2.7	2.7	2.6	2.7	2.7
13	13	13	13	13	Electricity, Gas & Air Conditioning Supply	2.4	2.4	2.4	2.4	2.4
14	14	14	14	14	Administrative & Support Service Activities	2.2	2.2	2.2	2.2	2.3
15	15	15	15	15	Water Supply, Sewerage & Waste Management	1.4	1.4	1.4	1.4	1.4
16	16	16	16	16	Manufacturing	0.9	0.9	0.9	0.9	0.9
17	17	17	17	17	Mining & Quarrying	0.8	0.8	0.7	0.7	0.8
18	18	18	18	18	Agriculture & Fishing	0.4	0.4	0.4	0.4	0.4
					Less: Financial Services Indirectly Measured (FISIM)	15.4	15.1	14.7	14.4	14.3
					<b>GDP at Constant Basic (2007) Prices</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

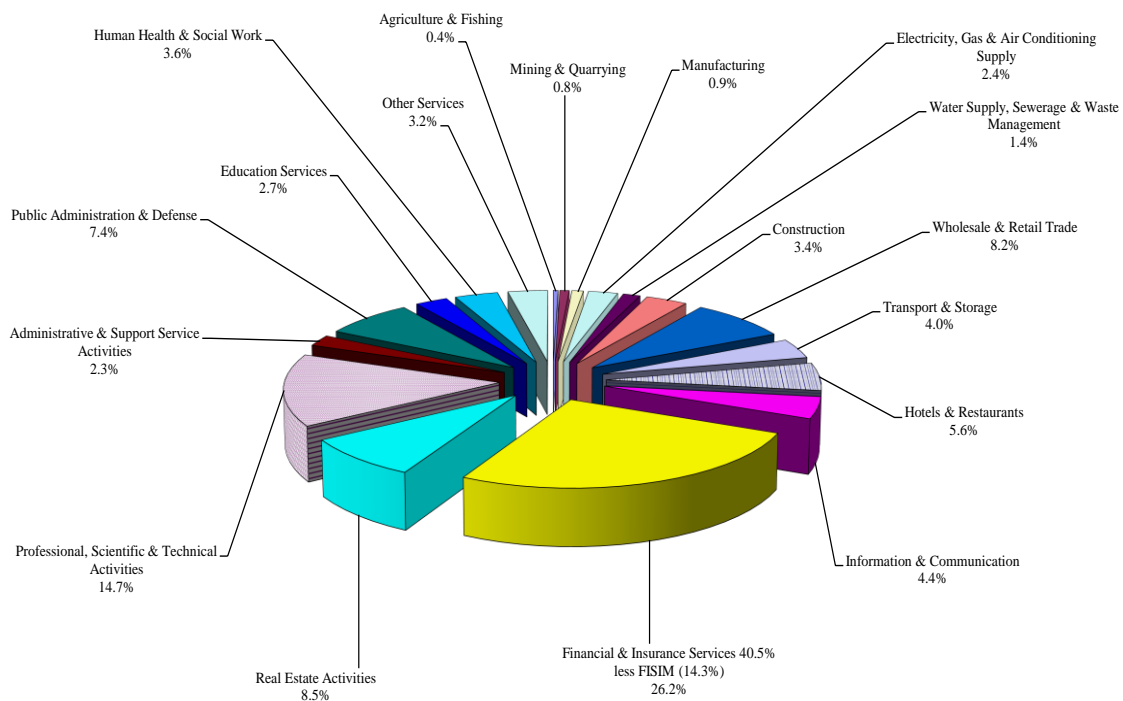
Despite a decline in its contribution, financial and insurance services maintain its dominance as the largest single contributor to real GDP of the Cayman Islands accounting for 40.5 percent in 2016, down from the 41.0 percent share in 2015. This represents the fourth consecutive year of decline. This decline is the largest absolute share decline in the past five years, similar to the 0.5 percentage points decline in 2014 relative to 2013.

The professional, scientific & technical activities industry increased its share to the largest in five years moving to 14.7 percent in 2016 from the 14.5 percent recorded in 2015. The increase consolidates its position as the second largest contributor to real GDP. The performance is primarily attributed to legal and accounting services which continued to experience increased activity with the recovery of financial and insurance services.

Other significant contributions to real GDP in 2016 came from real estate activities (8.5%), and wholesale & retail trade (8.2%). These were followed by public administration & defence (7.4%) which had a marginal decline in share compared to the 7.5 percent in 2015. Hotel & restaurant activities remained the sixth largest contributor to total real GDP despite falling for the second successive year to 5.6 percent in 2016 from 5.7 percent in 2015 and 5.8 percent in 2014. This occurred as the growth in the stay-over segment of tourism activity remained modest in 2016 compared to 2015.

Construction increased its share for the second consecutive year, increasing marginally to 3.4 percent in 2016 from 3.3 percent in 2015, and 3.1 percent in 2014. With the increase in share, the activity maintained its tenth place.

**Fig 5: Industry Contribution to Cayman Islands GDP at Constant Basic Prices, 2016\***



\* The sum of individual shares might not add up to 100% due to rounding.

### 3.5 Industry GDP at Current Prices

<b>CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN</b>					
<b>TABLE 6: GDP AT CURRENT BASIC &amp; PURCHASERS' PRICES (CI\$'000)</b>					
<b>INDUSTRY</b>	<b>2012</b>	<b>2013</b>	<b>2014<sup>R</sup></b>	<b>2015<sup>R</sup></b>	<b>2016</b>
01 Agriculture & Fishing	9,533.3	9,677.5	11,140.6	12,391.0	13,373.5
02 Mining & Quarrying	19,991.1	20,271.5	19,019.4	20,465.7	21,608.1
03 Manufacturing	24,417.9	25,375.8	26,864.0	27,304.0	29,163.0
04 Electricity, Gas & Air Conditioning Supply	55,729.5	59,735.0	58,289.2	61,503.9	67,298.7
05 Water Supply, Sewerage & Waste Management	35,696.2	34,148.7	35,801.8	37,831.6	40,733.2
06 Construction	86,086.2	89,531.9	93,118.4	99,472.1	110,122.7
07 Wholesale & Retail Trade	218,529.9	224,231.6	233,577.7	241,650.3	250,283.5
08 Transport & Storage	103,323.0	107,781.6	117,810.5	125,338.1	129,733.5
09 Hotels & Restaurants	156,076.9	168,938.6	185,064.8	194,942.0	204,489.1
10 Information & Communication	102,346.5	100,889.3	104,430.3	110,042.7	111,480.1
11 Financial & Insurance Services	1,087,112.7	1,103,797.2	1,125,412.1	1,156,793.4	1,179,262.6
12 Real Estate Activities	223,219.2	222,118.8	225,626.2	228,381.0	232,953.5
13 Professional, Scientific & Technical Activities	362,030.6	375,436.4	396,758.5	412,172.9	432,634.9
14 Administrative & Support Service Activities	56,540.2	57,014.6	59,801.6	61,519.0	63,903.2
15 Public Administration & Defense	187,210.0	189,665.4	193,862.6	202,812.6	207,195.3
16 Education Services	68,379.7	71,002.6	72,506.9	77,164.8	81,050.5
17 Human Health & Social Work	84,140.7	89,927.4	93,173.0	98,303.5	106,330.7
18 Other Services	83,953.4	88,131.2	94,990.0	97,272.3	100,554.0
<b>Total</b>	<b>2,964,317.0</b>	<b>3,037,674.9</b>	<b>3,147,247.6</b>	<b>3,265,361.1</b>	<b>3,382,170.0</b>
Less: Financial Services Indirectly Measured (FISIM)	388,932.1	388,611.3	390,540.3	404,784.1	419,014.2
<b>GDP at Current Basic Prices</b>	<b>2,575,384.8</b>	<b>2,649,063.7</b>	<b>2,756,707.3</b>	<b>2,860,577.0</b>	<b>2,963,155.8</b>
Add: Taxes Less Subsidies on Products	201,003.2	203,289.8	220,599.2	217,042.6	234,705.5
<b>GDP at Current Purchasers' Prices</b>	<b>2,776,388.0</b>	<b>2,852,353.5</b>	<b>2,977,306.5</b>	<b>3,077,619.6</b>	<b>3,197,861.3</b>

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**3.6 Detailed Value Added by Industry**

TABLE 7: DETAILED VALUE ADDED BY INDUSTRY		CURRENT/NOMINAL (CIS\$'000)					CONSTANT/REAL (CIS\$'000)				
INDUSTRY	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016	
<b>AGRICULTURE &amp; FISHING</b>	<b>9,533.3</b>	<b>9,677.5</b>	<b>11,140.6</b>	<b>12,391.0</b>	<b>13,373.5</b>	<b>9,179.5</b>	<b>9,338.6</b>	<b>10,106.2</b>	<b>10,328.6</b>	<b>10,655.5</b>	
Growing of Agricultural Crops	5,520.1	6,006.5	6,604.4	6,904.5	7,604.9	5,440.1	5,758.5	6,170.1	6,334.2	6,756.6	
Farming of Animals	1,004.7	1,002.0	992.2	995.5	1,030.7	901.8	902.8	805.7	763.0	749.1	
Capture Fishing	3,008.5	2,669.1	3,544.0	4,491.0	4,737.8	2,837.7	2,677.3	3,130.3	3,231.4	3,149.8	
<b>MINING &amp; QUARRYING</b>	<b>19,991.1</b>	<b>20,271.5</b>	<b>19,019.4</b>	<b>20,465.7</b>	<b>21,608.1</b>	<b>19,297.2</b>	<b>19,234.2</b>	<b>18,009.4</b>	<b>19,576.9</b>	<b>20,781.6</b>	
Quarrying incl. Stone, Sand and Gravel	19,991.1	20,271.5	19,019.4	20,465.7	21,608.1	19,297.2	19,234.2	18,009.4	19,576.9	20,781.6	
<b>MANUFACTURING</b>	<b>24,417.9</b>	<b>25,375.8</b>	<b>26,864.0</b>	<b>27,304.0</b>	<b>29,163.0</b>	<b>22,468.0</b>	<b>23,105.8</b>	<b>23,864.4</b>	<b>24,371.2</b>	<b>25,402.8</b>	
Food Products, Beverages and Tobacco Products	12,333.1	12,518.4	13,073.8	13,298.7	13,883.0	10,792.5	10,890.1	11,107.0	11,160.3	11,488.6	
Builders' Carpentry and Joinery, incl. Furniture and Rubber and Plastic Product	2,443.8	2,838.3	2,871.3	2,759.5	2,922.7	2,383.2	2,742.1	2,922.8	2,764.7	2,910.2	
Non-Metallic Mineral Products (incl. Glass and Glass Products, Concrete, Cement)	2,412.5	2,625.0	3,488.6	3,983.8	4,301.5	2,294.8	2,419.3	2,930.8	3,404.2	3,615.4	
Basic Metals, Fabricated Metal Products, Machinery & Equipment	3,729.5	3,779.3	3,998.2	3,890.8	4,526.8	3,664.2	3,719.3	3,786.9	3,936.7	4,152.2	
Other Manufacturing Goods n.e.c.	3,499.1	3,614.9	3,432.2	3,371.3	3,528.9	3,333.3	3,335.1	3,116.8	3,105.3	3,236.4	
<b>ELECTRICITY, GAS &amp; AIR CONDITIONING SUPPLY</b>	<b>55,729.5</b>	<b>59,735.0</b>	<b>58,289.2</b>	<b>61,503.9</b>	<b>67,298.7</b>	<b>58,778.5</b>	<b>59,585.4</b>	<b>60,521.4</b>	<b>62,362.9</b>	<b>65,030.1</b>	
Production, Collection and Distribution of Electricity and the Manufacture of Ice	55,729.5	59,735.0	58,289.2	61,503.9	67,298.7	58,778.5	59,585.4	60,521.4	62,362.9	65,030.1	
<b>WATER SUPPLY, SEWERAGE &amp; WASTE MANAGEMENT</b>	<b>35,696.2</b>	<b>34,148.7</b>	<b>35,801.8</b>	<b>37,831.6</b>	<b>40,733.2</b>	<b>34,616.7</b>	<b>34,217.1</b>	<b>35,402.9</b>	<b>36,290.2</b>	<b>38,179.7</b>	
Water Collection, Treatment and Distribution, Sewerage and Waste Collection	35,696.2	34,148.7	35,801.8	37,831.6	40,733.2	34,616.7	34,217.1	35,402.9	36,290.2	38,179.7	
<b>CONSTRUCTION</b>	<b>86,086.2</b>	<b>89,531.9</b>	<b>93,118.4</b>	<b>99,472.1</b>	<b>110,122.7</b>	<b>76,088.4</b>	<b>78,246.2</b>	<b>80,277.1</b>	<b>86,348.9</b>	<b>93,197.5</b>	
Construction (incl building installation, building completion, etc.)	86,086.2	89,531.9	93,118.4	99,472.1	110,122.7	76,088.4	78,246.2	80,277.1	86,348.9	93,197.5	
<b>WHOLESALE &amp; RETAIL TRADE</b>	<b>218,529.9</b>	<b>224,231.6</b>	<b>233,577.7</b>	<b>241,650.3</b>	<b>250,283.5</b>	<b>204,935.8</b>	<b>208,002.7</b>	<b>212,494.0</b>	<b>216,394.2</b>	<b>222,006.1</b>	
Wholesale & Retail Trade	218,529.9	224,231.6	233,577.7	241,650.3	250,283.5	204,935.8	208,002.7	212,494.0	216,394.2	222,006.1	
<b>TRANSPORT &amp; STORAGE</b>	<b>103,323.0</b>	<b>107,781.6</b>	<b>117,810.5</b>	<b>125,338.1</b>	<b>129,733.5</b>	<b>97,367.0</b>	<b>99,608.5</b>	<b>102,873.9</b>	<b>104,494.3</b>	<b>107,752.5</b>	
Transport	41,394.5	43,983.5	47,826.4	52,539.7	54,950.0	42,058.9	43,452.7	44,890.2	46,056.6	47,438.5	
Supporting Activities for Transport (incl Cargo)	55,002.4	56,785.0	63,291.9	66,340.8	67,733.2	49,170.0	50,059.7	52,231.5	52,836.8	54,327.0	
Post and Courier Activities	6,926.1	7,013.1	6,692.2	6,457.6	7,050.4	6,138.2	6,096.2	5,752.2	5,600.9	5,987.1	
<b>HOTELS &amp; RESTAURANTS</b>	<b>156,076.9</b>	<b>168,938.6</b>	<b>185,064.8</b>	<b>194,942.0</b>	<b>204,489.1</b>	<b>140,664.5</b>	<b>143,465.4</b>	<b>149,157.2</b>	<b>150,354.7</b>	<b>151,701.8</b>	
Hotels & Other Short-Term Accommodations Activities	109,114.2	120,944.7	134,608.8	142,610.2	150,683.5	99,430.3	101,996.2	105,912.5	106,694.2	107,622.7	
Restaurants, Bars & Other Food Service Activities	46,962.6	47,993.9	50,456.0	52,331.8	53,805.6	41,234.1	41,469.3	43,244.7	43,660.5	44,079.1	
<b>INFORMATION &amp; COMMUNICATION</b>	<b>102,346.5</b>	<b>100,889.3</b>	<b>104,430.3</b>	<b>110,042.7</b>	<b>111,480.1</b>	<b>115,605.5</b>	<b>114,748.9</b>	<b>114,173.8</b>	<b>117,338.1</b>	<b>119,033.5</b>	
Motion Picture Projection, Radio & TV Programming and Broadcasting and Telecommunications Activities	77,214.3	76,205.7	78,437.2	82,895.8	83,992.4	90,552.4	89,731.8	87,764.2	89,868.1	90,863.5	
Publishing, Printing and Computer & Data Processing Services	25,132.2	24,683.6	25,993.0	27,147.0	27,487.7	25,053.1	25,017.0	26,409.6	27,470.0	28,170.0	

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INDUSTRY	CURRENT/NOMINAL (CIS'000)					CONSTANT/REAL (CIS'000)				
	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
<b>FINANCIAL &amp; INSURANCE SERVICES</b>	<b>1,087,112.7</b>	<b>1,103,797.2</b>	<b>1,125,412.1</b>	<b>1,156,793.4</b>	<b>1,179,262.6</b>	<b>1,038,447.8</b>	<b>1,042,573.3</b>	<b>1,052,615.8</b>	<b>1,077,073.7</b>	<b>1,096,936.7</b>
Monetary Institutions (incl. CIMA)	629,242.5	641,327.5	649,346.1	668,037.0	681,822.0	568,837.9	572,639.4	575,965.7	586,063.0	592,042.1
Other Financial Institutions & Financial Services	248,205.6	250,263.4	258,618.0	258,051.8	266,643.3	256,187.9	256,236.7	260,602.5	265,208.4	270,399.4
Insurance, Pension Funding (incl. Auxiliary Activities)	209,664.6	212,206.3	217,447.9	230,704.6	230,797.2	213,422.0	213,697.2	216,047.6	225,802.3	234,495.2
<b>REAL ESTATE ACTIVITIES</b>	<b>223,219.2</b>	<b>222,118.8</b>	<b>225,626.2</b>	<b>228,381.0</b>	<b>232,953.5</b>	<b>214,484.2</b>	<b>215,888.8</b>	<b>218,294.7</b>	<b>222,934.5</b>	<b>228,862.5</b>
Operating of Owner-Occupied Dwellings	81,805.6	83,140.6	82,094.0	77,860.6	78,356.6	81,070.0	82,843.1	83,718.5	83,422.6	86,831.2
Renting of Residential Buildings	59,959.7	57,834.0	60,037.6	63,660.1	63,979.4	57,763.1	57,479.5	58,086.9	60,076.3	59,392.7
Renting of Commercial Buildings	58,025.2	56,756.8	58,458.8	61,155.3	62,640.4	52,378.1	51,447.7	51,731.9	53,813.1	55,533.8
Other Real Estate Activities	23,428.8	24,387.3	25,035.8	25,705.1	27,977.1	23,273.0	24,118.5	24,757.5	25,622.5	27,104.9
<b>PROFESSIONAL, SCIENTIFIC &amp; TECHNICAL ACTIVITIES</b>	<b>362,030.6</b>	<b>375,436.4</b>	<b>396,758.5</b>	<b>412,172.9</b>	<b>432,634.9</b>	<b>342,757.3</b>	<b>351,796.5</b>	<b>366,441.1</b>	<b>381,985.1</b>	<b>398,025.7</b>
Legal Activities	152,058.0	154,535.2	163,137.7	169,063.0	179,309.6	140,011.1	140,492.4	147,876.6	152,877.1	159,069.2
Accounting & Auditing Activities	117,360.6	124,847.8	131,259.0	135,420.4	142,203.2	115,428.1	121,036.3	123,735.8	130,526.1	137,317.5
Other Professional, Scientific & Technical Activities	92,612.0	96,053.4	102,361.8	107,689.5	111,122.1	87,318.1	90,267.8	94,828.7	98,581.8	101,638.9
<b>ADMINISTRATIVE &amp; SUPPORT SERVICE ACTIVITIES</b>	<b>56,540.2</b>	<b>57,014.6</b>	<b>59,801.6</b>	<b>61,519.0</b>	<b>63,903.2</b>	<b>54,045.3</b>	<b>54,394.1</b>	<b>56,423.0</b>	<b>58,391.9</b>	<b>61,029.9</b>
Administrative and Support Service to Businesses (incl. Renting of Machinery & Equipment)	56,540.2	57,014.6	59,801.6	61,519.0	63,903.2	54,045.3	54,394.1	56,423.0	58,391.9	61,029.9
<b>PUBLIC ADMINISTRATION &amp; DEFENSE</b>	<b>187,210.0</b>	<b>189,665.4</b>	<b>193,862.6</b>	<b>202,812.6</b>	<b>207,195.3</b>	<b>186,107.5</b>	<b>190,590.9</b>	<b>190,910.2</b>	<b>195,783.2</b>	<b>201,382.8</b>
Public Administration and Defense	187,210.0	189,665.4	193,862.6	202,812.6	207,195.3	186,107.5	190,590.9	190,910.2	195,783.2	201,382.8
<b>EDUCATION SERVICES</b>	<b>68,379.7</b>	<b>71,002.6</b>	<b>72,506.9</b>	<b>77,164.8</b>	<b>81,050.5</b>	<b>65,675.1</b>	<b>66,884.9</b>	<b>67,434.2</b>	<b>70,013.7</b>	<b>72,474.7</b>
Public Education	43,365.5	43,634.8	44,256.4	47,362.2	48,653.9	42,980.9	43,278.8	43,488.3	45,791.8	47,355.0
Private Education	25,014.2	27,367.7	28,250.5	29,802.5	32,396.6	22,694.2	23,606.1	23,946.0	24,221.9	25,119.8
<b>HUMAN HEALTH &amp; SOCIAL WORK</b>	<b>84,140.7</b>	<b>89,927.4</b>	<b>93,173.0</b>	<b>98,303.5</b>	<b>106,330.7</b>	<b>77,374.7</b>	<b>80,569.3</b>	<b>83,824.3</b>	<b>87,396.2</b>	<b>96,162.1</b>
Public Health and Social Services	59,213.2	62,601.2	63,995.6	68,200.8	73,408.5	53,781.6	55,142.6	56,270.0	58,042.1	62,073.9
Private Health & Social Services	24,927.5	27,326.2	29,177.4	30,102.7	32,922.3	23,593.1	25,426.7	27,554.3	29,354.1	34,088.2
<b>OTHER SERVICES</b>	<b>83,953.4</b>	<b>88,131.2</b>	<b>94,990.0</b>	<b>97,272.3</b>	<b>100,554.0</b>	<b>78,765.4</b>	<b>79,672.5</b>	<b>83,558.6</b>	<b>85,342.5</b>	<b>87,864.7</b>
Private Arts, Entertainment & Recreation	29,774.6	30,797.1	32,698.1	33,002.5	33,404.7	26,903.1	27,357.1	28,731.5	29,403.7	29,826.6
Personal & Household Services (incl. Activities of Membership Organization)	31,221.2	32,608.8	33,797.2	35,244.7	36,888.9	29,303.7	29,732.9	30,945.1	31,895.1	32,971.1
Private Households with Employed Persons	22,957.6	24,725.2	28,494.7	29,025.1	30,260.4	22,558.6	22,582.5	23,882.0	24,043.7	25,066.9
FINANCIAL SERVICES Indirectly Measured (FISIM)	388,932.1	388,611.3	390,540.3	404,784.1	419,014.2	378,429.7	377,298.3	375,193.5	378,972.6	388,401.6
<b>VALUE ADDED/GDP AT BASIC PRICES</b>	<b>2,575,384.8</b>	<b>2,649,063.7</b>	<b>2,756,707.3</b>	<b>2,860,577.0</b>	<b>2,963,155.8</b>	<b>2,458,228.8</b>	<b>2,494,624.7</b>	<b>2,551,188.4</b>	<b>2,627,808.0</b>	<b>2,708,078.5</b>
TAXES LESS SUBSIDIES ON PRODUCTS	201,003.2	203,289.8	220,599.2	217,042.6	234,705.5	165,546.5	162,717.3	176,693.6	177,358.2	196,268.8
<b>GROSS DOMESTIC PRODUCTS AT PURCHASERS' PRICES</b>	<b>2,776,388.0</b>	<b>2,852,353.5</b>	<b>2,977,306.5</b>	<b>3,077,619.6</b>	<b>3,197,861.3</b>	<b>2,623,775.3</b>	<b>2,657,342.0</b>	<b>2,727,882.0</b>	<b>2,805,166.2</b>	<b>2,904,347.3</b>

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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 goods and services included in the GDP of the 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 2007-2016. 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. 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 2007) is equal to 100.

<b>CAYMAN ISLANDS GROSS DOMESTIC (GDP) TABLES</b>										
<b>TABLE 8: GDP IMPLICIT PRICE INDEX (IPI), 2007=100</b>										
<b>INDUSTRY</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
01 Agriculture & Fishing	100.0	100.5	100.6	100.6	101.6	103.9	103.6	110.2	120.0	125.5
02 Mining & Quarrying	100.0	105.2	110.0	111.1	104.5	103.6	105.4	105.6	104.5	104.0
03 Manufacturing	100.0	102.6	101.3	105.3	107.6	108.7	109.8	112.6	112.0	114.8
04 Electricity, Gas & Air Conditioning Supply	100.0	80.3	86.6	92.1	92.9	94.8	100.3	96.3	98.6	103.5
05 Water Supply, Sewerage & Waste Management	100.0	94.6	95.3	102.5	97.7	103.1	99.8	101.1	104.2	106.7
06 Construction	100.0	103.9	105.9	109.8	111.4	113.1	114.4	116.0	115.2	118.2
07 Wholesale & Retail Trade	100.0	99.3	101.9	102.4	104.6	106.6	107.8	109.9	111.7	112.7
08 Transport & Storage	100.0	103.9	102.7	104.4	105.3	106.1	108.2	114.5	119.9	120.4
09 Hotels & Restaurants	100.0	103.8	107.6	106.7	108.4	111.0	117.8	124.1	129.7	134.8
10 Information & Communication	100.0	97.1	92.6	89.5	89.3	88.5	87.9	91.5	93.8	93.7
11 Financial & Insurance Services	100.0	101.1	104.1	103.8	104.3	104.7	105.9	106.9	107.4	107.5
12 Real Estate Activities	100.0	103.9	102.3	101.7	103.4	104.1	102.9	103.4	102.4	101.8
13 Professional, Scientific & Technical Activities	100.0	102.7	103.1	103.4	103.7	105.6	106.7	108.3	107.9	108.7
14 Administrative & Support Service Activities	100.0	102.4	103.0	104.4	104.7	104.6	104.8	106.0	105.4	104.7
15 Public Administration & Defense	100.0	102.1	101.1	99.5	98.5	100.6	99.5	101.5	103.6	102.9
16 Education Services	100.0	103.3	103.8	103.9	103.1	104.1	106.2	107.5	110.2	111.8
17 Human Health & Social Work	100.0	96.6	97.2	100.3	104.3	108.7	111.6	111.2	112.5	110.6
18 Other Services	100.0	104.3	103.9	104.7	104.9	106.6	110.6	113.7	114.0	114.4
Total	100.0	101.2	102.5	102.7	103.3	104.5	105.8	107.5	108.6	109.2
Less: Financial Services Indirectly Measured (FISIM)	100.0	102.1	101.6	100.2	100.2	102.8	103.0	104.1	106.8	107.9
<b>GDP Implicit Deflator at Basic Prices</b>	<b>100.0</b>	<b>101.0</b>	<b>102.6</b>	<b>103.1</b>	<b>103.8</b>	<b>104.8</b>	<b>106.2</b>	<b>108.1</b>	<b>108.9</b>	<b>109.4</b>
Add: Taxes Less Subsidies on Products	100.0	104.1	103.3	106.5	117.8	121.4	124.9	124.8	122.4	119.6
<b>GDP Implicit Deflator at Purchasers' Prices</b>	<b>100.0</b>	<b>101.3</b>	<b>102.6</b>	<b>103.3</b>	<b>104.7</b>	<b>105.8</b>	<b>107.3</b>	<b>109.1</b>	<b>109.7</b>	<b>110.1</b>
<b>GDP IPI (Basic Prices) percentage change</b>	<b>3.2%</b>	<b>1.0%</b>	<b>1.5%</b>	<b>0.5%</b>	<b>0.7%</b>	<b>1.0%</b>	<b>1.4%</b>	<b>1.8%</b>	<b>0.7%</b>	<b>0.5%</b>
<b>GDP IPI (Purchasers' Prices) percentage change</b>	<b>3.3%</b>	<b>1.3%</b>	<b>1.4%</b>	<b>0.6%</b>	<b>1.3%</b>	<b>1.1%</b>	<b>1.4%</b>	<b>1.7%</b>	<b>0.5%</b>	<b>0.4%</b>
<b>CPI percentage change</b>	<b>2.9%</b>	<b>4.1%</b>	<b>-1.5%</b>	<b>0.3%</b>	<b>1.3%</b>	<b>1.2%</b>	<b>2.2%</b>	<b>1.3%</b>	<b>-2.3%</b>	<b>-0.6%</b>

### 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 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.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN							
TABLE 9: PRODUCTION AND COST COMPONENTS OF VALUE ADDED AT CURRENT BASIC & PURCHASERS' PRICES 2016 (CIS\$'000)							
INDUSTRY	Production Components			Cost/Income Components			
	Gross Value Added <sup>1, 1a, 1b</sup>	Gross Output	Intermediate Consumption	Compensation of Employees	Operating Surplus/Mixed Income	Consumption of Fixed Capital <sup>2</sup>	Taxes less Subsidies on Production
01 Agriculture & Fishing	13,373.5	21,673.7	8,300.2	5,052.5	7,241.2	669.2	410.5
02 Mining & Quarrying	21,608.1	37,958.0	16,349.9	12,257.3	6,693.0	2,480.0	177.8
03 Manufacturing	29,163.0	52,125.2	22,962.2	13,036.1	14,401.5	1,366.0	359.5
04 Electricity, Gas & Air Conditioning Supply	67,298.7	146,964.3	79,665.6	12,141.4	28,116.7	25,243.7	1,797.0
05 Water Supply, Sewerage & Waste Management	40,733.2	72,676.9	31,943.8	20,258.4	13,887.1	6,376.5	211.1
06 Construction	110,122.7	284,780.1	174,657.4	56,913.0	48,369.1	2,373.7	2,466.9
07 Wholesale & Retail Trade	250,283.5	363,554.5	113,271.0	120,933.9	97,783.5	24,423.2	7,143.1
08 Transport & Storage	129,733.6	220,843.6	91,110.1	81,316.3	37,265.9	10,340.4	811.0
09 Hotels & Restaurants	204,489.1	351,824.2	147,335.1	94,709.5	100,810.3	7,285.8	1,683.5
10 Information & Communication	111,480.1	189,375.4	77,895.3	46,376.7	36,430.4	19,627.7	9,045.3
11 Financial & Insurance Services	1,179,262.6	1,680,627.9	501,365.3	374,174.4	539,619.0	27,935.5	237,533.7
12 Real Estate Activities	232,953.5	378,624.6	145,671.1	35,820.9	163,513.8	20,902.7	12,716.1
13 Professional, Scientific & Technical Activities	432,634.9	592,281.2	159,646.3	262,431.2	141,293.3	7,853.1	21,057.3
14 Administrative & Support Service Activities	63,903.2	91,597.8	27,694.6	51,846.0	3,898.9	6,253.1	1,905.2
15 Public Administration & Defense	207,195.3	297,715.9	90,520.6	183,573.2	0.0	11,100.7	22.0
16 Education Services	81,050.5	103,586.8	22,536.2	67,668.9	7,714.5	5,607.6	59.6
17 Human Health & Social Work	106,330.7	161,159.2	54,828.5	88,285.5	8,124.0	9,615.1	306.2
18 Other Services	100,554.0	155,302.1	54,748.2	58,635.8	47,275.5	6,629.6	512.5
<b>Total</b>	<b>3,382,170.0</b>	<b>5,202,671.3</b>	<b>1,820,501.3</b>	<b>1,585,431.0</b>	<b>1,302,437.3</b>	<b>196,083.5</b>	<b>298,218.3</b>
Less: Financial Services Indirectly Measured (FISIM)	419,014.2						
GDP at Current Basic Prices	<b>2,963,155.8</b>						
Add: Taxes Less Subsidies on Products	234,705.5						
GDP at Current Purchasers' Prices	<b>3,197,861.3</b>						

**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

The Cayman Islands' Gross Domestic Product (GDP) at current purchasers' prices for 2016 stood at CI\$3,197.9 million. The components of GDP by type of income and their rates of growth are shown in Tables 10a and 10b below.

TABLE 10a: GROSS DOMESTIC PRODUCT (GDP) BY INCOME AT CURRENT PRICES (CI\$'000)						
Type of Income	2011	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
Compensation of Employees	1,378,493.5	1,418,280.9	1,442,485.8	1,480,839.0	1,533,981.2	1,585,431.0
Operating Surplus\Mixed Income	777,408.3	788,240.1	765,667.2	803,006.3	859,596.0	883,423.1
Consumption of Fixed Capital	172,184.2	175,058.9	178,012.8	186,967.8	185,223.8	196,083.5
Taxes less Subsidies on Production and Imports	384,575.6	394,808.2	466,187.7	506,493.4	498,818.6	532,923.7
<b>Gross Domestic Product at Purchasers' Prices</b>	<b>2,712,661.6</b>	<b>2,776,388.0</b>	<b>2,852,353.5</b>	<b>2,977,306.5</b>	<b>3,077,619.6</b>	<b>3,197,861.3</b>

R-revised

TABLE 10b: PERCENTAGE GROWTH of GDP BY INCOME AT CURRENT PURCHASERS' PRICES						
Type of Income	Percentage Growth					
	2011	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
Compensation of Employees	1.5	2.9	1.7	2.7	3.6	3.4
Operating Surplus\Mixed Income	2.3	1.4	(2.9)	4.9	7.0	2.8
Consumption of Fixed Capital	(1.2)	1.7	1.7	5.0	(0.9)	5.9
Taxes less Subsidies on Production and Imports	8.8	2.7	18.1	8.6	(1.5)	6.8
<b>Gross Domestic Product at Purchasers' Prices</b>	<b>2.5</b>	<b>2.3</b>	<b>2.7</b>	<b>4.4</b>	<b>3.4</b>	<b>3.9</b>

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In 2016 total GDP at current purchasers' prices posted another year of expansion at a faster rate than in 2015. Purchasers' price GDP grew by 3.9 percent in 2016 after growing by 3.4 percent in 2015 (see Table 10b above). All components increased in 2016 led by taxes less subsidies (net taxes) on production and imports (6.8%), followed by consumption of fixed capital (5.9%), compensation of employees (3.4%), and operating surplus/mixed income (2.8%).

Total compensation of employees (COE)<sup>11</sup> amounted to CI\$1,585.4 million in 2016, an increase of 3.4 percent when compared to 2015. This represents a marginal slowing relative to the 3.6 percent growth posted in 2015 but a continuation of its upward trajectory when compared to the 2.7 percent and 1.7 percent growth posted in 2014 and 2013, respectively. The growth in total compensation in 2016 reflects the 5.0

<sup>11</sup> 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.

percent increase in the number of employed persons which moved to 41,093 from 39,138 in 2015.

Operating surplus/mixed income<sup>12</sup> grew by 2.8 percent in 2016, lower than the 7.0 percent growth registered in 2015. The growth in 2016 is the third consecutive year of growth in operating surplus/mixed income. The growth indicates that businesses are continuing to capture the benefits of the current upswing in the economy.

Taxes (less subsidies) on production and imports<sup>13</sup> in 2016 grew by 6.8 percent, reversing the 1.5 percent decline registered in 2015. The growth in the net taxes component of GDP emanated from, among other things, an increase in the receipt from import duties and stamp duty on land transfers.

#### 4.2 Contribution to GDP at Purchasers' Prices

<b>TABLE 11: PERCENTAGE CONTRIBUTION to GDP BY INCOME AT CURRENT PRICES</b>						
<b>Type of Income</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014<sup>R</sup></b>	<b>2015<sup>R</sup></b>	<b>2016</b>
Compensation of Employees	50.8	51.1	50.6	49.7	49.8	49.6
Operating Surplus\Mixed Income	28.7	28.4	26.8	27.0	27.9	27.6
Consumption of Fixed Capital	6.3	6.3	6.2	6.3	6.0	6.1
Taxes less Subsidies on Production and Imports	14.2	14.2	16.3	17.0	16.2	16.7
<b>Gross Domestic Product at Purchasers' Prices</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

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Compensation of employees (COE) remained below 50 percent of GDP in 2016 for the third consecutive year. COE lost share in 2016 moving to 49.6 percent of GDP from the 49.8 percent posted for 2015.

The second largest contribution (27.6%) came from operating surplus/mixed income with a total value of CI\$883.4 million in 2016 (see Table 10a). Despite the 2.8 percent growth in this component in 2016, its share of GDP marginally declined to 27.6 percent, from 27.9 percent in 2015.

The share of net taxes posted the highest level of growth in 2016 increasing by 6.8 percent, which reverses the 1.5 percent decline registered in 2015. The corresponding share in GDP increased to 16.7 percent in 2016 from 16.2 percent in 2015.

<sup>12</sup> 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.

<sup>13</sup> This includes import duties, hotel occupancy tax, business and professional licences, building permit fees, property tax, stamp duties, etc.

Consumption of fixed capital<sup>14</sup> increased by 5.9 percent in 2016, reversing the 0.9 percent decline posted in 2015. With the increase in 2016, the share to GDP improved slightly to 6.1 percent from 6.0 percent in 2015.

### 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 2011-2016.

TABLE 12: COMPENSATION OF EMPLOYEES (CI\$'000)						
INDUSTRY	2011	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
Agriculture & Fishing	4,127.2	3,925.4	4,113.5	4,521.8	4,836.2	5,052.5
Mining & Quarrying	11,390.7	11,544.5	11,408.9	10,956.9	11,751.8	12,257.3
Manufacturing	10,755.1	11,258.0	11,432.0	11,657.2	12,600.2	13,036.1
Electricity, Gas & Air Conditioning Supply	12,731.5	12,808.7	12,671.4	13,347.0	12,347.3	12,141.4
Water Supply, Sewerage & Waste Management	15,888.0	19,000.8	19,108.3	19,049.2	19,753.6	20,258.4
Construction	53,464.1	54,547.5	52,377.1	52,388.3	55,274.8	56,913.0
Wholesale & Retail Trade	110,799.3	110,387.9	105,397.2	110,472.3	116,589.6	120,933.9
Transport & Storage	67,329.8	69,499.5	69,784.5	73,473.0	76,549.6	81,316.3
Hotels & Restaurants	82,021.6	83,355.8	85,932.0	87,932.4	90,980.3	94,709.5
Information & Communication	46,434.7	47,068.6	44,536.5	45,176.4	46,089.4	46,376.7
Financial & Insurance Services	341,896.8	349,801.5	357,340.3	355,984.3	360,977.1	374,174.4
Real Estate Activities	32,017.2	32,069.5	32,341.5	33,909.3	34,777.6	35,820.9
Professional, Scientific & Technical Activities	206,426.7	217,892.4	230,322.3	242,340.3	251,100.6	262,431.2
Administrative & Support Service Activities	42,171.4	44,618.0	46,647.3	48,685.6	50,261.9	51,846.0
Public Administration & Defense	160,562.5	166,511.1	166,835.0	170,827.0	179,745.8	183,573.2
Education Services	59,764.2	59,442.5	61,551.1	62,689.0	66,657.8	67,668.9
Health and Social Work	69,438.7	72,620.6	77,586.4	82,647.6	87,109.0	88,285.5
Other Services	51,273.8	51,928.7	53,100.5	54,781.5	56,578.8	58,635.8
<b>TOTAL</b>	<b>1,378,493.5</b>	<b>1,418,280.9</b>	<b>1,442,485.8</b>	<b>1,480,839.0</b>	<b>1,533,981.2</b>	<b>1,585,431.0</b>

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The distribution of total compensation in the Cayman Islands was dominated by the following three industries in 2016:

- The financial and insurance services industry with CI\$374.2 million in compensation or 23.6 percent of the total compensation;
- Professional, scientific and technical activities (mainly legal and accounting services) with CI\$262.4 million or 16.6 percent of total compensation; and

<sup>14</sup> 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.



- Public administration & defense with CI\$183.6 million or 11.6 percent of total compensation.

The three above-mentioned industries accounted for 51.8 percent of the total compensation generated in the Cayman Islands in 2016. This represents a slight increase from the 51.6 percent recorded in 2015.

#### 4.3.2 Operating surplus/mixed income<sup>15</sup>

TABLE 13: OPERATING SURPLUS AND MIXED INCOME (CI\$'000)						
INDUSTRY	2011	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
Agriculture & Fishing	4,162.6	4,638.5	4,616.9	5,600.8	6,483.0	7,241.2
Mining & Quarrying	4,639.5	5,637.8	6,228.4	5,388.9	6,074.3	6,693.0
Manufacturing	10,962.3	11,599.8	12,206.0	13,414.5	12,971.9	14,401.5
Electricity, Gas & Air Conditioning Supply	22,615.7	20,879.5	23,407.4	22,559.9	25,235.4	28,116.7
Water Supply, Sewerage & Waste Management	11,393.5	10,417.7	9,024.4	10,729.9	12,075.6	13,887.1
Construction	26,282.3	27,552.5	33,005.4	36,547.0	39,767.5	48,369.1
Wholesale & Retail Trade	75,446.3	82,535.6	92,108.3	94,263.7	95,547.7	97,783.5
Transport & Storage	23,550.9	23,579.6	27,270.4	32,581.0	37,394.4	37,265.9
Hotels & Restaurants	58,322.0	65,049.8	74,569.2	88,277.3	95,241.1	100,810.3
Information & Communication	28,126.4	28,328.6	29,765.7	27,615.7	35,096.1	36,430.4
Financial & Insurance Services	546,690.5	558,986.3	506,782.1	509,844.4	542,077.1	539,619.0
Real Estate Activities	158,201.0	161,122.4	157,110.1	158,506.8	160,761.2	163,513.8
Professional, Scientific & Technical Activities	121,827.9	124,705.3	121,914.3	128,996.4	135,102.9	141,293.3
Administrative & Support Service Activities	5,041.4	6,091.2	3,923.1	3,931.1	3,511.1	3,898.9
Public Administration & Defense	-	-	-	-	-	-
Education Services	2,961.5	3,336.9	3,710.1	4,152.1	4,738.0	7,714.5
Health and Social Work	6,374.8	7,330.5	8,204.6	6,060.6	6,469.0	8,124.0
Other Services	30,934.5	35,380.2	40,431.9	45,076.3	45,833.7	47,275.5
<b>Sub-Total</b>	<b>1,137,533.2</b>	<b>1,177,172.2</b>	<b>1,154,278.4</b>	<b>1,193,546.5</b>	<b>1,264,380.1</b>	<b>1,302,437.3</b>
Less Financial Services Indirectly Measured (FISIM)	360,124.8	388,932.1	388,611.3	390,540.3	404,784.1	419,014.2
<b>TOTAL</b>	<b>777,408.3</b>	<b>788,240.1</b>	<b>765,667.2</b>	<b>803,006.3</b>	<b>859,596.0</b>	<b>883,423.1</b>

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<sup>15</sup> As shown in Table 13, the total amount of this income type comprises two parts:

- (a) The amount before deducting implicit charges for financial intermediation services (FISIM) across industries, equivalent to CI\$1,302.4 million in 2016; and
- (b) The total amount after deducting overall FISIM (CI\$883.4 million). The FISIM paid by producers is part of their intermediate consumption (goods and services that are used up in the production process, excluding fixed assets whose consumption is recorded as consumption of fixed capital). Ideally, FISIM should be apportioned across the various spending industries. However the currently available data does not permit this exercise.
- (c) Financial intermediation services indirectly measured (FISIM) is an indirect measure of the value of financial intermediation services produced by providers of financial intermediation services (e.g. deposit-taking banks, other monetary financial institutions practising financial intermediation, and other monetary financial institutions) but for which financial institutions do not charge explicitly.



The three largest contributors to operating surplus/mixed income in 2016 were financial and insurance services, real estate activities and professional, scientific and technical activities, accounting for 64.8 percent of the total. This represents a decline compared to the 66.3 percent recorded in 2015.

Financial and insurance services accounted for the largest share of operating surplus/mixed income of CI\$539.6 million in 2016. The second largest share was recorded by the real estate activities (CI\$163.5 million), followed by professional, scientific and technical activities with CI\$141.3 million.

### 4.3.3 Consumption of fixed capital

TABLE 14: CONSUMPTION OF FIXED CAPITAL (CI\$'000)						
INDUSTRY	2011	2012	2013	2014 <sup>R</sup>	2015 <sup>R</sup>	2016
Agriculture & Fishing	662.4	693.8	644.5	668.9	663.3	669.2
Mining & Quarrying	2,408.6	2,613.7	2,427.6	2,512.8	2,470.2	2,480.0
Manufacturing	1,245.6	1,214.5	1,388.6	1,461.8	1,390.3	1,366.0
Electricity, Gas & Air Conditioning Supply	18,017.9	19,957.7	21,336.4	20,759.3	22,220.8	25,243.7
Water Supply, Sewerage & Waste Management	5,985.5	6,113.4	5,858.0	5,872.1	5,828.5	6,376.5
Construction	2,525.2	2,483.9	2,334.6	2,187.0	2,175.6	2,373.7
Wholesale & Retail Trade	20,618.8	20,762.7	20,874.1	23,116.7	23,228.0	24,423.2
Transport & Storage	9,245.9	9,665.1	10,112.9	10,988.5	10,592.0	10,340.4
Hotels & Restaurants	6,516.2	6,677.1	7,424.1	7,519.7	7,163.3	7,285.8
Information & Communication	20,040.3	19,408.3	18,422.3	23,512.4	20,314.8	19,627.7
Financial & Insurance Services	27,214.6	26,757.1	27,860.6	27,270.3	27,728.0	27,935.5
Real Estate Activities	20,894.5	19,987.3	20,357.2	20,701.1	20,587.0	20,902.7
Professional, Scientific & Technical Activities	7,180.5	7,503.8	7,356.1	7,435.7	7,319.9	7,853.1
Administrative & Support Service Activities	5,301.5	4,718.4	4,966.6	5,467.4	5,972.3	6,253.1
Public Administration & Defense	9,739.3	10,761.7	10,788.4	11,157.6	10,693.3	11,100.7
Education Services	4,359.1	5,549.7	5,685.7	5,606.6	5,708.8	5,607.6
Health and Social Work	3,949.1	4,035.7	3,948.6	4,202.8	4,431.1	9,615.1
Other Services	6,279.3	6,155.1	6,226.6	6,527.0	6,736.8	6,629.6
<b>TOTAL</b>	<b>172,184.2</b>	<b>175,058.9</b>	<b>178,012.8</b>	<b>186,967.8</b>	<b>185,223.8</b>	<b>196,083.5</b>

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Consumption of fixed capital or the depreciation cost of capital represented only 6.1 percent of the GDP in 2016 (see Table 11). This represents a slight increase in the share from the 6.0 percent posted for 2015.

As presented in Table 14 above, the largest amounts of depreciation in 2016 occurred in financial and insurance services (CI\$27.9 million) due to the size of this industry relative to the economy. This is followed by electricity, gas & air conditioning supply services (CI\$25.2 million), wholesale and retail trade activities (CI\$24.4 million), real estate

activities (CI\$20.9 million), and information and communication services (CI\$19.6 million). Notwithstanding their relatively small contribution to GDP, electricity services and information and communication have significant depreciation 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	2011	2012	2013	2014	2015	2016
Other Taxes less Subsidies on Production	191,169.6	193,805.0	262,897.9	285,894.3	281,776.1	298,218.3
Agriculture & Fishing	274.1	275.6	302.7	349.1	408.5	410.5
Mining & Quarrying	185.5	195.1	206.6	160.9	169.4	177.8
Manufacturing	318.9	345.7	349.3	330.5	341.6	359.5
Electricity, Gas & Air Conditioning Supply	1,870.0	2,083.6	2,319.8	1,623.0	1,700.4	1,797.0
Water Supply, Sewerage & Waste Management	147.6	164.4	157.9	150.6	174.0	211.1
Construction	1,588.7	1,502.2	1,814.9	1,996.16	2,254.22	2,466.87
Wholesale & Retail Trade	4,726.9	4,843.7	5,852.0	5,725.0	6,285.0	7,143.1
Transport & Storage	572.9	578.8	613.8	768.0	802.1	811.0
Hotels & Restaurants	946.0	994.2	1,013.3	1,335.4	1,557.4	1,683.5
Information & Communication	7,075.5	7,541.0	8,164.7	8,125.7	8,542.5	9,045.3
Financial & Insurance Services	151,375.0	151,567.8	211,814.2	232,313.1	226,011.3	237,533.7
Real Estate Activities	9,476.0	10,039.9	12,309.9	12,509.0	12,255.2	12,716.1
Professional, Scientific & Technical Activities	10,999.4	11,929.1	15,843.8	17,986.1	18,649.5	21,057.3
Administrative & Support Service Activities	1,025.8	1,112.5	1,477.7	1,717.6	1,773.7	1,905.2
Public Administration & Defense	8.2	17.5	16.3	21.5	28.6	22.0
Education Services	47.5	50.6	55.6	59.1	60.1	59.6
Health and Social Work	154.9	154.0	187.8	261.9	294.4	306.2
Other Services	376.8	409.2	397.8	461.6	468.0	512.5
Taxes less Subsidies on Products	193,406.0	201,003.2	203,289.8	220,599.2	217,042.6	234,705.5
<b>TOTAL</b>	<b>384,575.6</b>	<b>394,808.2</b>	<b>466,187.7</b>	<b>506,493.4</b>	<b>498,818.6</b>	<b>532,923.7</b>

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.

Net other taxes on production accounted for 56.0 percent of the total in 2016, a decline from the 56.5 percent in 2015. Despite the decline in the ratio, net taxes on production increased to CI\$298.2 million in 2016 from CI\$281.8 million in 2015, a 5.8 percent increase. This increase is due, in part, to an increase in revenue generated from financial and insurance service licences (e.g. mutual fund licences, security investment licences, insurance licences, etc.).

The industry breakdown of other taxes on production shows that financial and insurance services accounted for 79.7 percent of the total in 2016, a decline from the

80.2 percent in 2015. Despite the continued decline in share, the activity remains the largest revenue base for the government.

## 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. This is the difference between gross output (essentially sales) of producers and the value of their intermediate inputs (that is purchases of commodities that are used up in the production of other commodities):

$$\text{Gross Output} - \text{Intermediate Input} = \text{Value Added}$$

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
		<i>Market</i>	95
		<i>For own final use</i>	5
		<i>Other non-market</i>	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 SNA93 recommends basic prices for the valuation of output; intermediate consumption should be valued at purchasers' price.

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:

$$\text{GDP at current prices} = \text{Quantity}_t \times \text{Price}_t$$

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

$$\text{GDP at constant prices} = \text{Quantity}_t \times \text{Price}_0$$

(Current quantities of goods and services produced multiplied by their prices in a year chosen as the base year)<sup>16</sup>.

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.<sup>17</sup> 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 consistent 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 sensitive to errors in other industries and hence extensively used.<sup>18</sup> 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

<sup>16</sup> The base year chosen for the Cayman Islands System of National Accounts is 2007.

<sup>17</sup> In the base year the current and constant estimates are the same.

<sup>18</sup> 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.

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.

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.

$$\begin{aligned}
 \text{GDP} &= \text{Compensation of Employees} \\
 &+ \text{Consumption of Fixed Capital} \\
 &+ \text{Operating Surplus} \\
 &+ \text{Taxes on production and imports} \\
 &- \text{Subsidies on production and imports}
 \end{aligned}$$

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 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, stamp duties).

#### **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 employees, 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)

## 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 SNA93 manual.<sup>19</sup> In accordance with SNA93 and ISIC guidelines, business units were assigned codes based on their principal economic activity.<sup>20</sup> 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.

### 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

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<sup>19</sup> The System of National Accounts Manual 1993 (SNA93) 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. The SNA 2008 is now available and aspects have been incorporated in the Cayman Islands' National Accounts.

<sup>20</sup> The principal activity of a business is the activity whose value added exceeds that of any other activity carried out by the business.

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 2007 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 some groups within the agriculture 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 (e.g. for the 2016 report, estimates for 2014 and 2015 are revised as necessary).

**APPENDIX 3: 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