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# THE CAYMAN ISLANDS' SYSTEM OF NATIONAL ACCOUNTS 2008-2009

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THE ECONOMICS AND STATISTICS OFFICE  
PORTFOLIO OF FINANCE AND ECONOMICS



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**ABBREVIATIONS AND ACRONYMS**

AAC:	Aggregate Advisory Committee
ANA:	Annual National Accounts
ANAS:	Annual National Accounts Survey
BR:	Business Register
CARTAC:	Caribbean Regional Technical Assistance Centre
CBBEC	Classification by Broad Economic Categories
CIDOT:	Cayman Islands Department of Tourism
CIF:	Cost, Insurance, Freight
CIIB:	Cayman Islands Investment Bureau
CIMA:	Cayman Islands Monetary Authority
CISNA:	Cayman Islands System of National Accounts
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
ISIC:	International Standard Industrial Classification of all Economic Activity
LFS:	Labour Force Survey
NEC:	Not Elsewhere Classified
NPISG:	Non-Profit Institutions Serving Government
NPISH:	Non-Profit Institutions Serving Household
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 Department

## 1. EXECUTIVE SUMMARY

- 1.1 This report of the Cayman Islands' SNA exclusively focuses on the results of the estimation of the gross domestic product (GDP) using the production approach, where GDP is obtained by summing the value added of all industries. (Value added is equal to gross value of outputs minus the value of intermediate inputs).
- 1.2 The overall GDP estimate comprises the value added of 18 industries as classified using the International Standard Industrial Classification 4 (ISIC 4).
- 1.3 GDP estimates in this report are presented in basic prices and producer prices. The main difference between basic and purchasers' price is the taxes less subsidies (net taxes) on products. Taxes of this type in the Cayman Islands are primarily taxes and duties on imports; and other taxes on product excluding taxes and duties on import (e.g. hotel occupancy tax).
- 1.4 In 2009, the GDP of the Cayman Islands at basic prices was recorded at \$2,541.56 million while the per capita GDP was estimated at \$46,278.30.
- 1.5 Measured in terms of 2007 prices (also known as GDP in constant prices or GDP in real terms), GDP in 2009 amounted to \$2,433.96 million. The corresponding per capita GDP is \$44,319.20.
- 1.6 The estimated GDP in 2009 represents a reduction in real terms of 7.0 percent from the estimate for 2008. The top five industries that contributed to this decline and their corresponding changes from 2008 are: (a) construction (-29.3%); (b) financial and insurance services (-14.4%); (c) wholesale and retail (-11.5%); (d) hotels and restaurants (-10.2%); and (e) transport and storage (-8.1%).
- 1.7 On the other hand, the following industries posted positive growth rates in 2009: (a) electricity, gas and air conditioning supply (1.7%); (b) water supply, sewerage and waste management (5.7%); (c) information and communication (6.4%); and (d) professional, scientific and technical activities consisting primarily of legal and accounting activities (1.7%).
- 1.8 Despite the decline of economic activity in the financial and insurance services in 2009, its contribution to GDP remained the highest at 42.9 percent. The other sectors with the top five percentage contributions to GDP are as follows: (a) professional, scientific and technical activities consisting primarily of legal and accounting activities (13.3%); (b) wholesale and retail trade (8.9%); (c) real estate activities (8.7%); (d) public administration and defense consisting primarily of central government operations (7.5%); (e) information and communication (5.0%); and (f) hotels and restaurants (5.0%).

## 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 (2005 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. Comply with data requirements of foreign investors and creditors. For instance, these are required for inclusion in official borrowing documents (i.e., Offering Memorandum or Private Placement Memorandum). These statistics are key in making an assessment of the worthiness of the jurisdiction as an investment site and/or the worthiness of its entities as borrowers;
- c. 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;
- d. 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.
- e. Provide data necessary for government departments and business associations to monitor the economic performance and contribution of their respective sectors; and
- f. Provide data that can assist government departments, local businesses and non-government organizations in preparing business plans or 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.

## 2.2. Key Data Sources

The SNA estimates in this report are based on the Annual National Accounts Survey (ANAS) conducted during the period April to May 2010 among all businesses and establishments included in the ESO Business Register. This was augmented by secondary data provided by various government ministries, departments and statutory authorities including the Cayman Islands Monetary 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' price (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 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).



### 3. GROSS DOMESTIC PRODUCT ESTIMATES

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

This report of the Cayman Islands' SNA exclusively focuses on the results of the estimation of the gross domestic product (GDP) using the production approach, where GDP is obtained by summing the value added of all industries. (Value added is equal to gross value of outputs minus the value of intermediate inputs)<sup>1</sup>. The overall GDP estimate comprises the value added of the 18 industries; these 18 industries are further categorized into goods-producing or service-producing industries.

This section and the succeeding sections present a series of tables showing the preliminary estimates of GDP by industry as follows:

- GDP main aggregates and per capita indicators (Table 1);
- GDP by industrial origin (Table 2);
- Goods and service producing industries' contribution to GDP at constant basic prices (Table 3);
- Industry ranking by contribution to GDP at constant (2007) basic prices (Table 4);
- GDP rate of growth at constant prices (Table 5);
- GDP at current basic prices (Table 6); and
- Detailed value added by industries (Table 7);

2009 was a challenging year for the Cayman Islands economy as GDP declined by 7.0 percent to \$2,433,963.9 thousand in 2009, down from \$2,617,540.7 thousand in 2008. The performance of the economy was adversely impacted by the global economic crisis and exacerbated by the fact that the Cayman economy is service-oriented and driven largely by off-shore services.

The total value of the Cayman Islands GDP for the years 2006 to 2009 are presented in Table 1 below. The amounts pertain to all entities that have a physical presence in the Cayman Islands; therefore, they exclude entities registered in the Cayman Islands but have no physical presence in the country. Table 1 shows the current and constant (or 2007) price estimates of GDP (as well as per capita indicators) valued in both basic and purchasers' prices.

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<sup>1</sup> See Appendix 1 for a more detailed explanation of the estimation methodology

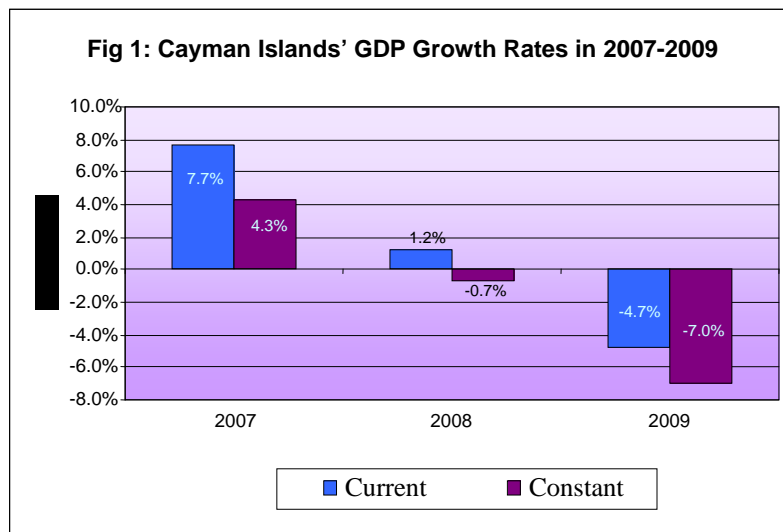
**Table 1: System of National Accounts Main Aggregates and Per Capita Indicators**

Main Aggregates (CI\$'000)	2006	2007	2008	2009
GDP (Current Basic Prices)	2,448,880.6	2,637,056.2	2,667,441.9	2,541,559.3
GDP (Constant Basic Prices)	2,528,188.9	2,637,056.1	2,617,540.7	2,433,963.9
GDP (Current Purchasers' Prices)	2,672,515.7	2,847,979.1	2,883,178.1	2,715,751.6
GDP (Constant Purchasers' Prices)	2,760,645.0	2,847,979.0	2,824,840.8	2,601,863.8
Mean Population	51,992	54,079	55,997	54,919
Per Capita Indicators (CI\$)	2006	2007	2008	2009
GDP (Current Basic Prices)	47,093.9	48,744.1	47,632.9	46,294.3
GDP (Constant Basic Prices)	48,619.0	48,744.1	46,741.8	44,334.5
GDP (Current Purchasers' Prices)	51,402.4	52,663.3	51,488.1	49,450.1
GDP (Constant Purchasers' Prices)	53,097.5	52,663.3	50,446.6	47,376.4

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

Figure 1 below shows the comparative growth rates of GDP at constant and current basic prices. GDP at constant prices grew declined by 7.0 percent in 2009, which represents a further deterioration from the decline of 0.7 percent in 2008 and the growth of 4.3 percent in 2007. A similar trend is reflected when comparing GDP at current prices.



### 3.2 GDP by industrial origin

The 2008-2009 report is presented using the revised ISIC 4 classification while the 2006-2007 report was based on the ISIC 3.1. However, to maintain comparability across all four years, the estimates for 2006 and 2007 were revised to conform to the new ISIC 4 presentation. The international classification systems respond to the need to identify new economic categories so as to better reflect the current economic phenomena. For example the Information and Communication category that has been introduced is one such innovation.<sup>2</sup>

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN				
TABLE 2: GDP AT CONSTANT BASIC & PURCHASERS' PRICES, 2007=100 (CI\$' 000)				
INDUSTRIAL SECTORS	2006	2007	2008	2009
01 Agriculture & Fishing	7,174	7,650	8,069	8,882
02 Mining & Quarrying	30,260	29,577	20,764	19,494
03 Manufacture	22,713	23,678	25,463	23,665
04 Electricity, Gas & Air Conditioning Supply	52,671	57,083	58,318	59,303
05 Water Supply, Sewerage & Waste Management	32,708	34,174	34,716	36,689
06 Construction	148,790	139,840	142,352	100,629
07 Wholesale & Retail Trade	245,320	236,399	244,540	216,409
08 Transport & Storage	103,119	103,838	99,156	91,165
09 Hotels & Restaurants	124,141	133,481	134,321	120,628
10 Information & Communication	109,984	113,842	115,080	122,443
11 Financial & Insurance Services	1,190,797	1,267,654	1,219,557	1,044,073
12 Real Estate Activities	206,175	221,854	223,104	212,806
13 Professional, Scientific & Technical Activities	288,925	317,524	319,351	324,654
14 Administrative & Support Service Activities	51,486	54,700	54,233	50,536
15 Public Administration & Defense	170,524	174,343	188,139	181,578
16 Education Services	59,310	61,962	66,633	66,517
17 Health & Social Work	68,479	69,880	70,913	70,037
18 Other Services	85,467	86,677	80,376	76,218
Total	2,998,041	3,134,156	3,105,087	2,825,724
Less: Financial Services Indirectly Measured (FISIM)	469,852	497,100	487,546	391,760
<b>GDP at Constant Basic Prices</b>	<b>2,528,189</b>	<b>2,637,056</b>	<b>2,617,541</b>	<b>2,433,964</b>
Add: Taxes Less Subsidies on Products	232,456	210,923	207,300	167,900
<b>GDP at Constant Purchasers' Prices</b>	<b>2,760,645</b>	<b>2,847,979</b>	<b>2,824,841</b>	<b>2,601,864</b>

<sup>2</sup> The detailed ISIC 4 classification is presented in Appendix 3

### 3.3 Industry contribution to GDP

Table 3 shows the industries as goods-producing and service-producing. The service-producing industries contributed a combined share of 92.5 percent in 2008 and 93.7 percent in 2009 of the real GDP generated in the Cayman Islands' economy. This performance represents a slight increase in share from the 91.7 percent and 92.4 percent recorded in 2006 and 2007, respectively.

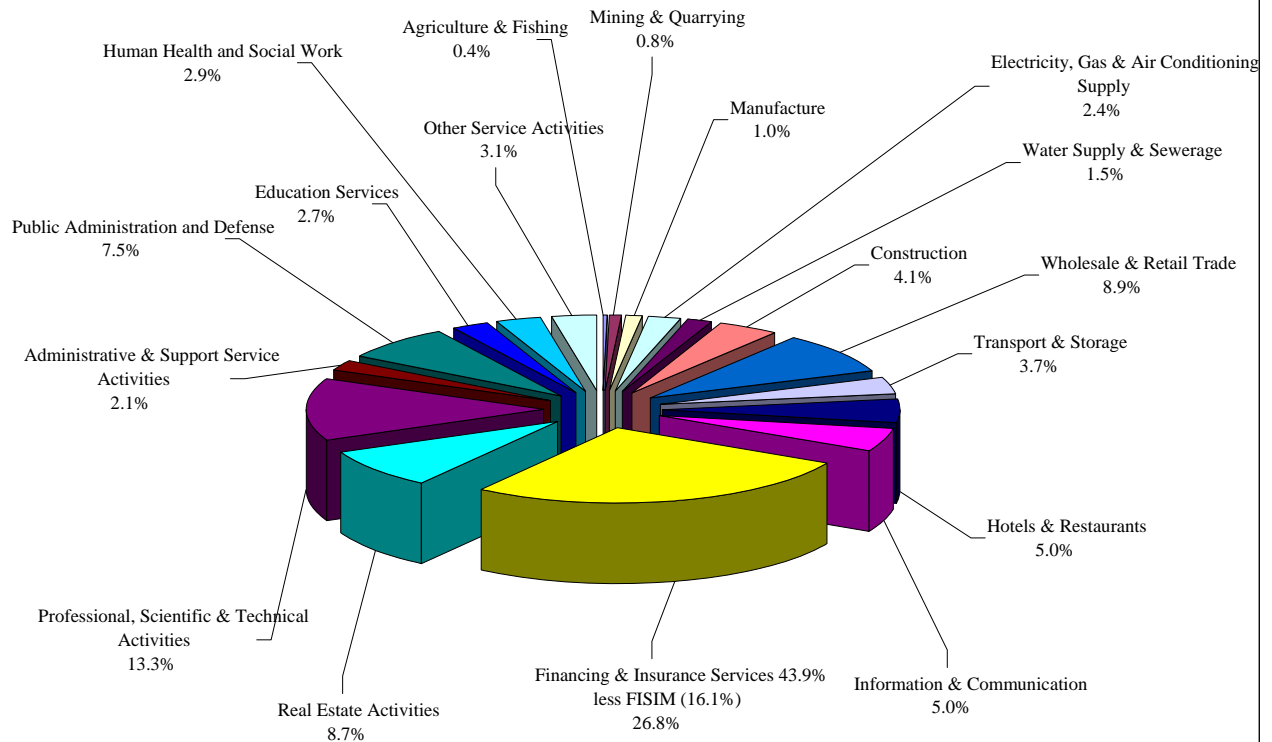
CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN				
TABLE 3: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT BASIC PRICES, 2007=100				
INDUSTRY	2006	2007	2008	2009
<b>Goods Producing Sector</b>	<b>8.3%</b>	<b>7.6%</b>	<b>7.5%</b>	<b>6.3%</b>
01 Agriculture & Fishing	0.3%	0.3%	0.3%	0.4%
02 Mining & Quarrying	1.2%	1.1%	0.8%	0.8%
03 Manufacture	0.9%	0.9%	1.0%	1.0%
06 Construction	5.9%	5.3%	5.4%	4.1%
<b>Service Producing Sector</b>	<b>91.7%</b>	<b>92.4%</b>	<b>92.5%</b>	<b>93.7%</b>
04 Electricity, Gas & Air Conditioning Supply	2.1%	2.2%	2.2%	2.4%
05 Water Supply, Sewerage & Waste Management	1.3%	1.3%	1.3%	1.5%
07 Wholesale & Retail Trade	9.7%	9.0%	9.3%	8.9%
08 Transport & Storage	4.1%	3.9%	3.8%	3.7%
09 Hotels & Restaurants	4.9%	5.1%	5.1%	5.0%
10 Information & Communication	4.4%	4.3%	4.4%	5.0%
11 Financial & Insurance Services	47.1%	48.1%	46.6%	42.9%
12 Real Estate Activities	8.2%	8.4%	8.5%	8.7%
13 Professional, Scientific & Technical Activities	11.4%	12.0%	12.2%	13.3%
14 Administrative & Support Service Activities	2.0%	2.1%	2.1%	2.1%
15 Public Administration & Defense	6.7%	6.6%	7.2%	7.5%
16 Education Services	2.3%	2.3%	2.5%	2.7%
17 Health & Social Work	2.7%	2.6%	2.7%	2.9%
18 Other Services	3.4%	3.3%	3.1%	3.1%
Less: Financial Services Indirectly Measured (FISIM)	18.6%	18.9%	18.6%	16.1%
<b>GDP at Constant Basic Prices</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

The industry data provides us with preliminary estimates of the contribution of the various industries to the Cayman Islands' GDP, and their relative ranking based on their contribution. Table 4 shows the contribution of the eighteen (18) industries as well as their ranking over the period. The rankings point to industry's relative importance (as it pertains to GDP) for the Cayman Islands' economy.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN								
TABLE 2: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT BASIC PRICES, 2007=100								
Ranking				INDUSTRY	% Contribution to GDP			
2006	2007	2008	2009		2006	2007	2008	2009
1	1	1	1	Financial & Insurance Services	47.1	48.1	46.6	42.9
2	2	2	2	Professional, Scientific & Technical Activities	11.4	12.0	12.2	13.3
3	3	3	3	Wholesale & Retail Trade	9.7	9.0	9.3	8.9
4	4	4	4	Real Estate Activities	8.2	8.4	8.5	8.7
5	5	5	5	Public Administration & Defense	6.7	6.6	7.2	7.5
8	8	8	6	Information & Communication	4.4	4.3	4.4	5.0
7	7	7	7	Hotels & Restaurants	4.9	5.1	5.1	5.0
6	6	6	8	Construction	5.9	5.3	5.4	4.1
9	9	9	9	Transport & Storage	4.1	3.9	3.8	3.7
10	10	10	10	Other Services	3.4	3.3	3.1	3.1
11	11	11	11	Health & Social Work	2.7	2.6	2.7	2.9
12	12	12	12	Education Services	2.3	2.3	2.5	2.7
13	13	13	13	Electricity, Gas & Air Conditioning Supply	2.1	2.2	2.2	2.4
14	14	14	14	Administrative & Support Service Activities	2.0	2.1	2.1	2.1
15	15	15	15	Water Supply, Sewerage & Waste Management	1.3	1.3	1.3	1.5
17	17	16	16	Manufacture	0.9	0.9	1.0	1.0
16	16	17	17	Mining & Quarrying	1.2	1.1	0.8	0.8
18	18	18	18	Agriculture & Fishing	0.3	0.3	0.3	0.4
				Less: Financial Services Indirectly Measured (FISIM)	18.6	18.9	18.6	16.1
				<b>GDP at Constant Basic Prices</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

- Financial and Insurance Services remains the single largest contributor accounting for 46.6 percent and 42.9 percent of total real GDP in 2008 and 2009 even though its share of GDP has declined over the previous two years. This is so because it was the industry most affected by the global economic crisis.
- The second largest contributor was Professional, Scientific & Technical Activities which increased its share over the review period moving from 12.2 percent in 2008 to 13.3 percent in 2009. This industry consists primarily of legal and accounting services;
- Other large contributors include Real Estate Activities accounting for 8.7 percent and Public Administration and Defence accounting for 7.5 percent in 2009. It should be pointed out that Public Administration and Defense, while maintaining its position, increased its share of GDP over the years, from 6.7 percent in 2006 to 7.5 percent in 2009.
- Also of note in 2009 is the changing of position between Information and Communication (at 6<sup>th</sup> place, up from 8<sup>th</sup> in 2008) and Construction (at 8<sup>th</sup> place, down from 6<sup>th</sup> place in the past years). The Information and Communication industry is one of the few industries that grew amidst the difficult economic climate.

**Fig 2: Industry Distribution of Cayman Islands GDP at Constant Basic Prices, 2009\***



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

### 3.4 GDP Rate of Growth by Industry

Table 5 shows the sharp movement of the combined goods-producing sectors of the economy in 2009 (-22.4%) as well the combined services-producing sectors (-8.1%).

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN			
TABLE 5: RATE OF GROWTH OF GDP AT CONSTANT BASIC & PURCHASERS' PRICES, 2007=100			
INDUSTRY	2007	2008	2009
<b>Goods Producing Sector</b>	<b>-3.9%</b>	<b>-2.0%</b>	<b>-22.4%</b>
01 Agriculture & Fishing	6.6%	5.5%	10.1%
02 Mining & Quarrying	-2.3%	-29.8%	-6.1%
03 Manufacture	4.3%	7.5%	-7.1%
06 Construction	-6.0%	1.8%	-29.3%
<b>Service Producing Sector</b>	<b>5.2%</b>	<b>-0.9%</b>	<b>-8.1%</b>
04 Electricity, Gas & Air Conditioning Supply	8.4%	2.2%	1.7%
05 Water Supply, Sewerage & Waste Management	4.5%	1.6%	5.7%
07 Wholesale & Retail Trade	-3.6%	3.4%	-11.5%
08 Transport & Storage	0.7%	-4.5%	-8.1%
09 Hotels & Restaurants	7.5%	0.6%	-10.2%
10 Information & Communication	3.5%	1.1%	6.4%
11 Financial & Insurance Services	6.5%	-3.8%	-14.4%
12 Real Estate Activities	7.6%	0.6%	-4.6%
13 Professional, Scientific & Technical Activities	9.9%	0.6%	1.7%
14 Administrative & Support Service Activities	6.2%	-0.9%	-6.8%
15 Public Administration & Defense	2.2%	7.9%	-3.5%
16 Education Services	4.5%	7.5%	-0.2%
17 Health & Social Work	2.0%	1.5%	-1.2%
18 Other Services	1.4%	-7.3%	-5.2%
Total	4.5%	-0.9%	-9.0%
Less: Financial Services Indirectly Measured (FISIM)	5.8%	-1.9%	-19.6%
<b>GDP at Constant Basic Prices</b>	<b>4.3%</b>	<b>-0.7%</b>	<b>-7.0%</b>
Add: Taxes Less Subsidies on Products	-9.3%	-1.7%	-19.0%
<b>GDP at Constant Purchasers' Prices</b>	<b>3.2%</b>	<b>-0.8%</b>	<b>-7.9%</b>

#### 3.4.1 Goods-producing industries

The output of the **goods-producing industries** declined by 22.4 percent in 2009 compared to 2008. All industries in this sector experienced decline in 2009 except for **Agriculture and Fishing** which grew by 10.1 percent.

Production in the **Mining and Quarrying** industry declined by 6.1 percent in 2009 when compared to 2008 as the demand for stone and marl by the construction industry fell.

The **Manufacturing** industry registered a decline in output of 7.1 percent in 2009 as aggregate demand fell.

The **Construction** industry declined by 29.3 percent in 2009, a deterioration from the 1.8 percent growth experienced the previous year. The decline in this industry is reflected in the decline in the value of building permits which moved from \$502.3 million in 2008 to \$355.0 million in 2009 and the value of project approvals which moved from \$208.8 million in 2008 to \$434.2 million in 2009. The value of imported construction materials also declined by 40.4 percent.

### 3.4.2 Service-producing industries

The **service-producing industries** declined by 0.9 percent and 8.1 percent in 2008 and 2009 respectively, reversing the 5.2 percent growth experienced in 2007. Most industries experienced declines in 2009 as the impact of the global economic downturn on the domestic economy became more pronounced. However, there were sectors that experienced growth in 2009 such as Electricity, Water & Sewerage, Information & Communication, and Professional, Scientific & Technical Activities.

**Electricity, Gas & Air Conditioning Supply** grew by 2.2 and 1.7 percent in 2008 and 2009 resulting mainly from increased production of electricity. Total electricity consumed increased from 553,565 megawatt hours (Mwhrs) in 2007 to 565,543 Mwhrs in 2008 and 575,094 Mwhrs in 2009.

**Water Supply, Sewerage and Waste Management** also expanded over the review period registering growth of 1.6 percent in 2008 and 5.7 percent in 2009. Sales of desalinated water by Cayman Water Company and Water Authority increased from 1,657 million US gallons in 2007 to 1685 million in 2008 and 1780 million in 2009.

The trend of real GDP growth for the **Wholesale & Retail Trade** was reversed from the 3.4 percent growth in 2008 to a decline of 11.5 percent in 2009. This decline was influenced mainly by a 4.8-percent decrease in the value of imports of consumer goods and intermediate goods which moved from CI\$406.9 million in 2008 to CI\$387.3 million in 2009 and the imports of intermediate goods which declined by 16.7 percent. The decline in the resident population by 7.3 percent also negatively impacted this industry.

**Transport and Storage** contracted by 4.5 percent in 2008 when compared to 2007. The negative trend persisted in 2009 when the sector declined by 8.1 percent as all sub-industries recorded lower levels of output. The biggest contributor to the overall decline was Transport Services which declined by 12.2 percent in 2009 resulting from declines of 4.9 percent in Land Transport, 3.3 percent in Sea Transport and 18.5 percent in Air Transport. The decline in Air Transport is due mainly to the decline in international



travel resulting from the world economic recession. There was also decline in air cargo as imports fell. The decline in the Water Transport sub-industry was due to decreased activities at the port as imports fell. Calls by cargo ships declined from 522 in 2008 to 461 in 2009 while landed cargo declined from 313 thousand tons in 2008 to 260.8 thousand tons in 2009. The lower output level in the Land Transport in 2009 was attributed to the fall in haulage services and tourist arrivals.

The **Hotel and Restaurants** industry was not spared from the impact of the global recession as it registered a decline of 10.2 percent. The contraction was fuelled by a decline in the number of stay-over visitors to the islands which moved from 302,879 in 2008 to 271,958 in 2009. Hurricane Paloma impacted the number of rooms available in the Sister Islands.

**Information and Communication** seemed to have withstood the general decline of the domestic economy, registering growth of 1.1 percent and 6.4 percent in 2008 and 2009, respectively. The telecommunication group continues to benefit from competition in the marketplace as companies introduce new and innovative products to keep existing customers and attract new ones.

**Financial and Insurance Services** was negatively impacted by the global economic downturn, registering a 3.8 percent decline in 2008 and 14.4 percent in 2009. All sub-industries - Monetary Institutions, Other Financial Institutions & Financial Services, and Insurance & Pension Funding - registered declines.

**Real Estate Activities** contracted in 2009 by 4.6 percent, reversing the marginal growth of 0.6 percent experienced in 2008. There were declines in all groups except for Operation of Owner-Occupied Dwellings which grew by 0.2 percent in 2009 compared to 2008. The declines in this sector are due to falling volume of sales coupled with significant reductions in sales and listing prices which may be related to the uncertainty resulting from the economic downturn.

The **Professional, Scientific & Technical Activities** sector showed some resilience to the general economic downturn as it recorded growth of 0.6 percent and 1.7 percent in 2008 and 2009, respectively. This performance was due mainly to Legal Services and Accounting & Auditing Services sector. However, this sub-sector's growth was offset by the decline of most of the other sub-sectors.

**Administrative & Support Service Activities** reversed the 6.2 percent growth experienced in 2007, declining by 0.9 percent in 2008 and 6.8 percent in 2009. The decline in the Rental of Transport Equipment was the main contributor to the contraction of this sector arising from the falling number of stay-over visitors.

Real GDP for **Public Administration and Defense** declined by 3.5 percent in 2009, reversing the growth of 7.9 percent registered in 2008. Over the period under review, Government maintained its focus on reducing cost in an effort to meet its fiscal targets.

The number of civil servants declined by 2.8 percent in 2009, moving to 3,694 in 2009 down from 3,801 in 2008.

**Education Services** declined marginally in 2009 by 0.2 percent reversing the 7.5 percent growth experienced in 2008. This decline in this industry is due partially to the streaming of government expenditure as it sought to manage its fiscal position while at the same time increasing student enrolment.

**Human Health and Social Work** grew by 1.5 percent in 2008 but declined by 1.2 percent in 2009 despite the growth in Private Health and Social Work by 3.4 percent

**Other Services** fell anew in 2009 by 5.2 percent, following the 7.3 percent decline posted in 2008. The sub-industries **Arts, Entertainment and Recreation** continued its decline in 2009 albeit at a slower rate when compared to 2008. The sector registered a decline of 12.6 percent in 2008 and 2.2 percent in 2009. The Diving and Related Activities product group was the main contributor to the sector's performance declining by 8.8 and 4.6 percent in 2008 and 2009 respectively.

The decline in the sub-sector **Other Service Activities** also continued, contracting by 3.5 percent in 2008 and 7 percent in 2009. All sub-sectors experienced declines over the review period. The main contributors to the performance of the sector came from Personal & Household Services and Private Households with Employed Persons. Personal and Household Services declined by 4.1 and 7.7 percent in 2008 and 2009, respectively. Private Households with Employed Persons contracted by 1.2 percent in 2008 and 7.3 percent in 2009 reflecting the fall in population by 7.3 percent.

Overall, 2009 was a challenging year for the Cayman Islands' economy as it grappled with the financial dislocation associated with the global downturn.

## 3.5 Sector GDP at Current Prices

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN				
TABLE 6: GDP AT CURRENT BASIC & PURCHASERS' PRICES (CI\$' 000)				
INDUSTRIAL SECTORS	2006	2007	2008	2009
01 Agriculture & Fishing	6,756	7,650	8,113	8,943
02 Mining & Quarrying	30,523	29,577	22,413	19,533
03 Manufacture	21,730	23,678	27,520	24,577
04 Electricity, Gas & Air Conditioning Supply	49,508	57,083	46,759	51,331
05 Water Supply, Sewerage & Waste Management	32,863	34,174	32,155	34,780
06 Construction	141,066	139,840	147,867	106,591
07 Wholesale & Retail Trade	234,088	236,400	242,926	220,612
08 Transport & Storage	102,358	103,838	104,527	95,731
09 Hotels & Restaurants	122,693	133,481	139,502	129,245
10 Information & Communication	103,920	113,842	117,132	122,094
11 Financial & Insurance Services	1,168,892	1,267,654	1,246,363	1,114,647
12 Real Estate Activities	202,901	221,854	232,919	223,132
13 Professional, Scientific & Technical Activities	283,304	317,524	331,848	333,272
14 Administrative & Support Service Activities	50,421	54,700	55,786	53,156
15 Public Administration & Defense	155,669	174,343	192,106	184,689
16 Education Services	56,113	61,962	68,184	68,524
17 Health & Social Work	64,765	69,880	67,874	67,277
18 Other Services	82,534	86,676	83,812	81,857
Total	2,910,104	3,134,157	3,167,804	2,939,992
Less: Financial Services Indirectly Measured (FISIM)	461,223	497,100	500,362	398,432
<b>GDP at current basic prices</b>	<b>2,448,881</b>	<b>2,637,056</b>	<b>2,667,442</b>	<b>2,541,559</b>
Add: Taxes Less Subsidies on Products	223,635	210,923	215,736	174,192
<b>GDP at Current Purchasers' Prices</b>	<b>2,672,516</b>	<b>2,847,979</b>	<b>2,883,178</b>	<b>2,715,752</b>

## 3.6 Detailed Value Added by Industries

Table 7: DETAILED VALUE ADDED BY INDUSTRY		CURRENT (CIS' 000)				CONSTANT (CIS' 000)			
INDUSTRIAL SECTOR		2006	2007	2008	2009	2006	2007	2008	2009
<b>AGRICULTURE &amp; FISHING</b>		<b>6,756.1</b>	<b>7,649.8</b>	<b>8,112.8</b>	<b>8,943.4</b>	<b>7,173.9</b>	<b>7,649.8</b>	<b>8,069.2</b>	<b>8,882.3</b>
Growing of Agricultural Crops		3,958.2	4,504.2	4,607.0	5,303.2	4,080.9	4,504.2	4,658.3	5,358.8
Farming of Animals		802.7	953.3	1,123.4	1,051.2	845.5	953.3	1,028.5	934.5
Capture Fishing		1,995.2	2,192.3	2,382.4	2,589.0	2,247.5	2,192.3	2,382.4	2,589.0
<b>MINING &amp; QUARRYING</b>		<b>30,523.2</b>	<b>29,576.9</b>	<b>22,412.8</b>	<b>19,533.0</b>	<b>30,260.1</b>	<b>29,576.9</b>	<b>20,764.3</b>	<b>19,493.6</b>
Quarrying incl. Stone, Sand and Gravel		30,523.2	29,576.9	22,412.8	19,533.0	30,260.1	29,576.9	20,764.3	19,493.6
<b>MANUFACTURE</b>		<b>21,729.9</b>	<b>23,678.1</b>	<b>27,519.7</b>	<b>24,577.2</b>	<b>22,712.7</b>	<b>23,678.1</b>	<b>25,463.1</b>	<b>23,664.5</b>
Food Products, Beverages and Tobacco Products		10,312.5	10,676.2	11,408.8	11,232.7	10,817.3	10,676.2	11,329.6	10,727.2
Builders' Carpentry and Joinery, incl. Furniture and Rubber and Plastic Product		2,874.3	3,206.3	3,320.0	3,092.3	2,940.8	3,206.3	3,194.1	3,000.1
Non-Metallic Mineral Products (incl. Glass and Glass Products, Concrete, Cement)		3,338.3	3,833.8	3,525.1	2,546.2	3,533.4	3,833.8	3,394.2	2,483.4
Basic Metals, Fabricated Metal Products, Machinery & Equipment		2,395.2	2,571.1	5,876.9	4,719.0	2,440.2	2,571.1	5,259.9	5,357.4
Other Manufacturing Goods n.e.c.		2,809.6	3,390.7	3,388.9	2,987.0	2,981.0	3,390.7	2,285.3	2,096.4
<b>ELECTRICITY, GAS &amp; AIR CONDITIONING SUPPLY</b>		<b>49,508.0</b>	<b>57,083.0</b>	<b>46,759.0</b>	<b>51,331.1</b>	<b>52,671.2</b>	<b>57,083.0</b>	<b>58,318.2</b>	<b>59,303.0</b>
Production, Collection and Distribution of Electricity and the Manufacture of Ice		49,508.0	57,083.0	46,759.0	51,331.1	52,671.2	57,083.0	58,318.2	59,303.0
<b>WATER SUPPLY, SEWERAGE &amp; WASTE MANAGEMENT</b>		<b>32,862.7</b>	<b>34,174.2</b>	<b>32,154.7</b>	<b>34,779.9</b>	<b>32,707.7</b>	<b>34,174.2</b>	<b>34,715.5</b>	<b>36,688.7</b>
Water Collection, Treatment and Distribution, Sewerage and Waste Collection		32,862.7	34,174.2	32,154.7	34,779.9	32,707.7	34,174.2	34,715.5	36,688.7
<b>CONSTRUCTION</b>		<b>141,066.2</b>	<b>139,840.1</b>	<b>147,866.7</b>	<b>106,591.1</b>	<b>148,790.2</b>	<b>139,840.1</b>	<b>142,352.1</b>	<b>100,629.2</b>
Construction (incl building installation, building completion, etc.)		141,066.2	139,840.1	147,866.7	106,591.1	148,790.2	139,840.1	142,352.1	100,629.2
<b>WHOLESALE AND RETAIL TRADE &amp; REPAIRS</b>		<b>234,088.0</b>	<b>236,400.0</b>	<b>242,926.0</b>	<b>220,612.0</b>	<b>245,320.0</b>	<b>236,399.0</b>	<b>244,540.0</b>	<b>216,409.0</b>
Wholesale & Retail Trade		234,088.0	236,400.0	242,926.0	220,612.0	245,320.0	236,399.0	244,540.0	216,409.0
<b>TRANSPORT AND STORAGE</b>		<b>102,358.2</b>	<b>103,837.9</b>	<b>104,527.1</b>	<b>95,730.6</b>	<b>103,118.6</b>	<b>103,837.9</b>	<b>99,155.7</b>	<b>91,164.6</b>
Transport		40,451.6	41,897.6	43,921.3	38,350.5	40,382.7	41,897.6	42,673.7	37,460.2
Supporting Activities for Transport (incl Cargo)		54,367.2	54,513.4	52,977.6	50,053.2	54,789.9	54,513.4	49,408.1	46,861.2
Post and Courier Activities		7,539.4	7,426.9	7,628.2	7,326.8	7,945.9	7,426.9	7,073.9	6,843.2
<b>HOTELS &amp; RESTAURANTS</b>		<b>122,692.9</b>	<b>133,481.4</b>	<b>139,501.6</b>	<b>129,245.1</b>	<b>124,140.7</b>	<b>133,481.4</b>	<b>134,321.4</b>	<b>120,627.7</b>
Hotels and Restaurants (incl Bars)		122,692.9	133,481.4	139,501.6	129,245.1	124,140.7	133,481.4	134,321.4	120,627.7
<b>INFORMATION AND COMMUNICATION</b>		<b>103,919.9</b>	<b>113,842.0</b>	<b>117,131.5</b>	<b>122,094.0</b>	<b>109,983.5</b>	<b>113,842.0</b>	<b>115,080.2</b>	<b>122,443.2</b>
Motion Picture Projection, Radio & TV Programming and Broadcasting and Telecommunications Activities		85,528.2	93,725.9	96,232.1	100,391.8	91,390.5	93,725.9	94,509.8	101,001.9
Publishing, Printing and Computer & Data Processing Services		18,391.7	20,116.1	20,899.4	21,702.2	18,593.0	20,116.1	20,570.4	21,441.3

Table 7 cont'd: DETAILED VALUE ADDED BY INDUSTRY	CURRENT (CIS\$ '000)				CONSTANT (CIS\$ '000)			
INDUSTRIAL SECTOR	2006	2007	2008	2009	2006	2007	2008	2009
<b>FINANCIAL &amp; INSURANCE SERVICES</b>	<b>1,168,892.4</b>	<b>1,267,654.0</b>	<b>1,246,363.4</b>	<b>1,114,646.6</b>	<b>1,190,796.8</b>	<b>1,267,654.0</b>	<b>1,219,557.2</b>	<b>1,044,073.2</b>
Monetary Institutions (incl. CIMA)	704,247.3	763,194.1	745,029.0	657,260.6	713,942.5	763,194.1	730,323.1	592,193.2
Other Financial Institutions & Financial Services	266,489.8	285,263.0	280,724.7	257,309.1	270,358.8	285,263.1	269,650.3	252,776.7
Insurance, Pension Funding (incl. Auxillary Activities)	198,155.2	219,196.9	220,609.7	200,076.9	206,495.5	219,196.9	219,583.8	199,103.3
<b>REAL ESTATE ACTIVITIES</b>	<b>202,901.3</b>	<b>221,853.9</b>	<b>232,919.0</b>	<b>223,132.3</b>	<b>206,174.7</b>	<b>221,853.9</b>	<b>223,104.2</b>	<b>212,805.6</b>
Operating of Owner-Occupied Dwellings	82,495.5	84,025.6	84,165.8	83,457.7	82,766.2	84,025.6	81,980.0	82,150.4
Renting of Residential Buildings	51,067.0	59,191.3	61,590.9	57,278.0	51,191.1	59,191.3	59,991.2	56,087.4
Renting of Commercial Buildings	49,212.5	56,069.6	63,818.1	60,283.2	50,888.4	56,069.6	58,646.4	53,153.3
Other Real Estate Activities	20,126.3	22,567.4	23,344.2	22,113.4	21,329.0	22,567.4	22,486.6	21,414.5
<b>PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES</b>	<b>283,304.2</b>	<b>317,523.6</b>	<b>331,847.6</b>	<b>333,271.7</b>	<b>288,925.3</b>	<b>317,523.6</b>	<b>319,351.2</b>	<b>324,654.3</b>
Business Activities (incl. Veterinary Activities)	283,304.2	317,523.6	331,847.6	333,271.7	288,925.3	317,523.6	319,351.2	324,654.3
<b>ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES</b>	<b>50,420.6</b>	<b>54,700.3</b>	<b>55,786.3</b>	<b>53,156.3</b>	<b>51,485.7</b>	<b>54,700.3</b>	<b>54,233.5</b>	<b>50,535.8</b>
Administrative and support Service to Businesses (incl. Renting of Machinery & Equipment)	50,420.6	54,700.3	55,786.3	53,156.3	51,485.7	54,700.3	54,233.5	50,535.8
<b>PUBLIC ADMINISTRATION AND DEFENSE</b>	<b>155,669.1</b>	<b>174,343.3</b>	<b>192,105.8</b>	<b>184,689.0</b>	<b>170,524.4</b>	<b>174,343.3</b>	<b>188,138.8</b>	<b>181,578.3</b>
Public Administration and Defense	155,669.1	174,343.3	192,105.8	184,689.0	170,524.4	174,343.3	188,138.8	181,578.3
<b>EDUCATION SERVICES</b>	<b>56,112.5</b>	<b>61,961.7</b>	<b>68,183.9</b>	<b>68,524.2</b>	<b>59,310.1</b>	<b>61,961.7</b>	<b>66,633.0</b>	<b>66,516.9</b>
Public Education	36,903.2	40,605.1	44,708.1	44,717.3	39,506.3	40,605.1	43,859.7	43,863.6
Private Education	19,209.3	21,356.6	23,475.8	23,806.9	19,803.8	21,356.6	22,773.3	22,653.3
<b>HEALTH AND SOCIAL WORK</b>	<b>64,765.4</b>	<b>69,880.2</b>	<b>67,874.1</b>	<b>67,277.1</b>	<b>68,479.3</b>	<b>69,880.2</b>	<b>70,912.9</b>	<b>70,036.6</b>
Public Health and Social Services	46,355.0	50,389.1	46,306.0	44,678.6	50,165.6	50,389.1	48,845.2	47,210.6
Private Health & Social Services	18,410.4	19,491.1	21,568.1	22,598.5	18,313.7	19,491.1	22,067.7	22,826.0
<b>OTHER SERVICES</b>	<b>82,533.5</b>	<b>86,676.1</b>	<b>83,811.8</b>	<b>81,857.0</b>	<b>85,466.6</b>	<b>86,677.0</b>	<b>80,376.4</b>	<b>76,217.6</b>
Recreational, Cultural & Sporting Activities	32,823.8	35,583.4	32,896.7	30,899.1	34,144.4	35,583.4	31,094.7	30,398.1
Personal & Household Services (incl. Activities of Membership Organization)	28,080.9	31,033.5	30,286.9	28,558.6	29,693.4	31,034.4	29,467.3	27,457.6
Private Households with Employed Persons	21,628.8	20,059.2	20,628.2	22,399.3	21,628.8	20,059.2	19,814.4	18,361.9
FINANCIAL SERVICES Indirectly Measured (FISIM)	461,223.3	497,100.4	500,362.0	398,432.2	469,852.4	497,100.4	487,546.1	391,760.2
<b>VALUE ADDED AT BASIC PRICES</b>	<b>2,448,880.6</b>	<b>2,637,056.2</b>	<b>2,667,441.9</b>	<b>2,541,559.3</b>	<b>2,528,188.9</b>	<b>2,637,056.1</b>	<b>2,617,540.7</b>	<b>2,433,963.9</b>
TAXES LESS SUBSIDIES ON PRODUCTS	223,635.1	210,922.9	215,736.2	174,192.3	232,456.0	210,922.9	207,300.1	167,899.9
<b>GROSS DOMESTIC PRODUCTS AT PURCHASERS' PRICES</b>	<b>2,672,515.7</b>	<b>2,847,979.1</b>	<b>2,883,178.1</b>	<b>2,715,751.6</b>	<b>2,760,645.0</b>	<b>2,847,979.0</b>	<b>2,824,840.8</b>	<b>2,601,863.8</b>

## 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 Defence; 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 Defence" 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. Output generated from the production process is recorded as a resource on the left hand side of the 'T' account and the inputs used up in the production process is recorded as a use on the right hand side of the account. The value added is the balancing item for this account.

**Production Account of a Producer**

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

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

Output can be valued at either basic or producers' prices. The 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>3</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

<sup>3</sup> The base year chosen for the Cayman Islands System of National Accounts is 2007.



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>4</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. Basically, 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 and 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 or deflate GDP at current prices. Although single indicators are generally 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>5</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 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 due to the fact that 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

<sup>4</sup> In the base year the current and constant estimates are the same.

<sup>5</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.

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 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 import 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.

## 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 SNA93. In accordance with SNA93 and ISIC guidelines, business units were assigned codes based on their principal economic activity.<sup>6</sup> The ISIC Revision 4 was adapted to accommodate a more detailed disaggregation of economic activity. For the most part, estimation and analysis were done at the product group level (5-digit ISIC code). However, some estimations 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 statutory agencies, merchandise trade data, and specified data from the Cayman Islands Monetary Authority (CIMA) comprised the main important secondary data sources.

The Annual National Accounts Survey is designed primarily to collect information from active business units on their income and expenditure. Questionnaires were hand-delivered to business units on Grand Cayman and mailed to those in Cayman Brac and

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<sup>6</sup> The principal activity of a business is the activity whose value added exceeds that of any other activity carried out by the business.

Little Cayman. The survey collected information for calendar years 2008 and 2009. The survey was administered to all units in the ESO 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 gross value added of a number of industries, at current prices, was deflated by the price indices of CPI items, or groups of items. The CPI was also used in estimating the gross value added of owner-occupied dwellings, some groups within the agriculture and fishing industries and mining at current prices.

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 and separated from government companies. 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**

In order 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. Previous year estimates are revised when current year estimates are being generated.

**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

**APPENDIX 4: CENTRAL REGISTER OF ESTABLISHMENTS  
QUESTIONNAIRE**

 Government of the Cayman Islands	Elizabethan Square Phase 3 George Town, Grand Cayman Cayman Islands, B.W.I. <a href="http://www.eso.ky">www.eso.ky</a> (1-345) 949-0940	 Economics and Statistics Office IESO Portfolio of Finance and Economics
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**CENTRAL REGISTER OF ESTABLISHMENTS  
QUESTIONNAIRE**

1. Legal Name: \_\_\_\_\_

2. Trading Name: \_\_\_\_\_

3. Address:

PO Box : \_\_\_\_\_ Postal Code: \_\_\_\_\_

Street Name and No: \_\_\_\_\_ District: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_

Email address: \_\_\_\_\_ Website: \_\_\_\_\_

4. Contact Person:

Name: \_\_\_\_\_ Position: \_\_\_\_\_

Telephone: \_\_\_\_\_ Email address: \_\_\_\_\_

5. What is the legal form of this business? (*tick in the appropriate box below*)

<input type="checkbox"/> Incorporated	<input type="checkbox"/> Sole proprietor
<input type="checkbox"/> Joint Venture	<input type="checkbox"/> Partnership
<input type="checkbox"/> Cooperative	<input type="checkbox"/> Other (please Specify) _____

6. In what year did this establishment begin operation? (*Year of commencement*) \_\_\_\_\_

7. What is the type of organization that best describes this establishment?

Single establishment (without or independent of any subsidiary or branch) **(Go To 10)**

Holding company/Head office with Branch or Subsidiary:  Foreign  Local

Branch of another establishment:  Foreign  Local

*Name of main office* \_\_\_\_\_

Subsidiary:  Foreign  Local **(Go To 9)**

*Name of parent company* \_\_\_\_\_

8. Number of Branches \_\_\_\_\_

9. Number of Subsidiaries \_\_\_\_\_

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