The Cayman Islands' System of National Accounts Report 2017

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THE ECONOMICS AND STATISTICS OFFICE

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ACKNOWLEDGEMENT

The estimation of the Gross Domestic Product is dependent on a wide range of data gathered from administrative records and a specially designed survey – the Annual National Accounts Survey (ANAS). This data gathering involves the participation of a large number of individuals, organizations and institutions. The Economics and Statistics Office (ESO) acknowledges the assistance and cooperation of all those individuals, government departments and agencies, non-governmental organizations and the private sector that supplied the relevant data utilized in the composition of this report. The ESO anticipates, with sincere gratitude, the continued support and cooperation of these individuals and entities.

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ABBREVIATIONS AND ACRONYMS

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

1. EXECUTIVE SUMMARY

1.1 The Economics and Statistics Office (ESO) has completed its first Supply and Use Tables (SUT) and the rebasing of Cayman Islands' national accounts from base year 2007 to 2015. The Cayman Islands' System of National Accounts Report 2017 presents the rebased gross domestic product (GDP) estimates for the period 2006–2017 and the SUT for 2015. The estimates were calculated using both the production and income approaches for the entire data series, and by the expenditure approach for 2015 only. The rebasing process provided the opportunity for conceptual and methodological reviews and improvements and the inclusion of more robust data and stockpiled revisions. There was also the reconciliation of the three estimates of GDP from the production, expenditure and income approaches for the new base year (2015) using the SUT framework.

1.2 The various conceptual, methodological and data improvements reflected in the rebased GDP series resulted in a 27.5 percent increase in the level of GDP for 2015 (the new base year). The new level of GDP at purchasers' price for 2015 stands at CI$3,923.5 million from CI$3,077.6 in the old (2007 base year) GDP series.

1.3 For the year 2017, the nominal (current) purchasers' price GDP for the Cayman Islands stood at CI$4,284.7 million, resulting in an estimated per capita nominal GDP of CI$67,887.0.

1.4 Real GDP at purchasers' price (i.e. GDP at constant 2015 prices or GDP adjusted for inflation) stood at CI$4,167.9 million in 2017. The corresponding per capita real GDP for 2017 is estimated at CI$66,036.3.

1.5 The domestic economy continued on its upward trajectory in 2017, recording another year of economic expansion. The economy grew by 3.0 percent in 2017 when compared to 2016. This represents the seventh consecutive year of economic expansion adding to the 1.2 percent growth recorded in 2011, 1.2 percent in 2012, 1.3 percent in 2013, 2.7 percent in 2014, 2.8 percent in 2015 and 3.1 percent in 2016. The expansion in 2017 was broad-based with all industries posting growth.

1.6 The top six performing industries in terms of the rate of growth in constant price GDP in 2017, are: (*i*) human health & social work (6.4%); (*ii*) other services (5.5%); (*iii*) water supply, sewerage & waste management (5.5%); *(iv)* administrative & support services activities which consists mainly of security and car rental services (4.7%); (*v*) professional, scientific & technical activities which consist mainly of

legal and accounting services (4.3%); and *(vi)* hotel & restaurant services (4.3%). The financial & insurance services industry grew by 2.4 percent in 2017.

1.7 The Average Annual Growth Rate (AAGR) over the five-year period (2013-2017) showed average annual constant price GDP growth of 2.6 percent for the total economy. All industries posted positive average growth rate for the review period with 8 of the 18 industries registering growth rates higher or equal to the economy average (2.6%). The lowest average expansion (0.3%) was posted by water supply, sewerage & waste management services. The low average expansion in this industry was due to a reclassification of activity from 2015 onward during the rebasing process. The highest average expansion over the period was recorded by the human health & social work industry, which posted average growth of 5.2 percent. This was followed by construction (4.3%); professional, scientific & technical activities (3.8%); manufacturing (3.7%); agriculture & fishing (3.5%); other services (3.5%); and administrative & support services activities (3.3%). Financial & insurance services expanded by an average rate of 1.4 percent over the period.

1.8 The rebased GDP series shows that financial & insurance services (the largest single contributor to real GDP) accounted for 31.3 percent of total GDP in 2017. This represents a continued decline in the contribution of the industry from the 32.9 percent recorded for 2013. The other industries making up the top six contributors in 2017 include: (*i*) professional, scientific & technical activities, which comprises primarily of legal and accounting services (13.2%); (*ii*) real estate activities (8.7%); (*iii*) wholesale & retail trade (6.2%); (*iv*) public administration & defense which consists primarily of central government operations (5.1%); and (*v*) hotels & restaurants (5.1%). There was a slight change in the relative ranking of the industries within the Cayman Islands' economy in 2017 when compared to 2016. Human health & social work and other services moved up one place to 8th and 10th, respectively. Transport & storage and information & communication activities moved down one place to 9th and 11th, respectively.

1.9 All income components of GDP recorded growth in 2017 when compared to the 2016. The largest increase was posted by operating surplus/mixed income which increased by 7.1 percent to CI$1,474.1 million. This was followed by taxes (less subsidies) on production and imports which increased by 5.9 percent to CI$609.1 million. Consumption of fixed capital increased by 3.8 percent to CI$237.3 million, while compensation of employees increased by 3.3 percent to CI$1,964.2 million.

1.10 In terms of share of GDP, total compensation of employees reached 45.8 percent in 2017, declining from 46.6 percent in 2016. Total operating surplus/mixed

income reached 34.4 percent of GDP in 2017, up from the 33.7 percent reached in 2016. There was a marginal decline in the share of consumption of fixed capital which moved to 5.5 percent in 2017 from 5.6 percent in 2016. There was a slight increase in the share of net taxes on production and imports, moving to 14.2 percent in 2017 from 14.1 percent in 2016.

1.11 The ESO has now developed the compilation of GDP via the expenditure approach (GDPE), the third approach to compiling GDP for the Cayman Islands. The 2015 GDPE was developed as part of the reconciliation of the three approaches to calculating GDP in the SUT. The 2015 GDPE for the Cayman Islands was made up of household final consumption expenditure (CI$2,089.1 million), final consumption expenditure of government (CI$365.2 million), final consumption expenditure of non-profit institutions serving households (CI$29.7 million), gross capital formation (CI$538.1 million), change in inventories (CI$2.1 million), and net export of goods and services (CI$899.2 million). The GDPE for 2016 onwards will be presented in the succeeding years' reports.

1.12 For reference year 2015, Cayman Islands' completed its first SUT which disaggregated the economy into 159 products (i.e. goods and services) and 150 industries. It shows total supply of goods and services of CI$8,447.0 million which was made up of CI$6,620.4 million of domestic production, imports of CI$1,623.4 million and net taxes on products of CI$203.2 million. The supply of goods and services was used as follows: intermediate consumption by businesses (CI$2,900.1 million), exports (CI$2,522.7 million), and domestic final demand (CI$3,024.2 million).[1]

[1] Domestic final demand is predominantly comprised of the purchases of goods and services by households.

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.

2.2 Key data sources

The SNA estimates contained in this report are based on the Annual National Accounts Survey (ANAS) conducted among all relevant establishments included in the ESO Business Register. The survey was conducted during the period April to June 2018. 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) - as practiced globally by official statistical agencies - is ever evolving, and as such, from time to time there will be adjustments in the methodology used to derive the estimates. This includes refinement of the estimation process, availability of new and improved data sources, etc. In view of constant improvement in accordance with updated SNA standards, the GDP series for the Cayman Islands was rebased incorporating the benchmark estimates from the balanced 2015 Supply & Use Tables. The rebased estimates in this report benefited from improvements in, and refinements of, the data sources, methodology, and

concepts from the rebasing process. The rebasing and benchmarking process has also resulted in a greater alignment of the Cayman SNA with the global SNA 2008.

3. GDP REBASING

3.1 Introduction

The Economics and Statistics Office (ESO) has completed its first Supply and Use Tables (SUT) and the rebasing of Cayman Islands' system of national accounts (SNA) from base year 2007 to 2015. The rebasing of the GDP series means that real GDP for the Cayman Islands will now be expressed in 2015 prices (the new base year) instead of 2007 prices, as previously adopted. The rebasing exercise resulted in a greater alignment with the latest SNA methodological standards (SNA 2008), improvement in coverage, data sources, methodology, and ultimately more robust national accounts data for the Cayman Islands. The rebasing exercise benefitted from technical assistance from the Caribbean Regional Technical Assistance Centre (CARTAC).

This chapter will seek to explain the process of rebasing and why it is necessary by looking at the different rebasing methodologies. We will then discuss what was done in rebasing the national accounts for the Cayman Islands, the improvements that were made and some comparative analysis of the numbers.

3.2 GDP rebasing explained

The change in GDP results from the contribution of two main effects: the quantity of goods and services produced and the price at which these goods and services are sold. GDP at current prices reflects both these contributions as the production during the period is measured at the prices in that period. GDP at constant prices (real GDP), on the other hand, reflects only the change in quantities produced by keeping the price level constant at base year levels. Thus, real GDP provides a more complete picture of changes in the actual production level of the country as it excludes the changes due to price movements. Since real GDP measures the production of the current period using the price level in the base year, the selection of the specific base year is imperative. At its most basic, the rebasing process is the replacing of the old base year with a more recent year. This is necessary to adequately capture the continuous structural changes as the economy evolves.

3.3 Reasons to rebase the GDP

An economy undergoes changes over time. There are continuous changes in consumption patterns, technology, production techniques, available goods and services, etc. These continuous changes mean that the base year price structure and weights becomes less representative of the current economic situation over time. It is therefore necessary to update the base period to reflect these changes and maintain the accuracy

and relevance of the estimates of real GDP. Rebasing enables the national accounts to capture the real picture of the economy by taking account of factors such as relative price movements, and structural changes in production and consumption patterns, which over time may contribute to an under or over estimation of GDP.

The rebasing process also provides an opportunity to incorporate (in the GDP series) methodological and compilation changes, pertinent international recommendations, new and more relevant data sources, changes to product and industry classifications, stockpiled revisions, etc. The incorporation of these various adjustments is carried out during the benchmarking process.[2] Benchmarking the GDP estimates can improve coverage and accuracy through updated intermediate consumption to gross output ratios. These adjustments will result in upward or downward shifts in the level of the GDP estimates depending on the significance and number of adjustments made. In the case of Cayman, the rebasing and benchmarking exercise completed recently has led to significant improvements in the revised current and constant price GDP series. This was mainly due to broader data coverage, data confrontation/reconciliation from the production/supply and demand sides, methodological changes (e.g. compilation of financial intermediation services indirectly measured[3], work-in-progress methodology in the estimates of the agricultural industry[4], etc.) and conceptual changes (e.g. allocation of FISIM by industry, etc.).

International best practice recommends that the national accounts be rebased every five to ten years. The base year selected should be a "normal" year, i.e. devoid of any sharp economic changes which would cause drastic, abnormal fluctuations in prices. Ideally, the base year that is chosen would be one in which there are virtually no sharp fluctuations in prices or major changes in underlying economic conditions, e.g. a year without a major natural disaster. However, since rebasing is often carried out in conjunction with benchmarking, the availability of ad hoc datasets necessary for the benchmarking process (e.g. establishment and household surveys, price indices, detailed trade in services statistics, etc.) is sometimes the determining factor. In line with international recommendation, the Cayman Islands' national accounts have been

[2] Benchmarking is the process by which methodological and conceptual change, new or improved data, more complete datasets are incorporated into the SNA to generate more reliable, representative estimates of underlying structure of the economy. The structure of the economy changes over time, benchmarking allows for a comprehensive analysis of the SNA and the incorporation of the necessary improvements.

[3] Financial Intermediation Services Indirectly Measured is now compiled using the SNA 2008 recommendation which will be further discussed later.

[4] Work-in-progress is the recommended method to calculate the output of production that extend over multiple accounting periods, e.g. building construction, agricultural production, etc. A cow being reared for meat will grow over time to maturity. That growth represents output over time and not just output when the animal is slaughtered for the meat.

rebased from 2007 to 2015. The year 2015 is also the year that the latest HBS was conducted, providing some of the data necessary to compile the SUT and GDPE.

3.4 Rebasing methodology

Rebasing is normally done periodically (e.g. every 5-10 years) with or without linking (i.e. connecting the new base year series to old base year series), or annual rebasing using chain-linking to connect the two series.

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

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

To address the issue of breaking the GDP series when the series is rebased, the new base year series must be joined to the old base year series so that they are expressed in terms of the prices of the new base year. The process of joining the two series is referred to as linking. With linking, the total GDP series and its components are extrapolated backward (from the new base year) at the most detailed level possible using the real growth rates of GDP and its components. It is important to note that the backward extrapolation is done separately for the total GDP and its components. The real growth rates used in this case are those derived from the old base year series. This method yields consistent volume measures of GDP as the entire series is expressed in terms of the prices of the current base year. Since the old growth rates are used to extrapolate backward, the old growth rates are preserved and there is no revision to the historical growth rates which maintains confidence in the GDP series. Despite the major

advantages of this rebasing approach, the disadvantage is that the GDP series prior to the base year will not be additive (i.e., components of GDP will not sum up to total GDP) as the total GDP series and its components were extrapolated separately. This is the approach used in rebasing the Cayman Islands' GDP due to the advantage of preserving the historical growth rates of real GDP while yielding consistent volume measures of GDP. These advantages outweigh the downside of non-additivity of the GDP series prior to the new base year (2015).

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

3.5 Methodological & conceptual changes and improvements

Rebasing provides an opportunity to incorporate conceptual and methodological changes to the national accounts as well data improvements. With this in mind, the rebasing of the Cayman Islands' SNA was a comprehensive process involving the following:

1. Compilation of the 2015 benchmark estimates within a SUT framework (e.g. the SUT allows the reconciliation of different data sources in compiling GDP estimates);
2. Confrontation/reconciliation of the production and consumption estimates at the product level;
3. Reconciliation of GDP via the production, income and expenditure approach;
4. Expansion of coverage to include informal and own-account production where necessary;
5. Inclusion of stockpiled (i.e. accumulated) revisions to production estimates;
6. Compilation of FISIM using the recommended methodology from SNA 2008;
7. Disaggregation of FISIM into intermediate consumption of enterprises, final use and export and allocating the intermediate consumption across industries;
8. Reclassification of the activities of specific government entities as public administration;
9. Reconciliation of production estimates with demand side data from the Household Budget Survey (HBS) and visitor expenditure;
10. Utilization of the work-in-progress (WIP) methodology to compile estimates for agriculture production;

11. Disaggregating work permit fees paid by businesses into the service component (which is treated as intermediate consumption) and taxes on production;
12. Adoption of the 2008 SNA recommendation to capitalise research & development (R&D) expenditure in the national accounts. As such, R&D expenditure is now treated as gross fixed capital formation (GFCF), instead of intermediate consumption (IC) in the national accounts;
13. Recalculation of the historical GDP series;
14. Identification of data gaps for future improvements in methodology.

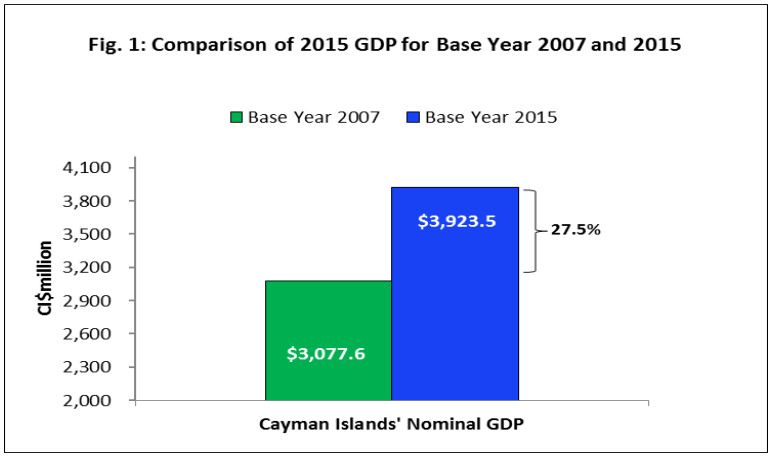
The above listed process resulted in changes to the level of GDP in both current and constant prices. The growth rate of the nominal GDP was revised for both the period before and after the base year. However, for real GDP, the historical growth rates (i.e. growth rates for the years prior to the base year-2015) were unrevised.

3.6 Results of the rebased GDP series

Table 1: Summary of Rebased National Accounts (Cayman Islands)

Base Year	Revision to Nominal GDP at Purchasers' Prices for 2015				
	GDP Levels (CI$'000)	Start year	End year	Years covered	Percent increase
2007	3,077,619.6	2006	2016	11	-
2015	3,923,457.0	2006	2017	12	+27.5

Table 1 above and figure 1 below reveal that the accumulation of all the improvements incorporated during the rebasing process resulted in the level of nominal GDP increasing by 27.5 percent for the new base year. The rebased nominal GDP for 2015 increased to CI$3,923.5 million from the CI$3,077.6 million in the original series, an increase of CI$845.9 million.



In the continued effort towards greater alignment with international best practices, the ESO had to improve its compliance with the recommendation of the 2008 System of National Accounts manual (SNA 2008). The SNA 2008 outlines the internationally agreed standards and conventions covering the compilation of national accounts data. The compilation of the previous GDP series was predominantly based on the SNA 93 and as such, some methodological adjustments had to be made to achieve greater compliance with the SNA 2008. The increase in the GDP levels was predominantly due to the methodological adjustments that were made while implementing the pertinent recommendations in SNA 2008. The comparison between the old GDP series and the rebased series is done for 2015 only due to the fact that it represents the base year and as such it contains the benchmark GDP estimates. A similar comparison is not done for real GDP as the two series are based on prices in different years (2007 and 2015) and as such, direct comparisons would be misleading.

3.6.1 Change in FISIM calculation methodology

The table below identifies the main individual components contributing to the 27.5 percent or CI$845.9 million increase in nominal purchasers' prices GDP for the rebased series.

Table 2: Contribution to Change in the Level of GDP, 2015

Component	Value (CI$'000)	Share of change (%)
FISIM calculation using SNA 2008 methodology	223,740.4	26.5
FISIM allocation to intermediate consumption, final uses & exports	307,182.5	36.3
Work permit fees split between intermediate consumption & other taxes on production	58,071.0	6.9
Other changes	256,843.5	30.4
Total	**845,837.4**	**100.0**

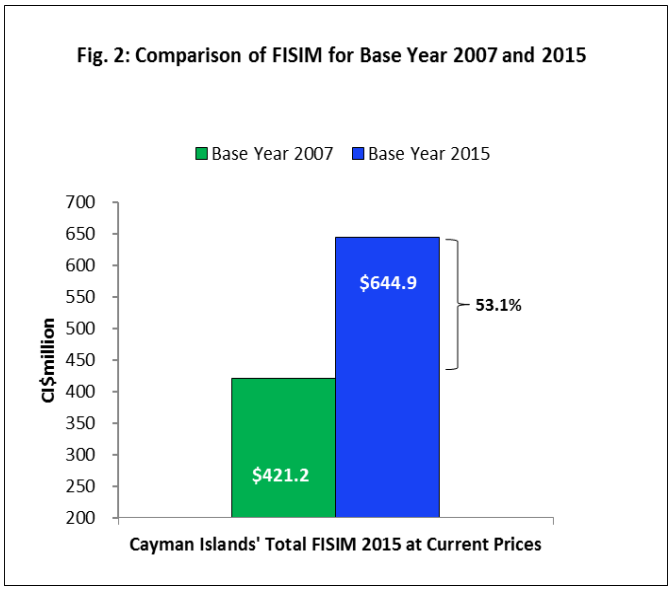
Financial intermediation services indirectly measured (FISIM) is a difficult concept to digest by non-national accountants. Technically speaking, it is an indirect measure of the value of financial intermediation services produced by providers of financial intermediation services (e.g. deposit-taking banks, other monetary financial institutions practising financial intermediation, and other monetary financial institutions) but for which financial institutions do not charge explicitly. Financial intermediation refers to *"…the process whereby a financial institution such as a bank accepts deposits from units wishing to receive interest on funds for which the unit has no immediate use and lends them to other units whose funds are insufficient to meet their needs"* (SNA 2008 6.163 p.

115). Basically, financial intermediation is the bringing together of economic actors with surplus funds (depositors) with those who require funding (borrowers). The intermediation service is paid for via the spread between the interest charged on loans in relation to interest paid on deposits and hence it is an implicit rather than an explicit fee. FISIM is the way the SNA implicitly measures the economic production being generated through financial intermediation. SNA 93 calculated FISIM as the difference between property income receivable (mainly interest received)[5] and interest paid by financial intermediaries in the old GDP series. This was the methodology used in the national accounts before the rebasing. For the rebased series, the SNA 2008 methodology of using a "reference rate" to calculate total FISIM was adopted. According to SNA 2008, FISIM should be calculated on loans (yL) and deposits (yD) only and separately, using a reference rate (rr). If loans and deposits attract interest rates of rL and rD respectively, the output of FISIM should be calculated using the formula:

$$\mathbf{FISIM = (rL - rr)\ yL + (rr - rD)\ yD}$$

The reference rate (rr) should be a "pure" interest rate, i.e. should contain no service element and reflect the risk and maturity structure of deposits and loans. SNA 2008 also recommended that for financial intermediaries, all loans and deposits are included, not just those made from intermediated funds as was the case with SNA 93.

The application of the SNA 2008 methodology for calculating FISIM resulted in the value of FISIM for the Cayman Islands in 2015 increasing by 53.1 percent. FISIM moved from CI$421.2 million in the old series to CI$644.9 million in the rebased series. Along with the change in the calculation method for FISIM, the rebased series also includes revision to the data provided by the financial industry regulators – Cayman Islands Monetary Authority (CIMA). The CI$223.7 million increase in FISIM in 2015 accounted for 26.5 percent of the overall increase in the rebased GDP (see Table 2 above). Due to the nature of this methodological change, FISIM was recalculated using the new methodology back to 2006, i.e. the entire GDP



[5] In practise, the property income receivable should exclude that part which was receivable from investment of own funds, i.e. only the property income received from funds in the intermediation process should be included.

series. Table 3 below shows the comparison of FISIM compiled using the old and new methodology and the percentage in the resulting results.

Table 3: Comparison of Cayman Islands FISIM at Current Prices for Base Year 2007 and 2015 (CI$ million)

Base Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2007 Series	471,540.2	508,981.0	512,592.9	409,427.0	381,010.6	375,551.3	404,949.5	404,170.4	406,220.1	421,184.5	436,736.3
2015 Series	519,102.8	633,107.1	625,086.3	540,407.1	553,349.3	543,950.9	536,249.3	564,498.9	614,128.3	644,924.9	673,331.4
% Change	10.1	24.4	21.9	32.0	45.2	44.8	32.4	39.7	51.2	53.1	54.2

3.6.2 Allocation of FISIM

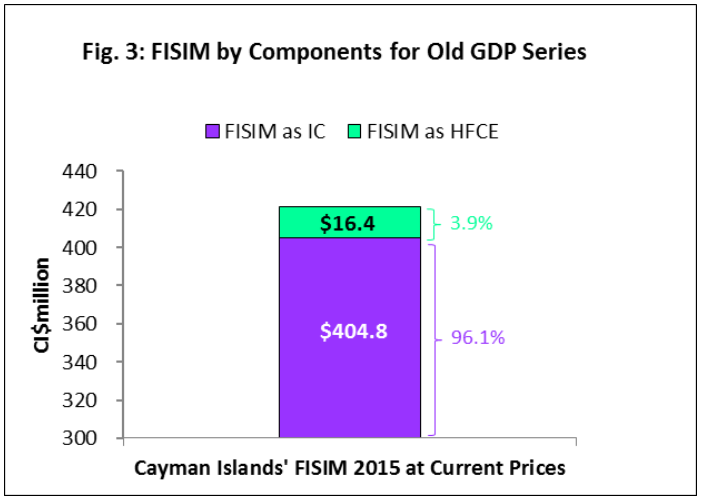
Another major contributor to the increase in GDP in the rebased series was the SNA 2008 requirement that the consumption of FISIM be allocated between users (i.e. lenders as well as borrowers) as either intermediate consumption by enterprises or as final consumption or exports. SNA 93 allowed for the continuation of the convention whereby the FISIM is allocated to intermediate consumption of a notional industry and deducted from the total economy. This allowance was made in the SNA due to the recognized difficulty (in practice) to find suitable methods and data to allocate FISIM among different users. This convention was a carry-over from the SNA 68 but was removed from SNA 2008. In line with this recommendation, the ESO undertook the rigorous task of allocating FISIM among users. The use of FISIM was disaggregated into final uses by household, government and non-profit institutions serving households, intermediate use by businesses, and exports (i.e. used by non-resident businesses and individuals). The portion of FISIM allocated to intermediate use by businesses will serve to reduce GDP as this is netted from gross output when deriving GDP via the production approach. In this regard, a reduction in the portion of FISIM allocated to intermediate use results in an increase in the resulting GDP.

In the old GDP series for the Cayman Islands, data only allowed for a crude allocation of FISIM between final uses by household (HFCE)[6] and intermediate use by businesses (IC)[7]. The portion of FISIM treated as intermediate use by businesses was deducted from the total economy in line with what was allowed in the old SNA methodology. The crude measure of the HFCE portion of FISIM was basically the FISIM generated by credit

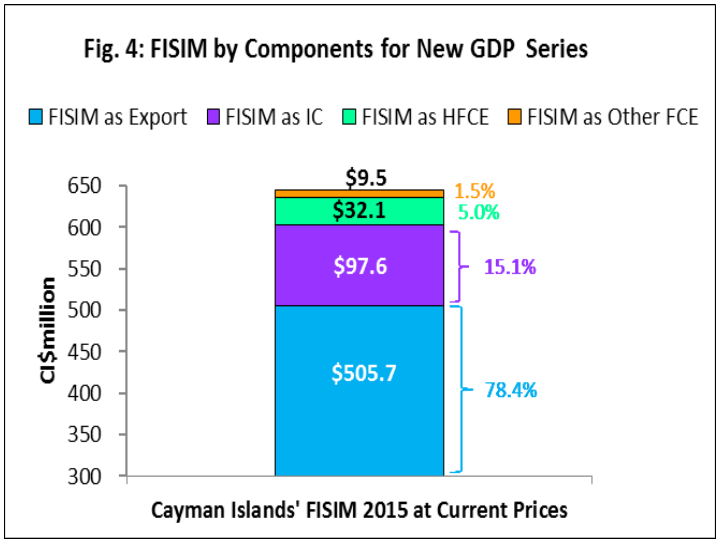
[6] Household final consumption expenditure (HFCE) consists of the total outlay on individual goods and services by resident households. It includes imputed expenditures or transactions which do not occur in monetary terms and can therefore not be measured directly.

[7] Intermediate Consumption (IC) generally refers to goods and services that are used up by businesses in the production process.

unions and building societies as these predominantly serve households only. Figure 3 shows the crude allocation of FISIM in the old GDP series for the Cayman Islands. Of the CI$421.2 million, 3.9 percent or CI$16.4 million was allocated to HFCE and 96.1 percent or CI$404.8 million to intermediate use. Based on the previous explanation, the CI$404.8 million would have been deducted to derive the nominal GDP for 2015 based on the old SNA methodology.



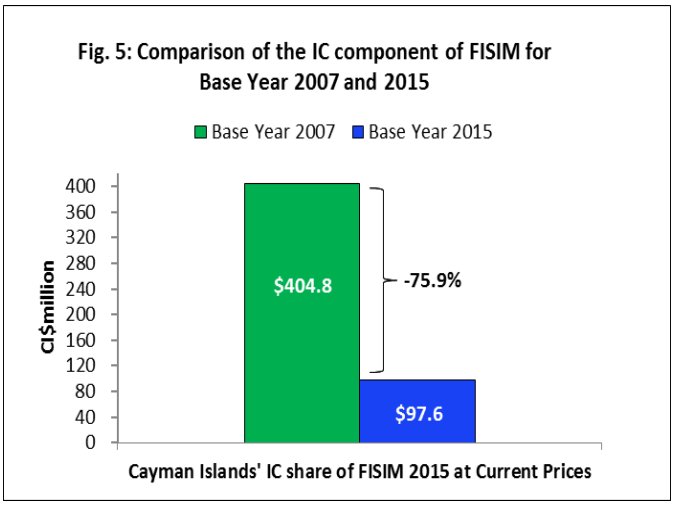
Following the requirement of SNA 2008 to properly allocate FISIM between users, the ESO undertook the detailed allocation with the result shown in Figure 4. The largest portion of FISIM (CI$505.7 million or 78.4 percent) is exported due to the fact that a significant proportion of the clients of financial services are non-resident entities and individuals. The second largest portion of FISIM (CI$97.6 million or 15.1 percent) is used by domestic business. With the new methodology, this is the portion that will be deducted from output when deriving GDP. FISIM allocated to HFCE (CI$32.1 million or 5.0 percent) and Other FCE[8] (CI$9.5 million or 1.5 percent) make up the rest of FISIM.



For the Cayman Islands, the net result of the detailed allocation of FISIM to final uses as recommended by SNA 2008 was an increase in the rebased GDP of CI$307.2 million or 36.3 percent of the total. The adoption of the SNA 2008 recommendation resulted in a decline in the amount of FISIM allocated to IC from CI$404.8 million in the old GDP series to CI$97.6 million in the rebased series, a decline of 75.9 percent (see Fig. 5). The

[8] Other Final Consumption Expenditure (FCE) is made up of Government Final Consumption Expenditure (GFCE) and the final consumption expenditure of Non-profit Institutions Serving Households (NPISH)

decline in FISIM IC means that the GDP level would increase by the same amount, as we are now deducting a smaller figure from gross output to derive GDP. The disaggregation of FISIM was based on data on the stock of deposits and loans (broken down by household and industry) provided by CIMA. Data on the export of FISIM was gleaned from the Balance of Payments (BOP) with the assistance of the External Sector Statistics (ESS) unit of the ESO.



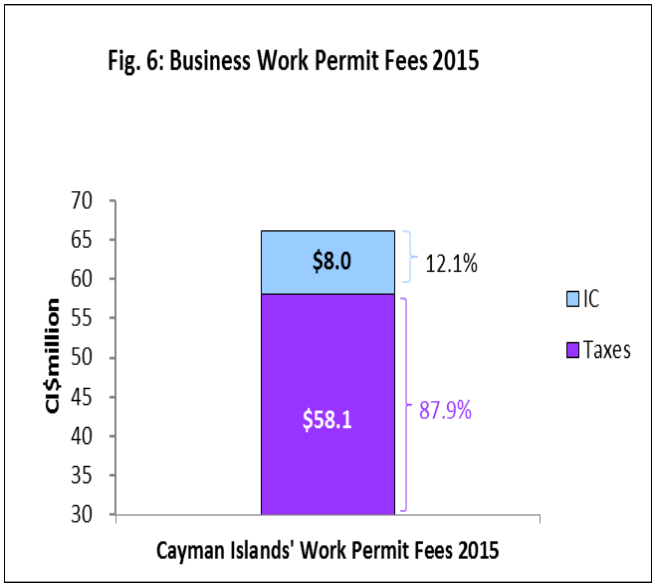
3.6.3 Treatment of work permit fees

Another methodological improvement that was incorporated in the rebased GDP series was the split of work permit fees paid by businesses into IC and other taxes on production. The service portion of business work permit fees[9] should be reflected as IC while the portion in excess of the service fees is essentially a tax on businesses, i.e. other taxes on production. In theory, the service portion of business work permit fees should reflect the administrative cost of processing the business work permits. The distinction is based on the practical difference between a tax and what is considered a sale of a service by government. A tax is a compulsory, unrequited payment to government units by households and businesses. The payment is considered to be unrequited because the government provides very little or nothing directly to the individual unit in exchange for the payment or the payment is clearly out of proportion to the costs of providing the service. It is based on this rationale that work permit fee is split between service fee and tax. A proxy measure of the service fee portion of business work permit fee may be based on the total production costs of the department processing the work permit applications or the "standard" fee times the number of work permits issued. In line with the recommendation from CARTAC, the Cayman Islands' SNA uses the minimum fee charged as the standard fee for issuing permits[10]. This minimum fee is multiplied by the number of work permits issued to derive an estimate of the service portion, with the surplus being treated as other taxes on production.

[9] The portion of work permit fees paid by household is excluded as this is HFCE and should not be included in intermediate consumption (IC).

[10] $375 was used as the standard service fee for issuing permits. This is the lowest WP fee for non-skilled worker other than Kitchen Helpers ($300) and Domestic Helpers ($150).

The conceptual adjustment to the treatment of business work permit fees resulted in 12.1 percent (CI$8.0 million) of these fees being treated as a purchase of service from government and hence classified as IC and deducted from gross output when deriving GDP. The remaining 87.9 percent (CI$58.1 million) was classified as other taxes on production and is included in GDP. In the old GDP series, the total of business work permit fees was treated as IC and deducted when calculating GDP. Therefore the conceptual adjustment in the treatment of business work permit fees has resulted in an increase in the level of GDP of CI$58.1 million or 6.9 percent of the total increase (see Table 2).



3.6.4 Other miscellaneous changes

Other miscellaneous changes combined to increase the level of GDP by CI$256.8 million in the rebased GDP series. This represents 30.4 percent of the total change as shown in Table 2. This includes other methodological and conceptual adjustments and improvements made to the SNA during the rebasing process and the finalization of the SUT. Included in other changes are improvements in the GDP estimates from the compilation of the 2015 benchmark estimates, reconciliation of the 3 approaches to calculating GDP, confrontation of the production and consumption estimates at the product level and aligning of the production estimates with demand side data from the Household Budget Survey (HBS) and visitor expenditure, all within the SUT framework. Other improvements include expansion in coverage to include informal and own-account production as far as available data allowed, inclusion of stockpiled revisions to production estimates, the utilization of the work-in-progress (WIP) methodology to compile estimates of agriculture production and the use of the local customs data for specific product flow estimates as opposed to counterparty data from the USA.[11]

[11] Counterparty data from the USA was used as upwards of 85 percent of imports into Cayman is from the USA.

3.6.5 Change in structure of the rebased GDP

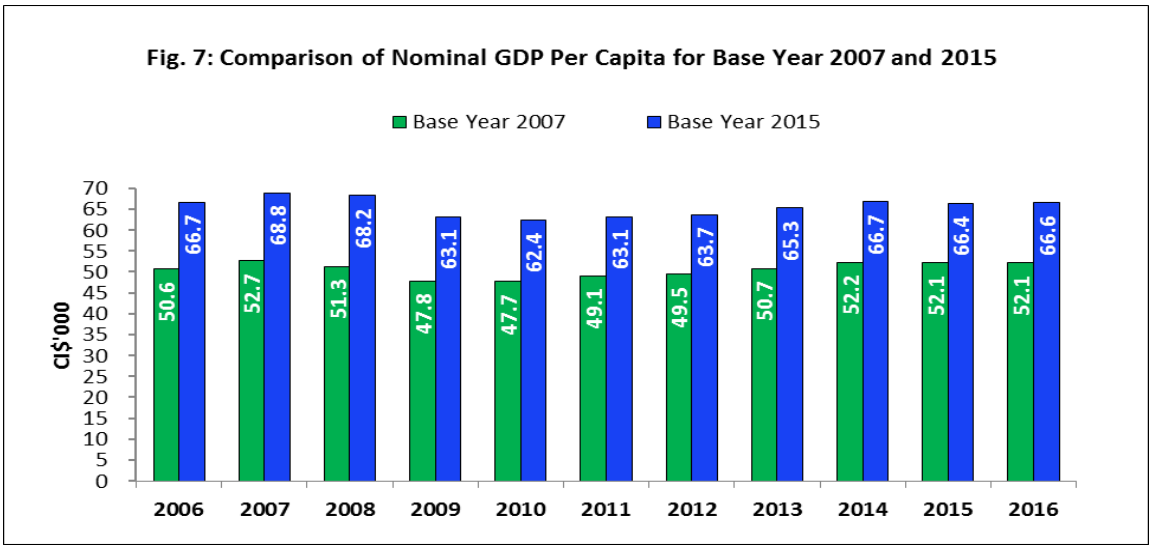
The rebased estimates not only led to changes in the level of GDP but also to the structure of GDP as reflected by the industry contributions. Table 4 shows the comparison between nominal GDP and share for the old GDP series (2007 base year) and the rebased series (2015 base year). In reviewing the table, note that the 2007 base year series does not have FISIM allocated at the industry level as done in the rebased series. The unallocated FISIM means that the contributions in the old series will be artificially higher (in general) than those in the rebased series as the FISIM is only deducted at the total economy level for the old series. All industries recorded smaller shares of GDP in the rebased series compared to the old series except for agriculture & fishing activities, construction, real estate activities and human health & social work services. The contribution of real estate and health services increased while that for agriculture & fishing activities remained unchanged. The changes in share ranged from -0.2 to 1.3 percentage points. The industry posting the largest negative change in contribution was financial & insurance services whose share of nominal GDP moved from 37.6 percent in the old series to 32.2 percent in the rebased series. This is due, in part, to the fact that this industry is a significant user of FISIM hence the allocation of FISIM at the industry level would have a significant impact of the industry's share of GDP. The next largest negative impact was on wholesale & retail activities whose share of GDP declined by 1.8 percentage points, from 7.9 percent in the old series to 6.1 in the rebased series. This was followed by public administration which declined by 1.4 percentage points (6.6 to 5.2 percent), hotels & restaurants -1.2 percentage points (6.3 to 5.2 percent), and information & communication -0.8 percentage points (3.6 to 2.8 percent). The largest increase in share was posted by real estate activities whose share increased by 1.3 percentage points (7.4 to 8.7 percent). This was due to the full incorporation of data on expenditure for owner occupied dwelling from the 2015 Household Budget Survey (HBS). This was followed by administrative & support service activities, 0.5 percentage points (2.0 to 2.5 percent); construction activities, 0.4 percentage points (3.2 to 3.6 percent); and human health & social work, 0.1 percentage points (3.2 to 3.3 percent).

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN				
TABLE 4: Comparison of 2015 Nominal GDP and Contribution for Base Year 2007 and 2015				
INDUSTRY	2007 Base Year Series		2015 Base Year Series	
	CI$'000	(%) Share	CI$'000	(%) Share
01 Agriculture & Fishing	12,391.0	0.4	14,857.9	0.4
02 Mining & Quarrying	20,465.7	0.7	8,603.3	0.2
03 Manufacturing	27,304.0	0.9	32,607.7	0.8
04 Electricity, Gas & Air Conditioning Supply	61,503.9	2.0	57,045.2	1.5
05 Water Supply, Sewerage & Waste Management	37,831.6	1.2	34,491.5	0.9
06 Construction	99,472.1	3.2	142,131.2	3.6
07 Wholesale & Retail Trade	241,650.3	7.9	239,373.8	6.1
08 Transport & Storage	125,338.1	4.1	137,801.5	3.5
09 Hotels & Restaurants	194,942.0	6.3	202,259.0	5.2
10 Information & Communication	110,042.7	3.6	109,299.2	2.8
11 Financial & Insurance Services	1,156,793.4	37.6	1,263,887.5	32.2
12 Real Estate Activities	228,381.0	7.4	342,423.2	8.7
13 Professional, Scientific & Technical Activities	412,172.9	13.4	507,280.3	12.9
14 Administrative & Support Service Activities	61,519.0	2.0	98,405.3	2.5
15 Public Administration & Defense	202,812.6	6.6	202,395.6	5.2
16 Education Services	77,164.8	2.5	88,758.0	2.3
17 Human Health & Social Work	98,303.5	3.2	130,533.6	3.3
18 Other Services	97,272.3	3.2	108,150.5	2.8
Less: Financial Services Indirectly Measured (FISIM)	404,784.1	13.2	0.0	0.0
GDP at Current Basic Prices	2,860,577.0	92.9	3,720,304.5	94.8
Add: Taxes Less Subsidies on Products	217,042.6	7.1	203,152.6	5.2
GDP at Current Purchasers' Prices	3,077,619.6	100.0	3,923,457.0	100.0

3.6.6 Change in per capita GDP

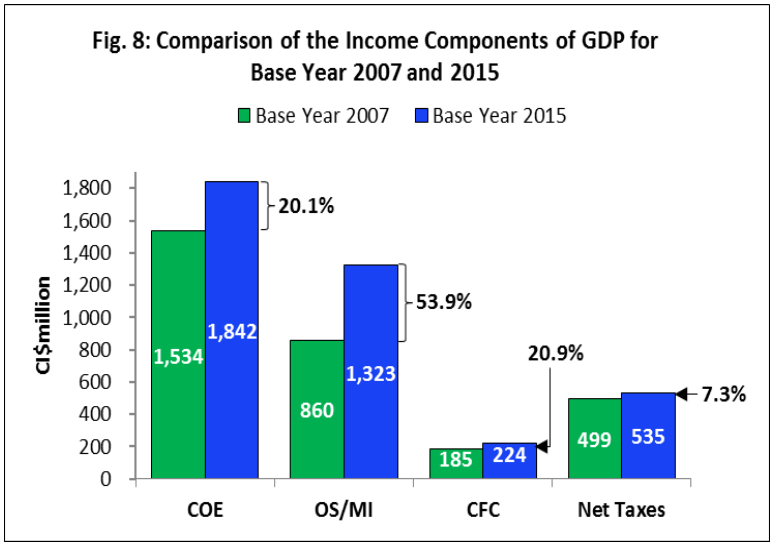
The increase in the level of GDP in the rebased series inevitably resulted in an increase in the nominal GDP per capita as shown in Figure 7 below. The per capita GDP for 2015 increased from CI$52.1 thousands in the old series to CI$66.4 thousand in the rebased series, an increase of 27.5 percent. The magnitude of the increase in the level of nominal GDP per capita for the rebased series ranged from a low of 27.5 percent in 2015 to a high of 33.0 percent in 2008. This level of increase is not unusual when compared to other countries that have (during their rebasing exercise) incorporated

similar methodological changes and data reconciliation to achieve greater alignment with the SNA 2008.[12]



3.6.7 Change in the income components of GDP

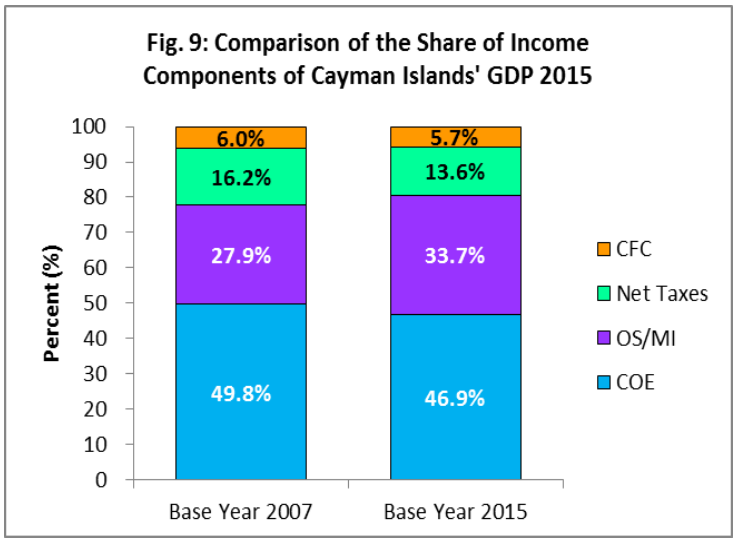
The rebased GDP series also impacted the level of the income components of GDP. Figure 8 shows the comparison of the changes to the level in the GDP income components. Compensation of employees (COE) increased to CI$1,842 million in the rebased (2015 base year) series from CI$1,534 million in the old (2007 base year) series, a change of 20.1 percent. The change in COE results from the upward revision in the level of output of businesses and the update in the cost structure. Operating surplus/mixed income (OS/MI) posted the largest percentage change (53.9%) of all income



[12] Bahamas posted upward revision of 27.6% to 2012 GDP after rebasing; Nigeria +89.2% in 2013 GDP; Tanzania +27.8% in 2013 GDP; Maldives +19.5% in 2014 GDP; Zambia +25.2% in 2010 GDP; and Kenya +25.3% in 2013 GDP.

components.[13] It moved from CI$860 million in the old series to CI$1,323 in the rebased series. This change also resulted from updated cost structure information as well as higher estimates of output. Consumption of fixed capital (CFC) increased by 20.9 percent, moving from CI$185 million to CI$224 million. Net taxes on production and imports increased by 7.3 percent, from CI$499 million to CI$535 million. The increase in net taxes partly results from the conceptual change in the treatment of business work permit fees, part of which is now being treated as a tax. A more detailed discussion of this change in concept is presented in section 3.6.3 above.

The change in the level of the income components also led to changes in their relative share to GDP. Operating surplus/mixed income is the only component posting a gain in share, moving from 27.9 percent in the old series to 33.7 percent in the rebased series. The share of COE moved from 49.8 percent to 46.9 percent, a decline of 2.9 percentage points. Despite the increase in the level of net taxes, its share declined from 16.2 percent to 13.6 percent. CFC marginally declined from 6.0 percent to 5.7 percent.



3.6.8 Change in the growth rate of rebased nominal GDP

The methodological and conceptual changes along with the data improvements incorporated in the rebased GDP series also resulted in changes in the growth rate of nominal GDP. The growth rate in real GDP is unaffected due to the methodology through which the old series is linked to the new series. Linking is the process through which the new real GDP series is connected to the old series to provide a single, consistent volume series of GDP. We already discussed the different methodologies by which the linking process may be completed and the advantages and disadvantages of the various methodologies in Section 3.4 of this report. To reiterate, the rebased GDP series for the Cayman Islands was linked by applying the historical growth rates of real GDP (from the old series) to the new base year GDP. The main advantage of this approach is that there is no revision to the historical growth rate when the GDP is

[13] 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.

rebased. The disadvantage of this approach is that the real GDP for 2014 backward (i.e. the period prior to the new base year) will be non-additive. The non-additivity of the back years results from the fact that the historical growth rates are applied at every level of GDP, i.e. from the detailed compilation level to the total GDP level. Only the real GDP series will suffer from the non-additivity problem as there is no preservation of the historical growth rates for nominal GDP – the new growth rate in nominal GDP will be different from the old series. The focus on preserving the growth rates of real GDP is due to real GDP being the variable used to measure economic growth. The non-additive (pre-base year) GDP will be evident in all the tables showing real GDP in Chapter 5 of this report. Any analysis of those GDP tables must be informed by the issue of non-additivity.

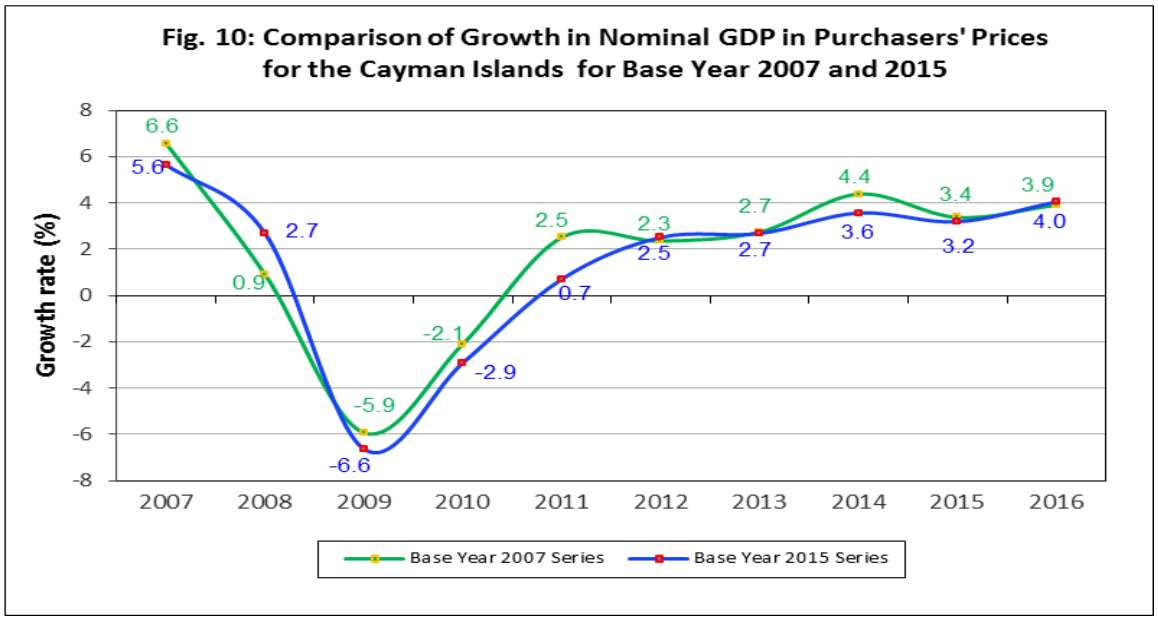


Figure 10 shows the comparison of the growth rates in nominal GDP at purchasers' price for the old and rebased GDP series for 2007-2016. The average growth rate over the period was 1.9 percent for the old GDP series and 1.5 percent for the rebased GDP series. The rebased series seems less volatile than the old series, particularly in the recovery period (2011-2016) after the global economic recession.

4. SUPPLY AND USE TABLES (SUT) 2015

4.1 Introduction to the SUT

To derive the current price benchmark estimates necessary to rebase GDP, it was necessary for a Supply & Use Table (SUT) to be compiled. The SUT represents a detailed view of all economic activity taking place within the economy in an accounting period. It records the total supply of goods and services available for consumption and their uses. The supply of goods and services available is based on the sum of domestic production and imports. The SUT also records how and where the supply of goods and services are allocated/used, whether as intermediate consumption (used by businesses), final consumption (used by individuals & households), capital formation (the acquisition less disposal of fixed and intellectual assets primarily by business)[14], changes in inventories held by businesses or exports of goods and services. The SUT describes the interrelationship between producers and consumers of goods and services, and inter-dependence among the different industries. An essential function of the SUT is to confront and reconcile the GDP estimates from the three approaches to calculating GDP, i.e. the production, income and expenditure approaches. The data confrontation is possible as *"supply and use tables are a powerful tool with which to compare and contrast data from various sources and improve the coherence of the economic information system. They permit an analysis of markets and industries and allow productivity to be studied at this level of disaggregation."* (SNA 2008, 14.1, p. 271). The input-output tables (IOTs) are derived from the SUT and are used for a variety of analytical purposes such as economic modelling and economic impact studies.

The 2015 SUT is the first to have been compiled for the Cayman Islands. It breaks down the economy into 150 industries (columns) and 159 products (rows) and is therefore rectangular, with more products than industries. The compilation of the 2015 SUT was carried out with technical assistance from the Caribbean Regional Technical Assistance Centre (CARTAC) which is the regional technical assistance body of the International Monetary Fund (IMF).

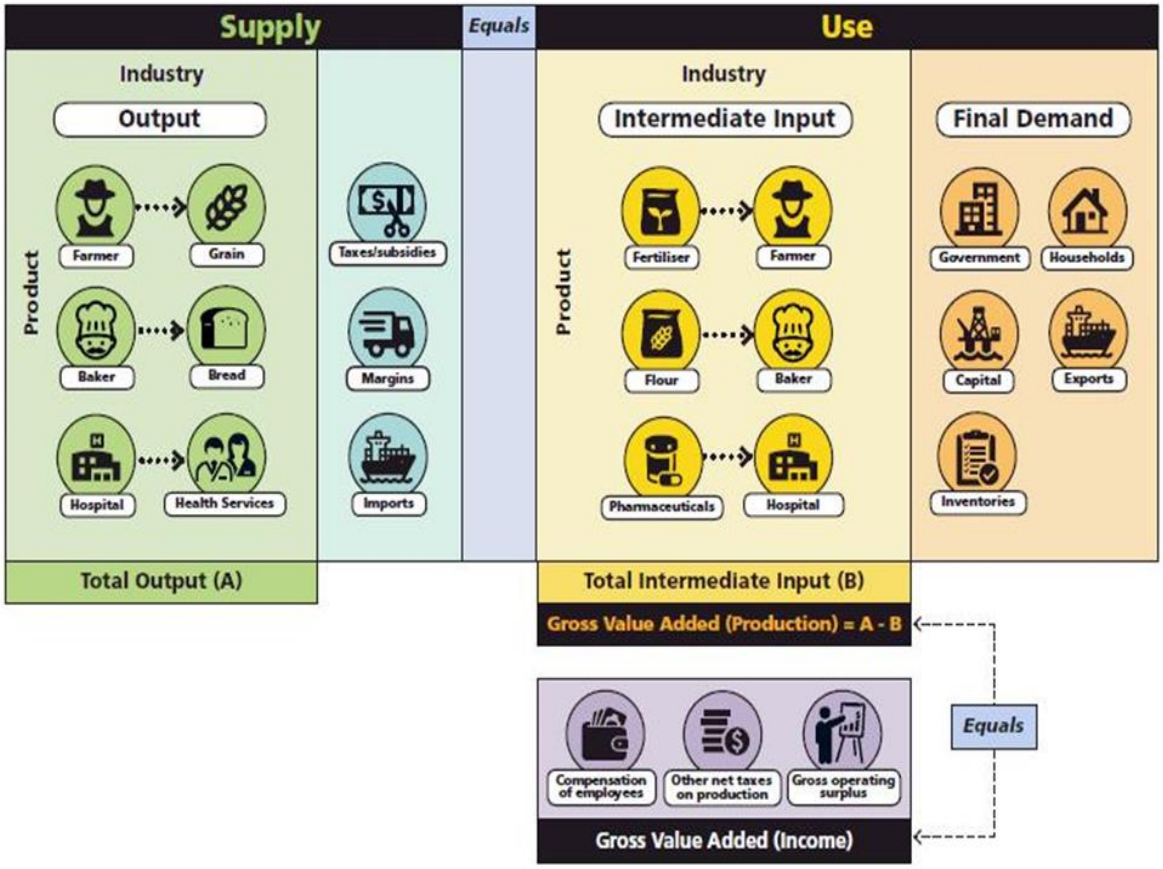
4.2 Framework of the SUT

Figure 11 provides a schematic of the framework of the economy as it relates to SUT and the economic identity that underpins it. The basic identity underpinning the SUT is that supply=use for all products and services in the economy. The SUT framework comprises two tables, i.e. supply and use. The supply table shows the total supply of products from domestic and foreign producers (imports) that are available for use in the

[14] Intellectual assets include research & development, computer software product, etc. Capital formation also includes acquisition of new dwellings and major renovations to dwellings by households.

domestic economy. The use table presents the use of this supply by industries as intermediate inputs and by final users (final demand includes GFCE, HFCE, capital formation, change in inventories and exports). The SUT is considered to be balanced when total supply=total use at the product level. The benchmark current price estimates used in the rebasing process is generated from the balanced SUT.

Fig. 11: Schematic Showing the Framework of the Economy Based on the SUT[15]



The main body of the supply table is comprised of the domestic output matrix which captures the value of domestic production at the product level. Industry values are shown in the columns and product values are shown in the rows. In the output matrix, each cell indicates the amount of each product that is produced domestically by each industry at basic prices. Hence, looking at the industry column will show all the different products produced by that industry. The addition of domestic production at basic prices to imports yields total supply at basic prices. The transition of total supply at basic

[15] Source: Australian Bureau of Statistics, Information Paper: Australian National Accounts, Supply Use Tables (http://www.abs.gov.au/ausstats/abs@.nsf/mf/5204.0.55.014)

prices to total supply at purchasers' prices is achieved by adding trade and transport margins and net taxes on products.

The use table shows the use of products by industries and by final users. The use table also shows the value added matrix by industry at purchasers' prices. The central part of the use table is the intermediate input matrix. As with the supply table, industries in the use table appear along the columns and products across the rows. In the use table, the cell where a column intersects a row shows the amount of a product purchased by each industry as an intermediate input into the industry's production process. The intermediate inputs are valued at purchasers' prices, i.e. include taxes, transportation costs, and trade margins.

The use table also includes the final demand matrix which presents the expenditure-side components of GDP. The final demand matrix includes household and government final consumption expenditures, gross capital formation, change in inventories and exports. The final demand matrix has products along the rows but the final demand categories (rather than industries) along the columns. All final demand components are valued at purchasers' prices.

GDP via the production - GDPP (i.e. sum of the value added by industry) is compiled in a row under total intermediate inputs. The value added for each industry is derived by subtracting the value of intermediate inputs at purchasers' prices (row B) from the total output by industry (row A) in the supply table (i.e. GDPP = A-B).

GDP via the income approach – GDPI (i.e. summing of the income earned by the factors of production) is shown below the row showing GDPP. The primary income components of value added are compensation of employees (return to labour), gross operating surplus[16] (return to capital), and other net taxes on production (return to government). GDPI is derived through the summing of these components.

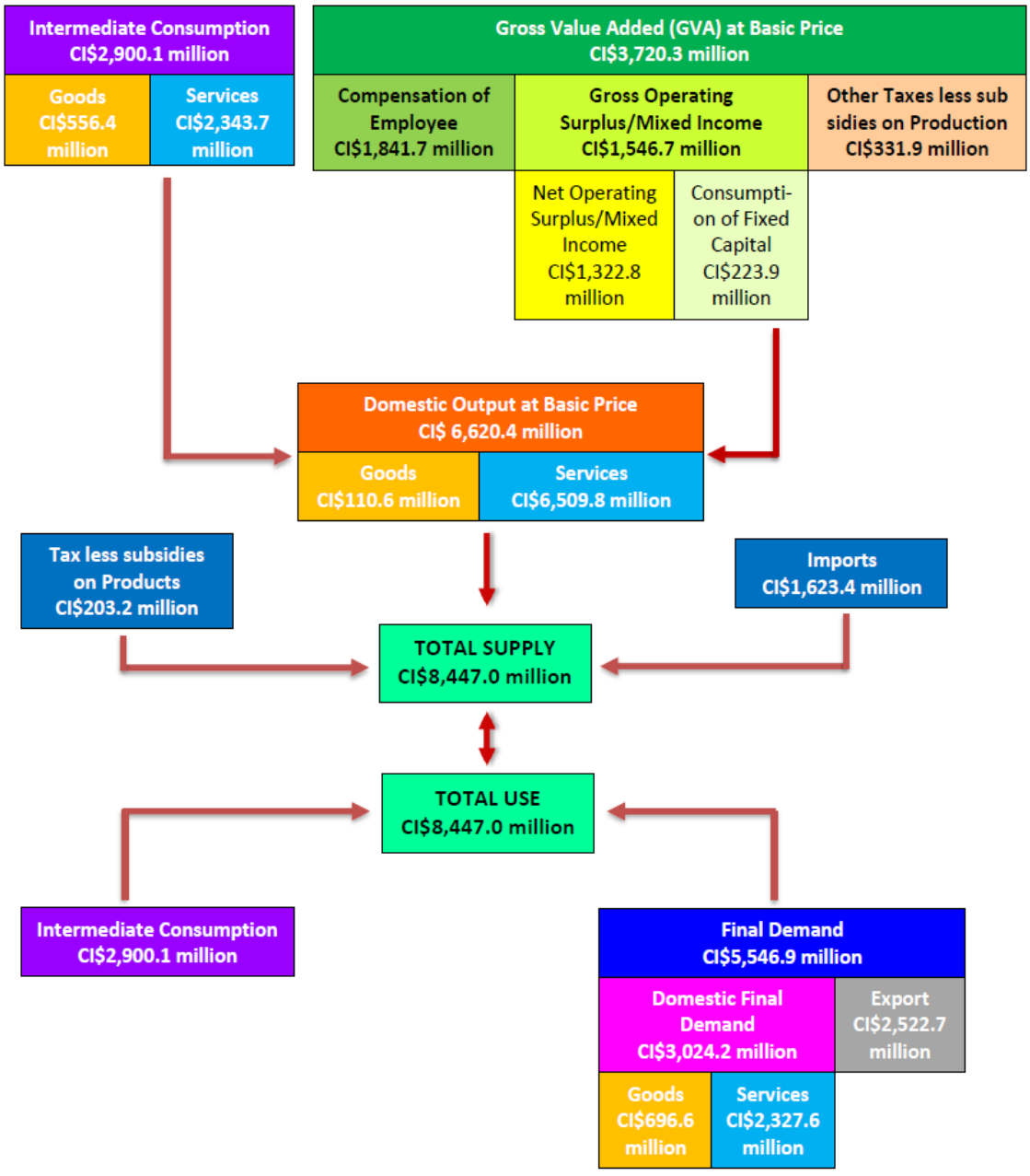
4.3 Summary results of the 2015 SUT

Figure 12 below provides a summary of the results of the 2015 SUT for the Cayman Islands. It shows total supply of goods and services at purchasers' price of CI$8,447.0 million. This was made up of domestic output CI$6,620.4 million, imports CI$1,623.4 million and net taxes on products CI$203.2 million. The supply of goods and services as

[16] Gross operating surplus includes consumption of fixed capital (CFC); net operating surplus would exclude CFC. An alternative presentation would be to present CFC separate from net operating surplus.

used as intermediate consumption by businesses (CI$2,900.1 million), exports (CI$2,522.7 million), and domestic final demand (CI$3,024.2 million).[17]

Fig. 12: Summary Results of the 2015 Cayman Islands SUT



[17] Domestic final demand includes Household Final Consumption Expenditure (HFCE), Government Final Consumption Expenditure (GFCE), Final Consumption Expenditure of NPISH, Gross Capital Formation (GCF) and change in inventories.

Nominal GDP for 2015 calculated via the three approaches can also be gleaned from the summary SUT results. The SUT allows for the reconciliation of GDP calculated via the three approaches and hence they should all yield similar estimates of GDP at purchasers' price. Table 5 shows the derivation of GDP for 2015 via the three approaches. GDPP at purchasers' prices (CI$3,923.5 million) is derived from domestic output at basic prices (CI$6,620.4 million) less intermediate consumption (CI$2,900.1 million) plus net taxes on products (CI$203.2 million). GDPI is calculated as the sum of compensation of employees (CI$1,841.7 million), net operating surplus/mixed income (CI$1,322.8 million), consumption of fixed capital (CI$223.9 million), net taxes on production (CI$331.9 million) and net taxes on products (CI$203.2 million). GDPE is derived from domestic final demand (CI$3,024.2 million) plus export (CI$2,522.7) less imports (CI$1,623.4).

Table 5: Cayman Islands' Nominal GDPP, GDPI and GDPE, 2015 (CI$'000)

GDP by Production (GDPP)	=	GDP by Income (GDPI)	=	GDP by Expenditure (GDPE)	
Domestic Output	6,620,374	Compensation of employees	1,841,704	Domestic final demand	3,024,209
less Intermediate consumption	2,900,070	*plus* Net operating surplus/mixed income	1,322,772	*plus* Export	2,522,674
=Gross Value Added	3,720,305	*plus* consumption of fixed capital	223,939	*less* Import	1,623,426
plus Net taxes on products	203,153	*plus* Net other taxes on production	331,889		
		plus Net taxes on products	203,153		
GDPP (Purchasers' Price)	3,923,457	GDPI (Purchasers' Price)	3,923,457	GDPE (Purchasers' Price)	3,923,457

4.4 Detailed results of the 2015 SUT

SUT compilation involves the reconciliation of a voluminous amount of data from various sources, bringing them together to obtain a single, robust and coherent estimate of GDP. The reconciliation process is accomplished by making adjustments and estimations to address the discovered discrepancies and data gaps. The initial data will not balance due to differences in classifications, valuation, estimation methodology, coverage, data period and definitions across the various data sources. This makes the SUT balancing process integral to the derivation of the benchmark estimates from the SUT. The balancing is done at the product level by ensuring that the identity, "supplies equal uses" holds for each product. This can be achieved through either a manual or an automatic balancing process. The balancing of the SUT for Cayman was achieved via a manual process of systematic interrogation of the data, use of justifiable assumptions, discussions with subject matter specialists, estimation of missing values using commodity flow approach, etc.

The SUT is normally compiled at the most detailed level allowed by the available data as this adds to the robustness of the resulting estimates. The 2015 SUT for the Cayman Islands was compiled for 159 products (SUT rows) and 150 industries (SUT columns).

4.4.1 The supply table

The size of the detailed SUT prevents the publication of the full table in a single report. With this in mind, the Cayman SUT was aggregated into 20 products and 20 industries similar to the schematic in Figure 13.[18] The column totals represent the total output of an industry while the row totals show the total output of a particular product at basic prices (i.e. total domestic supply). The valuation matrix is added to the total domestic supply to derive the total supply of goods and services at purchasers' price.

Fig. 13: Schematic Showing a Condensed Supply Table.

Supply by Products	Output by Industry					Total Domestic Suppply	Valuation Matrix			Total Supply (Purchasers' Price)
	Industry 1	Industry 1	….	….	Industry 20		Trade & Transport Margin (TTM)	Net taxes on Products	Imports	
Product 1	DOMESTIC OUTPUT BY INDUSTRY & PRODUCT									
Product 2						Total				
….						Product				
….						Output				
Product 20										
Total Output	Total Industry Output									Total Supply

Table 6 shows the condensed supply table for the Cayman Islands for 2015. The table shows the value of all domestically produced goods and services, which amounted to CI$6,620.4 million. The column total represents the value of output produced by the respective industries. One feature of the supply table is that the diagonal entries of the domestic supply quadrant always show higher value in relation to the off-diagonal. This represents the principal products produced by the establishments classified in the particular industry. The off-diagonal entries therefore reflect secondary goods and/or services being produced in the industry. The goods-producing industries[19] accounted

[18] Even though the SUT was condensed to a 20x20 table for presentation, this is not an input/output (I/O) table as the supply table is still valued at basic price and the use table at purchasers' price. For the I/O table both supply and use has to be valued in basic prices. Further work is required to convert to a typical I/O table.

[19] Goods-producing industries refer to agriculture & fishing, mining & quarrying, manufacturing, and construction

for 8.9 percent (CI$588.9 million) of domestic production with services accounting for 91.1 percent (CI$6,031.5 million). Of the total supply of goods and services available for consumption in 2015, 19.2 percent (CI$1,623.4 million) was imported.

Trade margins are the revenues realized on goods purchased for resale without any form of transformation. The trade margin is calculated as sales minus the cost of goods purchased for resale. Total gross margin was derived using the product flow methodology, using the trade data and information from the business survey. The detailed margin rate by product was derived indirectly using import unit price (as the cost of the particular good being sold) and the CPI price as the sale price. This indirect method of allocating the gross margins to products (goods only) was done as margin rate data at the product level was not available. The gross margin by product was adjusted as necessary during the product balancing process.

Trade and transport margin (TTM) is only applied to goods and hence is zero for the services based products. The negative figure shown for TTM for wholesale and retail trade is an offsetting entry as the margins have already been apportioned by product in the goods section of the table.

Net taxes on products refer to taxes on products (e.g. import duties, hotel occupancy tax, etc.) less any subsidies provided by government. The negative figures in net taxes reflect subsidies on the particular good or service.

Table 6: 2015 Cayman Islands' Supply Table (CI$million)

Supply by Products	Output by Industry																				Total Domestic Suppply	Valuation Matrix			Total Supply (Purchasers' Price)
	Agriculture & fishing	Mining & quarrying	Food & beverage manufauring	Other manufacturing	Electricity production	Water supply & waste management	Construction	Wholesale & retail trade	Transport & storage	Hotels & restaurant	Information & communication	Financial & insurance services	Real estate	Professional activities	Administrative & support services	Public administration & defense	Education services	Health & social work	Private arts & entertainment	Other services		Trade & Transport Margin (TTM)	Net taxes on Products	Imports	
Agriculture & fishing	20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.7	10.0	2.6	23.8	**57.1**
Mining & quarrying	-	16.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.2	5.0	1.3	5.9	**28.5**
Food & beverage manufacturing	-	-	19.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.2	89.8	35.8	150.6	**295.4**
Other manufacturing	-	-	-	59.9	-	-	-	2.6	-	3.8	2.1	-	-	-	-	-	-	-	-	-	68.5	224.1	116.4	644.6	**1,053.6**
Electricity production	-	-	-	-	169.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	169.0	-	-	-	**169.0**
Water supply & waste mgmt.	-	-	-	-	-	59.1	-	-	-	-	-	-	-	-	-	2.8	-	-	-	-	61.9	-	-	-	**61.9**
Construction	-	-	-	-	-	-	465.8	-	-	-	-	-	-	-	-	-	-	-	-	-	465.8	-	39.3	-	**505.0**
Wholesale & retail trade	1.2	-	-	-	-	0.0	-	356.0	0.3	-	4.8	-	-	2.0	2.2	-	-	1.9	2.6	0.8	371.7	(329.0)	-	0.0	**42.7**
Transport & storage	-	0.9	-	-	-	-	0.2	-	249.3	-	-	-	-	-	-	-	-	-	-	-	250.4	-	(17.7)	68.4	**301.0**
Hotels & restaurant	-	-	-	-	-	-	-	-	-	409.7	-	-	-	-	-	-	-	-	-	-	409.7	-	22.3	63.3	**495.3**
Information & communication	-	-	-	-	-	-	-	-	-	-	179.4	-	-	-	-	0.4	-	-	-	-	179.8	-	-	35.2	**214.9**
Financial & insurance services	-	-	-	-	-	-	-	-	-	-	-	2,363.4	-	-	-	-	-	-	-	-	2,363.4	-	0.5	331.7	**2,695.5**
Real estate	-	-	-	-	-	-	0.3	2.7	2.6	13.4	0.5	2.3	589.3	1.0	0.1	0.5	0.1	0.4	0.1	0.9	614.2	-	-	1.4	**615.6**
Professional activities	-	-	-	-	-	-	-	-	-	-	-	-	-	683.3	-	-	-	-	-	-	683.3	-	5.7	165.3	**854.3**
Administrative & support services	0.0	1.3	-	1.0	0.0	1.4	2.2	0.2	0.5	1.5	0.1	0.0	4.5	0.4	132.6	-	-	0.6	0.0	0.1	146.3	-	-	66.4	**212.8**
Public administration & defense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	291.8	-	-	-	-	291.8	-	-	0.2	**292.0**
Education services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125.4	-	-	-	125.4	-	(2.3)	15.4	**138.6**
Health & social work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	183.8	-	-	183.8	-	(0.6)	38.6	**221.7**
Private arts & entertainment	-	-	-	-	-	-	-	-	-	10.6	-	-	-	-	-	-	-	-	68.3	-	78.9	-	-	11.0	**89.9**
Other services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.4	100.4	-	(0.0)	1.6	**102.0**
Total Output	**21.9**	**18.5**	**19.2**	**60.9**	**169.0**	**60.5**	**468.5**	**361.5**	**252.7**	**439.0**	**186.9**	**2,365.7**	**593.8**	**686.7**	**134.9**	**295.4**	**125.5**	**186.7**	**70.9**	**102.1**	**6,620.4**	-	203.2	1,623.4	**8,447.0**

4.4.2 The use table

The use table shows how the supply of goods and services are used domestically or exported, i.e. it shows goods and services by type of use. The use table reflects whether goods and services were used as intermediate consumption by industry, final consumption, gross capital formation or exports. The row totals represent the total uses by product, while the column totals show the total input by Industry, total final consumption, total gross capital formation and total exports. Also shown in the use table are the components of value added GDP by income by industry, namely compensation of employees, other taxes less subsidies on production, consumption of fixed capital, mixed income and net operating surplus. Figure 14 below shows a schematic of the condensed use table.

Fig. 14: Schematic Showing a Condensed Use Table.

Use by Products	Purchases by Industry					Total Intermediate Consumption	Final Demand (GDP)				Total Use (Purchasers' Price)
	Industry 1	Industry 1	….	….	Industry 20		Household Final Consumption Expenditure (HFCE)	Government Final Consumption Expenditure (GFCE)	Gross Capital Formation (GCF)	Export	
Product 1	INTERMEDIATE CONSUMPTION BY INDUSTRY & PRODUCT										
Product 2						Total IC by Product					
….											
….											
Product 20											
Total IC	Total Intermediate Consumption (IC)						Total Final Demand				Total Use

Total Output							
GDPP (basic prices)							
plus Net taxes on products							
GDPP (purchasers' price)							
Compensation of employees							
plus Net taxes on production							
plus Consumption of fixed capital (CFC)							
plus Net operating surplus/mixed income							
GDPI (basic prices)							
plus Net taxes on products							
GDPI (purchasers' price)							

Final Demand	
less Imports	
GDPE (purchasers' price)	

Table 7: 2015 Cayman Islands' Use and Final Demand Table (CI$million)

Use by Products	Purchases by Industry																				Total IC	Final Demand (GDP)				Total Use (Purchasers' Price)
	Agriculture & fishing	Mining & quarrying	Food & beverage manufaturing	Other manufacturing	Electricity production	Water supply & waste management	Construction	Wholesale & retail trade	Transport & storage	Hotels & restaurant	Information & communication	Financial & insurance services	Real estate	Professional activities	Administrative & support services	Public administration & defense	Education services	Health & social work	Private arts & entertainment	Other services		Household Final Consumption Expenditure (HFCE)	Government Final Consumption Expenditure (GFCE)	Gross Capital Formation (GCF)	Export	
Agriculture & fishing	1.1	0.0	1.9	0.0	-	0.0	0.3	0.0	0.1	10.5	0.1	0.2	0.6	0.2	0.9	0.2	0.1	0.1	0.1	0.7	17.1	39.5	-	0.1	0.4	**57.1**
Mining & quarrying	0.0	1.2	-	10.5	-	0.3	14.3	0.4	0.7	0.1	-	-	0.4	0.0	0.1	-	-	0.3	0.0	-	28.2	-	-	0.3	-	**28.5**
Food & beverage manufacturing	0.6	0.2	3.6	0.7	0.4	0.3	0.7	3.6	1.9	74.9	0.9	2.4	0.3	2.1	0.4	2.7	0.6	1.5	1.9	0.4	100.0	155.9	-	0.0	39.5	**295.4**
Other manufacturing	2.5	3.1	1.8	15.1	102.0	4.4	139.0	4.1	30.1	22.5	7.5	6.7	17.5	12.3	5.1	18.7	3.6	18.6	8.3	4.7	427.6	328.9	-	173.2	123.8	**1,053.6**
Electricity production	0.5	0.7	0.4	0.6	0.1	3.7	1.7	8.4	3.6	24.1	4.2	7.2	6.6	5.7	1.6	6.8	5.5	5.1	2.1	3.5	92.1	76.9	-	-	-	**169.0**
Water supply & waste mgmt.	0.3	0.6	0.2	0.5	0.1	0.5	0.5	1.7	0.6	8.0	0.6	1.2	4.7	1.3	1.1	2.1	1.0	1.5	0.7	0.8	28.1	33.8	-	-	-	**61.9**
Construction	0.1	0.3	0.1	0.3	0.3	6.0	105.9	2.5	1.7	6.7	0.9	3.9	36.4	3.5	0.5	2.4	2.1	2.3	0.5	1.3	177.8	-	-	327.2	-	**505.0**
Wholesale & retail trade	0.1	0.1	0.2	0.5	0.6	1.2	2.3	2.3	4.3	1.1	0.9	0.3	0.1	0.9	3.7	1.3	0.2	0.6	0.3	0.3	21.4	21.4	-	-	-	**42.7**
Transport & storage	0.2	1.7	0.2	1.0	0.2	1.5	6.0	13.8	24.4	5.5	2.8	17.8	0.6	7.2	1.4	4.3	0.8	1.1	0.3	0.6	91.4	103.3	3.6	-	102.7	**301.0**
Hotels & restaurant	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.8	0.2	0.1	2.9	0.1	0.9	0.2	0.5	0.1	0.9	0.0	0.1	8.5	158.2	-	-	328.6	**495.3**
Information & communication	0.5	0.2	0.2	0.7	0.9	1.2	2.4	9.9	4.0	5.4	27.2	30.8	2.2	12.0	3.6	6.4	1.8	2.3	1.1	2.4	115.4	83.7	-	8.3	7.5	**214.9**
Financial & insurance services	0.7	0.8	1.1	3.1	2.6	3.8	10.0	34.0	18.2	15.3	6.4	828.9	129.8	28.2	5.6	14.3	8.0	6.9	4.2	5.3	1,127.1	286.5	-	-	1,281.9	**2,695.5**
Real estate	0.0	0.4	0.4	2.1	-	0.1	2.1	7.0	4.0	25.8	5.0	36.2	27.0	26.9	4.6	5.0	5.4	2.8	5.7	6.1	166.6	420.1	-	25.0	4.0	**615.6**
Professional activities	0.1	0.2	0.4	0.7	2.0	1.7	34.9	12.3	8.1	18.7	11.5	114.1	15.8	58.0	4.3	17.9	2.6	3.6	2.4	4.3	313.4	7.0	-	6.1	527.8	**854.3**
Administrative & support services	0.3	0.4	0.3	0.8	2.7	1.3	5.9	20.8	11.1	16.0	9.1	45.7	9.2	16.7	3.1	7.9	4.1	5.4	1.4	2.2	164.3	22.0	-	-	26.4	**212.8**
Public administration & defense	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.8	0.1	0.8	0.3	2.4	0.0	2.1	0.3	0.5	0.4	0.2	0.4	0.2	9.1	4.3	270.7	-	7.9	**292.0**
Education services	-	-	-	-	-	-	-	-	-	0.4	-	1.4	-	1.6	-	2.5	0.3	0.0	-	-	6.2	71.0	55.6	-	5.8	**138.6**
Health & social work	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	3.0	0.0	0.7	3.8	179.4	34.2	-	4.2	**221.7**
Private arts & entertainment	-	-	-	-	-	-	-	-	-	0.7	0.0	-	-	0.0	-	0.1	0.1	-	0.4	-	1.3	26.9	4.5	-	57.2	**89.9**
Other services	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	0.5	0.7	70.2	26.2	-	4.9	**102.0**
Intermediate Consumption	**7.0**	**9.9**	**10.8**	**36.7**	**111.9**	**26.0**	**326.4**	**122.1**	**114.9**	**236.7**	**77.6**	**1,101.8**	**251.4**	**179.4**	**36.5**	**94.1**	**36.8**	**56.2**	**29.8**	**34.0**	**2,900.1**	2,089.1	394.8	540.2	2,522.7	**8,447.0**
Total Output (from Supply Table)	21.9	18.5	19.2	60.9	169.0	60.5	468.5	361.5	252.7	439.0	186.9	2,365.7	593.8	686.7	134.9	295.4	125.5	186.7	70.9	102.1	6,620.4					
GDPP (basic prices)	14.9	8.6	8.4	24.2	57.0	34.5	142.1	239.4	137.8	202.3	109.3	1,263.9	342.4	507.3	98.4	201.4	88.8	130.5	41.1	68.1	3,720.3					
plus Net taxes on products																					203.2					
GDPP (purchasers' price)																					**3,923.5**					
Compensation of employees	6.9	6.0	5.6	14.7	12.1	14.8	121.9	118.8	86.4	127.7	49.2	340.7	47.9	378.6	73.3	186.5	81.7	111.9	26.1	31.2	1,841.9					
plus Net taxes on production	0.3	0.4	0.3	0.7	0.3	0.6	4.5	8.8	1.7	6.8	11.5	111.2	1.5	23.7	4.4	0.2	0.4	1.9	1.2	1.8	182.0					
plus Consumption of fixed capital (CFC)	0.6	1.5	1.0	1.5	22.2	5.1	3.4	23.7	11.2	5.6	20.4	27.3	51.0	10.5	5.9	14.7	6.1	8.1	2.2	2.0	223.9					
plus Net operating surplus/mixed income	7.0	0.8	1.5	7.4	22.4	14.1	12.4	88.2	38.5	62.1	28.2	784.7	242.0	94.4	14.9	0.0	0.6	8.6	11.7	33.1	1,472.5					
GDPI (basic prices)	14.9	8.6	8.4	24.2	57.0	34.5	142.1	239.4	137.8	202.3	109.3	1,263.9	342.4	507.3	98.4	201.4	88.8	130.5	41.1	68.1	3,720.3					
plus Net taxes on products																					203.2					
GDPI (purchasers' price)																					**3,923.5**					

Final Demand	5,546.9
less Imports	1,623.4
GDPE (purchaser' price)	**3,923.5**

Table 7 shows that the purchase of goods and services by industries (i.e. intermediate consumption-IC) in 2015 amounted to CI$2,900.1 million or 43.8 percent of domestic output (CI$6,620.4 million). The simple interpretation of this is that $2.28 of output is produced for every $1 of intermediate good or service purchased by businesses. The row totals show the amount of each good or service that is used by business or for final demand. The value of IC is dominated by financial & insurance services (CI$1,127.1 million or 38.9 percent), this is followed by other manufacturing (CI$427.6 million or 14.7 percent)[20], professional services (CI$313.4 million or 10.8 percent), construction (CI$177.8 million or 6.1 percent), real estate (CI$166.6 million or 5.7 percent), administrative & support services (CI$164.3 million or 5.7 percent), and information & communication (CI$115.4 million or 4.0 percent). The comparison of the Total IC column with the HFCE column will provide information on the level of purchases by businesses relative to households for each product. For example, of the total demand of agricultural & fishing products (CI$57.1 million), businesses purchased CI$17.1 million (30.0 percent)[21] while households purchased CI$39.5 million (69.2 percent).

The data along the columns provide an insight in the goods and services being used by each industry and in what proportion, i.e. the industry cost structure. For example, looking at the construction column reveals that a significant portion of the total IC of CI$326.4 million is spent on other manufacturing (which includes ready-mix concrete, concrete products, fabricated & structural metal products, etc.), professional services (e.g. architects, engineers, quantity surveyors, etc.), and construction, i.e. the industry using its own services. In this case, the industry using its own services would be in the form of payment to subcontractors (e.g. a developer purchasing the services of electricians, plumbers, etc.). Other manufacturing (CI$139.0 million), professional services (CI$34.9 million) and construction (CI$105.9 million) accounted for 85.7 percent of total IC for the construction industry.

The table also show the reconciliation of the three approaches to measuring GDP, as a result of the data confrontation that occurs in the SUT and the maintaining of the supply=use identity at the product level. A more detailed discussion of GDP derived via the different approaches is contained in chapters 5-7 of this report.

[20] Other manufacturing includes concrete products, ready mix concrete, fabricated & structural metal products, furniture, miscellaneous manufacturing, etc.

[21] As expected, the hotel & restaurant industry posted the largest use agriculture & fishing products among businesses (CI$10.5 million or 61.4 percent).

5. GROSS DOMESTIC PRODUCT ESTIMATES-THE PRODUCTION APPROACH

5.1 Overview of GDP at purchasers' prices

The Cayman Islands' System of National Accounts Report 2017 presents the rebased gross domestic product (GDP) estimates for the period 2013-2017.[22] The main estimates were calculated using both the production (GDPP) and income approaches (GDPI). This report introduces the third method of calculating GDP, i.e. GDP by expenditure (GDPE). For this report, GDPE is only compiled for the 2015. The production approach to estimating GDP is obtained by summing the value added of all industries within the economy (i.e. the gross value of outputs minus the value of intermediate consumption). The income approach is obtained by summing the income earned by the factors of production, i.e. compensation of employees, consumption of fixed capital, taxes less subsidies on production and imports, and operating surplus/mixed income. The expenditure approach sums the expenditures on final goods and services, capital investments by business, and net exports (i.e. exports minus imports).

This section takes a detailed look at GDPP (the main calculation method used in the SNA for the Cayman Islands) through the presentation of a series of tables and figures showing the rebased 2017 estimates of GDP by industry. GDPI and GDPE will be examined in detail in Sections 6 and 7, respectively.

The economy of the Cayman Islands continued on its expansionary path in 2017 posting the seventh consecutive year of economic growth. The total value of goods and services produced in 2017 (as reflected by real GDP at purchasers' price) increased by 3.0 percent, a marginally lower rate than the 3.1 percent growth recorded in 2016. The performance in 2017 represents the second highest annual growth rate recorded since the economy emerged from recession in 2011. The growth in 2017 resulted in an average annual expansion of 2.6 percent for the five-year period 2013-2017. The continued upward trajectory of the domestic economy speaks to the robustness of the economic expansion.

The expansion in 2017 was generated through growth in the goods-producing industries (3.7%) as well as the service industries (3.2%). The performance of the good-producing industries resulted from growth in all areas in the group, led by construction services (4.1%), and manufacturing activities (3.3%). As with the goods-producing industries, all areas in the service industries expanded in 2017. This is further evidence of the broad-based performance of the domestic economy. Eight of the fourteen service-producing industries posted growth rates of 3 percent or higher, with another four growing at 2

[22] GDP by income components is provided for the period 2010-2017. GDP by expenditure is only presented for 2015 (the new base year).

percent or higher. The growth in the service-producing industries was led by the performance in human health & social work activities (6.4%); other services (5.5%)[23]; water supply & waste management services (5.5%); administrative & support services activities which consists mainly of security and car rental services (4.7%); professional, scientific & technical activities which consists primarily of legal & accounting services (4.3%); and hotel & restaurant activities (4.3%).

Table 8 below shows the total value of domestic output for the years 2012 to 2017. 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 8: System of National Accounts Main Aggregates and Per Capita Indicators

Main Aggregates (CI$'000)	2012	2013	2014	2015	2016	2017
GDP (Current Basic Prices)	3,374,819.6	3,468,192.2	3,595,881.2	3,720,304.5	3,858,845.6	4,055,647.3
GDP (Constant Basic 2015 Prices)	3,480,223.7	3,531,751.0	3,611,830.7	3,720,304.5	3,819,804.9	3,941,920.7
GDP (Current Purchasers' Prices)	3,575,822.8	3,671,482.0	3,802,362.8	3,923,457.0	4,082,260.6	4,284,690.2
GDP (Constant Purchasers' 2015 Prices)	3,669,753.9	3,716,702.2	3,815,363.1	3,923,457.0	4,044,938.3	4,167,878.1
Mean Population ('000)	56.124	56.239	56.993	59.054	61.331	63.115
Per Capita Indicators (CI$)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
GDP (Current Basic Prices)	60,131.5	61,668.8	63,093.4	62,998.3	62,918.4	64,258.1
GDP (Constant Basic 2015 Prices)	62,009.5	62,799.0	63,373.2	62,998.3	62,281.8	62,456.2
GDP (Current Purchasers' Prices)	63,712.9	65,283.6	66,716.3	66,438.5	66,561.1	67,887.0
GDP (Constant Purchasers' 2015 Prices)	65,386.5	66,087.6	66,944.4	66,438.5	65,952.6	66,036.3

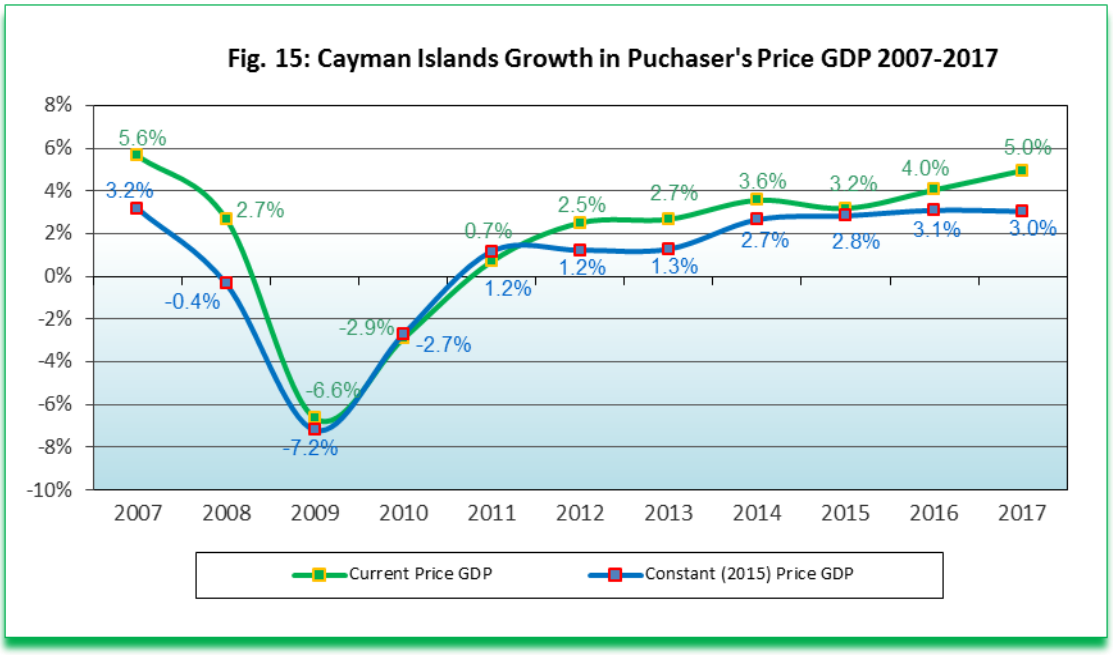
Notes:
1. GDP at basic price excludes net taxes on goods and services
2. GDP at purchasers' price includes net taxes on goods and services
3. Mean population refers to the mid-year population

The 3.0 percent increase in the overall real (purchasers' price) GDP[24], led to a 0.1 percent increase in the real GDP per capita as the estimated mid-year population grew by 2.9 percent. The inflation-adjusted per capita GDP (at purchasers' prices) increased

[23] The other services industry is dominated by diving, snorkeling & related watersport activities. It also includes the activities of hairdressers, barbers, wedding planners, dry cleaners, churches, spas, etc.
[24] Real GDP refers to GDP at constant (2015) prices, i.e. the inflation-adjusted GDP

for the second consecutive year, reversing the decline posted in 2015. Real GDP per capita increased to CI$66,036.3 in 2017 from CI$65,952.6 in 2016, and CI$66,438.5 in 2015.

Figure 15 below shows the comparative growth rates of GDP at current and constant purchasers' prices for the period 2007-2017.[25] The graph reflects a growth in GDP at constant prices of 3.0 percent in 2017, a slowing of the 3.1 percent expansion recorded in 2016. GDP at current prices grew by 5.0 percent in 2017, an acceleration of the 4.0 percent recorded in 2016. The graph shows the economy bottoming out in 2009 when the constant price GDP declined by 7.2 percent in the midst of the global recession. The economy has steadily recovered since 2009, returning to positive growth since 2011.



5.2 GDP by industrial origin

The estimated real GDP (at purchasers' prices) for the Cayman Islands grew to CI$4,167.9 million in 2017 from the CI$4,044.9 million recorded for 2016. This resulted from growth in all (18) industries. The expansion was primarily led by the growth in human health & social work, other services, and water supply, sewerage & waste management. Table 9 below provides a breakdown of real GDP by industry in purchasers' prices. The GDP series prior to 2015 (new base year) is non-additive (total

[25] This represents the growth rate for the entire calculated GDP series which runs from 2006-2017 (the growth rate series would then be 2007-2017). The GDP estimates up to 2005 are based on an indicator method and not direct calculations.

GDP not equal to the sum of its components) as a consequence of the methodology employed to link the rebased GDP series with the old GDP series. The methodology preserves the historical growth rates of real GDP but suffers from the non-additivity of the series prior to the base year. The GDP series from the base year forward will still be additive. The problem of non-additivity only impacts the real GDP series as the entire series of nominal GDP will still be additive. The non-additive issue was discussed in detail in Chapter 3.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN					
TABLE 9: GDP AT CONSTANT BASIC & PURCHASERS' PRICES, 2015=100 (CI$'000)					
INDUSTRY	**2013**	**2014**	**2015**	**2016**	**2017**
01 Agriculture & Fishing	13,433.8	14,538.0	14,857.9	15,279.7	15,647.1
02 Mining & Quarrying	8,452.7	7,914.4	8,603.3	9,136.1	9,229.4
03 Manufacturing	31,301.8	31,953.1	32,607.7	35,465.7	36,634.8
04 Electricity, Gas & Air Conditioning Supply	54,535.5	55,360.7	57,045.2	59,285.0	60,564.1
05 Water Supply, Sewerage & Waste Management	38,224.6	39,549.3	34,491.5	36,659.7	38,688.5
06 Construction	128,794.2	132,136.9	142,131.2	148,594.9	154,758.7
07 Wholesale & Retail Trade	230,091.2	235,059.4	239,373.8	250,216.4	258,092.0
08 Transport & Storage	131,358.3	135,664.6	137,801.5	140,940.8	144,320.6
09 Hotels & Restaurants	192,991.6	200,648.2	202,259.0	204,369.1	213,070.2
10 Information & Communication	106,887.4	106,351.6	109,299.2	112,218.6	113,741.0
11 Financial & Insurance Services	1,223,403.1	1,235,187.4	1,263,887.5	1,273,376.3	1,304,554.7
12 Real Estate Activities	331,601.2	335,296.7	342,423.2	354,059.8	361,607.0
13 Professional, Scientific & Technical Activities	467,189.6	486,637.8	507,280.3	526,497.5	549,034.7
14 Administrative & Support Service Activities	91,667.9	95,087.2	98,405.3	102,072.7	106,840.4
15 Public Administration & Defense	197,027.8	197,358.0	202,395.6	207,141.8	214,218.8
16 Education Services	84,791.6	85,488.0	88,758.0	92,852.4	94,131.0
17 Human Health & Social Work	120,337.0	125,198.6	130,533.6	139,650.1	148,586.5
18 Other Services	100,965.2	105,889.9	108,150.5	111,988.4	118,201.1
GDP at Constant Basic (2015) Prices	**3,531,751.0**	**3,611,830.7**	**3,720,304.5**	**3,819,804.9**	**3,941,920.7**
Add: Taxes Less Subsidies on Products	186,382.4	202,391.2	203,152.6	225,133.4	225,957.3
GDP at Constant Purchasers' (2015) Prices	**3,716,702.2**	**3,815,363.1**	**3,923,457.0**	**4,044,938.3**	**4,167,878.1**

5.3 GDP rates of growth by industry

Table 10 shows the growth rate of real GDP broken down by industry. The local economy recorded growth of 3.0 percent in 2017 which resulted in a 2.6 percent average annual growth rate over the five-year period (2013-2017). The expansion in the domestic economy in 2017 resulted from growth in both the goods-producing (3.7%) and service-producing industries (3.2%).

The continued growth in the goods-producing industries resulted in a five-year annual average growth rate 4.0 percent. The service-producing industries also continued its upward trend posting a five-year annual average growth rate of 2.3 percent.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN

TABLE 10: RATE OF GROWTH OF GDP AT CONSTANT BASIC & PURCHASERS' PRICES, 2015=100

INDUSTRY	2013	2014	2015	2016	2017	5-Year Average
Goods Producing Industries	**2.4%**	**2.5%**	**6.2%**	**5.2%**	**3.7%**	**4.0%**
01 Agriculture & Fishing	1.7%	8.2%	2.2%	2.8%	2.4%	3.5%
02 Mining & Quarrying	-0.3%	-6.4%	8.7%	6.2%	1.0%	1.8%
03 Manufacturing	2.5%	2.1%	2.0%	8.8%	3.3%	3.7%
06 Construction	2.6%	2.6%	7.6%	4.5%	4.1%	4.3%
Service Producing Industries	**1.2%**	**2.0%**	**2.4%**	**2.5%**	**3.2%**	**2.3%**
04 Electricity, Gas & Air Conditioning Supply	1.4%	1.5%	3.0%	3.9%	2.2%	2.4%
05 Water Supply, Sewerage & Waste Management	-1.2%	3.5%	-12.8%	6.3%	5.5%	0.3%
07 Wholesale & Retail Trade	1.5%	2.2%	1.8%	4.5%	3.1%	2.6%
08 Transport & Storage	2.3%	3.3%	1.6%	2.3%	2.4%	2.4%
09 Hotels & Restaurants	2.0%	4.0%	0.8%	1.0%	4.3%	2.4%
10 Information & Communication	-0.7%	-0.5%	2.8%	2.7%	1.4%	1.1%
11 Financial & Insurance Services	0.4%	1.0%	2.3%	0.8%	2.4%	1.4%
12 Real Estate Activities	0.7%	1.1%	2.1%	3.4%	2.1%	1.9%
13 Professional, Scientific & Technical Activities	2.6%	4.2%	4.2%	3.8%	4.3%	3.8%
14 Administrative & Support Service Activities	0.6%	3.7%	3.5%	3.7%	4.7%	3.3%
15 Public Administration & Defense	2.4%	0.2%	2.6%	2.3%	3.4%	2.2%
16 Education Services	1.8%	0.8%	3.8%	4.6%	1.4%	2.5%
17 Human Health & Social Work	4.1%	4.0%	4.3%	7.0%	6.4%	5.2%
18 Other Services	1.2%	4.9%	2.1%	3.5%	5.5%	3.5%
GDP at Constant Basic (2015) Prices	**1.5%**	**2.3%**	**3.0%**	**2.7%**	**3.2%**	**2.5%**
Taxes Less Subsidies on Products	-1.7%	8.6%	0.4%	10.8%	0.4%	3.7%
GDP at Constant Purchasers' (2015) Prices	**1.3%**	**2.7%**	**2.8%**	**3.1%**	**3.0%**	**2.6%**

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

5.3.1 Goods-producing industries

The goods-producing industries registered its fifth consecutive year of growth in 2017, led mainly by the improved activities of construction and manufacturing. The group registered growth of 3.7 percent in 2017 following the 5.2 percent growth posted in 2016.

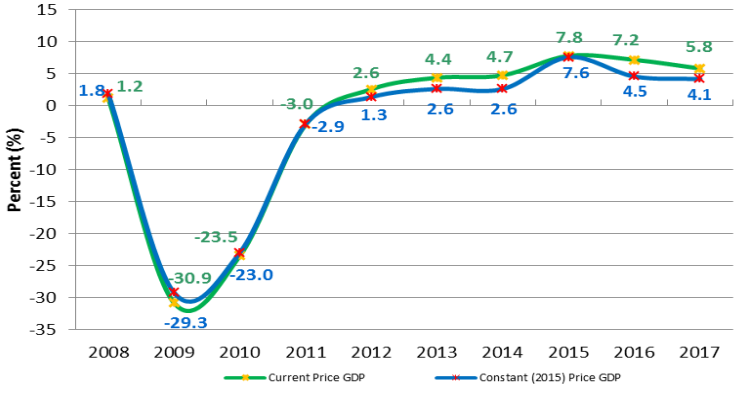
The activities of **agriculture & fishing** continued on its upward trajectory in 2017, increasing by 2.4 percent, albeit at a slower pace than 2016 when it grew by 2.8 percent. This was due to the improvements in the sub groups agricultural crops and animal farming. The expansion in the industry was tempered by the decline in the activities of capture fishing.

Mining & quarrying continued to expand in 2017, albeit at a slower pace than in 2016. The activity grew by 1.0 percent in 2017, following the 6.2 percent and 8.7 percent growth registered in 2016 and 2015, respectively. The slowing in the rate of expansion in mining & quarrying came on the heels of the 16.2 percent increase in the import of construction aggregate (from 190,629 tons in 2016 to 221,537 tons in 2017).[26]

The **manufacturing industry** grew by 3.3 percent in 2017 continuing on the expansion started in 2012. This resulted in a five-year annual average of 3.7 percent. The improved performance in 2017 reflected the higher demand for concrete and concrete products.

The value added of the **construction industry** grew for the sixth successive year in 2017, growing by 4.1 percent, marginally lower than the 4.5 percent growth in 2016. This resulted in a five-year annual average growh rate of 4.3 percent and is evidence of the continued recovery of the industry from the declines posted in 2009-2011. The higher output levels in 2017 is attributed to the improved performance of the building construction sub-industry which grew by 6.3 percent and building installation which grew by 5.6 percent. The improvement in construction

Fig. 16: Cayman Islands' Growth in Construction GDP 2008-2017



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

activities in 2017 adds to the positive perfomances posted in 2012 (1.3%), 2013 (2.6%), 2014 (2.6%), 2015 (7.6%) and 2016 (4.5%).

5.3.2 Service-producing industries

In 2017, the service-producing industries recorded their highest combined rate of growth over the past five years. The growth of 3.2 percent in 2017 represents the seventh consecutive year of increase, resulting in a five-year annual average growth of 2.3 per cent. The expansion was fuelled by higher levels of activity in all industries, led by human health & social work; other services; water supply & sewerage management; administrative & support services; professional scientific & technical activities; and hotels & restaurants.

The increase of 2.2 percent in the **electricity, gas & air conditioning supply industry** represents the fifth consecutive year of expansion since 2013. The industry posted a five-year annual average growth of 2.4 percent. The expansion occurred against the background of a 2.5 percent increase in electricity consumption, which moved from 606,699 megawatt hours (Mwhrs) in 2016 to 621,786 Mwhrs in 2017. The increase is attributed mainly to higher residential electricity consumption supported by the marginal increase in commercial consumption.

The **water supply, sewerage & waste management industry** grew by 5.5 percent in 2017. This resulted in a five-year annual average increase of 0.3 percent. This growth resulted from an increase in water consumption. The low five-year average increase results from the 12.8 percent decline posted in 2015. The decline in 2015 resulted from reclassification of government waste collection activities from this industry into public administration.

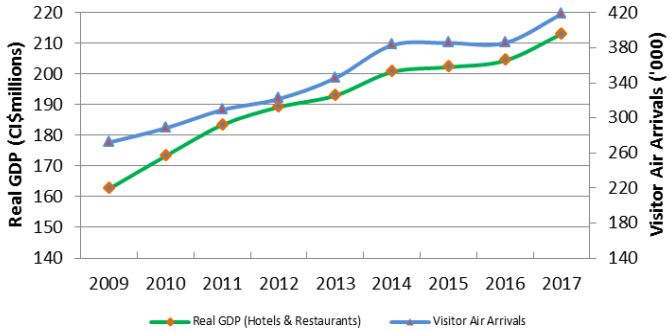
Wholesale & retail trade continued on its growth trajectory, with a 3.1 percent increase in 2017. This resulted in a five-year annual average growth rate of 2.6 percent. The expansion may be correlated with an increase in the aggregate demand as the year-end population increased by 3.3 percent, moving to 63,415 in 2017 from 61,361 in 2016.

Transport & storage activities continued to grow at a steady pace, expanding further by 2.4 percent in 2017, just above the 2.3 per cent recorded in 2016. This represents the seventh consecutive year of increase resulting in a five-year annual average increase of 2.4 percent. The positive performance of the industry was fuelled by the 2.3 percent increase in the transport services sub-industry and the 3.3 percent increase in supporting transport activities. The contributors to the positive results in transport services sub-industry were land transport (3.1%), sea transport (3.0%) and air transport

services (1.4%). Post and courier services also contributed, growing by 1.2 percent, the second consecutive year of growth following three previous years of decline.

The **hotels & restaurants industry** recorded its highest level of growth in the last five years, growing by 4.3 percent in 2017. This was due in part to the 8.5 percent growth in stay-over visitors which increased to 418.4 thousand in 2017 from 385.5 thousand in 2016. Figure 17 illustrates the continued positive relationship between real GDP for the hotels & restaurants industry and the stay-over (air arrival) visitors (i.e. real GDP and visitor arrivals are trending in a similar direction). The flattening of both series in 2015 and 2016 along with the parallel movement in other years is evidence of this positive relationship. However, it should be noted that while both maintain a positive relationship, there exists other underlying factors that influence the movements in GDP for the hotels & restaurants industry.

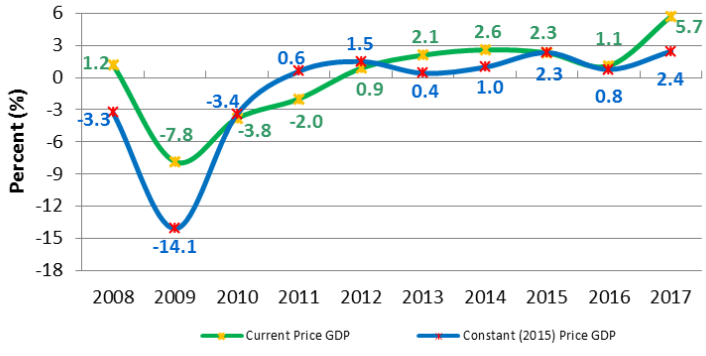
Fig. 17: Real GDP of Hotels & Restaurant and Air Visitor Arrivals 2009-2017



Information & communication activities grew for the third consecutive year in 2017 (1.4%), albeit at a lower rate when compared to the increase of 2.7 percent and 2.8 percent in 2016 and 2015 respectively. The expansion resulted in a five-year annual average growth rate of 1.1 percent. The expansion in the industry was influenced by the 4.4 percent increase in the computer & related services sub-industry. In terms of contribution, the industry is dominated by the telecommunication services which grew by 0.5 percent in 2017.

The **financial & insurance services industry** posted another year of expansion in 2017 growing by 2.4 percent. This is higher than the 0.8 percent growth recorded for 2016. The industry continued to show consistent growth with a five-year annual average growth rate of 1.4 percent. The performance of the

Fig. 18: Cayman Islands' Growth in GDP for Financial & Insurance Services 2008-2017



industry was broad-based with all sub-industries expanding in 2017. The increased activity in the industry emanated from the growth in insurance services (3.6%), other financial services[27] (3.6%), auxiliary financial services[28] (2.3%), and services of banking institutions (0.4%). Figure 18 provides a graphical display of the performance of the sector over the period 2008-2017.

Real estate activities continued to grow at a steady pace, expanding by 2.1 percent in 2017, albeit at a slower rate than in 2016 (3.4%). The continued expansion in 2017 resulted in a five-year annual average growth rate of 1.9 percent. The expansion resulted from increases in property management activities (6.9%), the activities of real estate agents and brokers (5.0%), renting of commercial buildings (3.2%), and operations of owner-occupied dwellings (1.4%).

The **professional, scientific & technical activities** industry registered an increase of 4.3% in 2017, representing an acceleration from the 3.8 percent posted in 2016. The industry recorded a five-year annual average growth of 3.8 percent, resulting from six consecutive years of expansion. The performance in 2017 was attributed to the increase in the value added of accounting services (4.2%) and legal services (4.7%).

Administrative & support service activities grew by 4.7 per cent in 2017, the highest increase in five years. This continued increase led to a five-year annual average growth rate of 3.3 percent. Growth in the industry was fuelled by increased activity in renting of other machinery & equipment (9.4%), labour recruitment services (8.3%), building cleaning activities (6.3%), and car rental services (5.0%).

Public administration & defence activities registered an increase of 3.4 percent which outpaced the four previous years of expansion. This resulted in a five-year annual average growth rate of 2.2 percent. The expansion in public administration services is traced to the increase in the number of core government employees. Personnel costs increased by 7.5 percent, moving to CI$273.6 million in 2017, from CI$254.5 million in 2016.

Education services posted an increase of 1.4 percent in 2017, sharply lower when compared to the 4.6 percent growth recorded in 2016. Nonetheless, the expansion in 2017 resulted in a five-year annual average growth rate of 2.5 percent. Contributing to the higher output levels was the growth in both the public and private education sub-industries of 2.1 percent and 2.8 percent, respectively. The lower rate of expansion in

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

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

2017 when compared to 2016 stemmed from a lowering in the rate of expansion in both public and private education sub-industries.

The **human health & social work industry** recorded the highest growth rate (6.4%) among the services-producing industries in 2017. The rate of expansion was slightly less than the 7.0 percent posted in 2016. The performance in 2017 resulted in the highest five-year annual average growth of all industries in the economy (5.2%). The continued improvement in the output of both private and public health services positively impacted the performance of the industry. In 2017, private health services continued to be the main driver of growth, expanding by 10.3 percent while public health services grew by 2.5 percent.

The value added of **other services** increased by 5.5 percent in 2017, the highest since posting a 4.9 percent increase in 2014. This eclipsed the growth rates recorded for 2016 (3.5%) and 2015 (2.1%). Contributing to the improved performance in the industry was the 2.0 percent growth in water sport activities and the 10.7 percent increase in activities of private household with employed persons. The increase in the output of water sports activities was positively influenced by the 2.4 percent increase in total visitors in 2017 compared to 2016.

In summary, the Cayman Islands' economy recorded its second highest growth rate in the past seven years (3.0%), only preceded by 2016 which registered a marginally higher rate at 3.1 percent. The 3.0 percent achieved in 2017 outpaced the 2.8 percent posted in 2015, the 2.7 percent in 2014 and 1.3 percent in 2013. This trend of expansion led to a five-year annual average growth rate of 2.6 percent for the local economy. Domestic economic activity was buoyed by a general increase in the aggregate demand for goods and services associated with the continued increase in the resident population and the growth in total visitors. The continued growth in financial & insurance services and professional, scientific & technical activities along with the continued buoyance in global economic activity serve as positive indicators for sustained expansion of the domestic economy.

5.4 Contribution to GDP by industry

Table 11 shows the industries classified as goods-producing and service-producing. In 2017, there was virtually no change in the combined share of the goods-producing industries, remaining stable at 5.2 percent. The share of the services-producing industries however, increased marginally from 89.3 percent in 2016 to 89.4 percent in 2017. This resulted from the marginal increases in the contribution of professional, scientific & technical activities, administrative & support service activities and human health & social work services. These increases were tempered by the decline in shares of financial & insurance services, information & communication, and real estate activities.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN

TABLE 11: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT PURCHASERS' PRICES, 2015=100

INDUSTRY	2012	2013	2014	2015	2016	2017
Goods Producing Industries	**4.8%**	**4.9%**	**4.9%**	**5.1%**	**5.2%**	**5.2%**
01 Agriculture & Fishing	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
02 Mining & Quarrying	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
03 Manufacturing	0.8%	0.8%	0.8%	0.8%	0.9%	0.9%
06 Construction	3.4%	3.5%	3.5%	3.6%	3.7%	3.7%
Service Producing Industries	**90.7%**	**90.7%**	**90.1%**	**89.8%**	**89.3%**	**89.4%**
04 Electricity, Gas & Air Conditioning Supply	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
05 Water Supply, Sewerage & Waste Management	1.1%	1.0%	1.0%	0.9%	0.9%	0.9%
07 Wholesale & Retail Trade	6.2%	6.2%	6.2%	6.1%	6.2%	6.2%
08 Transport & Storage	3.5%	3.5%	3.6%	3.5%	3.5%	3.5%
09 Hotels & Restaurants	5.2%	5.2%	5.3%	5.2%	5.1%	5.1%
10 Information & Communication	2.9%	2.9%	2.8%	2.8%	2.8%	2.7%
11 Financial & Insurance Services	33.2%	32.9%	32.4%	32.2%	31.5%	31.3%
12 Real Estate Activities	9.0%	8.9%	8.8%	8.7%	8.8%	8.7%
13 Professional, Scientific & Technical Activities	12.4%	12.6%	12.8%	12.9%	13.0%	13.2%
14 Administrative & Support Service Activities	2.5%	2.5%	2.5%	2.5%	2.5%	2.6%
15 Public Administration & Defense	5.2%	5.3%	5.2%	5.2%	5.1%	5.1%
16 Education Services	2.3%	2.3%	2.2%	2.3%	2.3%	2.3%
17 Human Health & Social Work	3.1%	3.2%	3.3%	3.3%	3.5%	3.6%
18 Other Services	2.7%	2.7%	2.8%	2.8%	2.8%	2.8%
GDP at Constant Basic (2015) Prices	**94.8%**	**95.0%**	**94.7%**	**94.8%**	**94.4%**	**94.6%**
Taxes Less Subsidies on Products	5.2%	5.0%	5.3%	5.2%	5.6%	5.4%
GDP at Constant Purchasers' (2015) Prices	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

An examination of the contribution of the various industries to the domestic economy is useful in discerning their relative ranking. Table 12 below shows the contribution of the eighteen (18) industries as well as their ranking over the period under review. The rankings reflect the relative importance of an industry (as it pertains to their direct contribution to real GDP) to the Cayman Islands' economy. There were minor changes in the relative ranking of the industries in 2017 when compared to 2016. The changes were found between rankings eight (8) through eleven (11), where human health & social work and transport & storage exchanged positions at eighth (8th) and ninth (9th) respectively; whereas, other services rose one position to tenth (10th) shifting information & communication down to eleventh (11th). Changes were observed in the individual contribution of six (6) of the eighteen (18) industries. Of the six industries registering a change in their contribution, three registered increases while three posted declines.

TABLE 12: INDUSTRY CONTRIBUTION TO GDP AT CONSTANT PURCHASERS' PRICES, 2015=100

Ranking					INDUSTRY	% Contribution to GDP				
2013	2014	2015	2016	2017		2013	2014	2015	2016	2017
1	1	1	1	1	Financial & Insurance Services	32.9	32.4	32.2	31.5	31.3
2	2	2	2	2	Professional, Scientific & Technical Activities	12.6	12.8	12.9	13.0	13.2
3	3	3	3	3	Real Estate Activities	8.9	8.8	8.7	8.8	8.7
4	4	4	4	4	Wholesale & Retail Trade	6.2	6.2	6.1	6.2	6.2
5	6	5	5	5	Public Administration & Defense	5.3	5.2	5.2	5.1	5.1
6	5	6	6	6	Hotels & Restaurants	5.2	5.3	5.2	5.1	5.1
8	8	7	7	7	Construction	3.5	3.5	3.6	3.7	3.7
9	9	9	9	8	Human Health & Social Work	3.2	3.3	3.3	3.5	3.6
7	7	8	8	9	Transport & Storage	3.5	3.6	3.5	3.5	3.5
11	11	11	11	10	Other Services	2.7	2.8	2.8	2.8	2.8
10	10	10	10	11	Information & Communication	2.9	2.8	2.8	2.8	2.7
12	12	12	12	12	Administrative & Support Service Activities	2.5	2.5	2.5	2.5	2.6
13	13	13	13	13	Education Services	2.3	2.2	2.3	2.3	2.3
14	14	14	14	14	Electricity, Gas & Air Conditioning Supply	1.5	1.5	1.5	1.5	1.5
15	15	15	15	15	Water Supply, Sewerage & Waste Management	1.0	1.0	0.9	0.9	0.9
16	16	16	16	16	Manufacturing	0.8	0.8	0.8	0.9	0.9
17	17	17	17	17	Agriculture & Fishing	0.4	0.4	0.4	0.4	0.4
18	18	18	18	18	Mining & Quarrying	0.2	0.2	0.2	0.2	0.2
					GDP at Constant Basic (2015) Prices	95.0	94.7	94.8	94.4	94.6
					Add: Taxes Less Subsidies on Products	5.0	5.3	5.2	5.6	5.4
					GDP at Constant Purchasers' (2015) Prices	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Financial & insurance services maintained its dominance as the largest single contributor to real GDP of the Cayman Islands, despite a decline in its contribution, accounting for 31.3 percent in 2017, down from the 31.5 percent share in 2016. This represents the fifth consecutive year of decline as other industries posted higher growth rates. The decline of 0.2 percentage points in 2017 represents a smaller contraction compared to the decline of 0.7 percentage points in 2016.

The professional, scientific & technical activities industry increased its share to the highest in five years, moving to 13.2 percent in 2017 from the 13.0 percent recorded in 2016. This 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 & insurance services.

Other significant contributions to real GDP in 2017 came from real estate activities (8.7%), marginally lower than the 8.8 percent in 2016, wholesale & retail trade (6.2%), public administration & defence (5.1%), and hotel & restaurant activities (5.1%).

Despite robust growth in construction activities, the industry was not able to increase its share of GDP. Construction activities maintained its seventh place, holding firm at 3.7 percent in 2017 which was unchanged from 2016.

5.5 Industry GDP at current prices

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN					
TABLE 13: GDP AT CURRENT BASIC & PURCHASERS' PRICES (CI$'000)					
INDUSTRY	**2013**	**2014**	**2015**	**2016**	**2017**
01 Agriculture & Fishing	12,518.8	13,611.5	14,857.9	16,192.6	17,022.1
02 Mining & Quarrying	8,167.0	7,891.2	8,603.3	9,842.7	10,039.6
03 Manufacturing	29,146.5	31,424.7	32,607.7	35,017.5	36,560.4
04 Electricity, Gas & Air Conditioning Supply	53,928.6	52,184.2	57,045.2	63,836.6	63,320.8
05 Water Supply, Sewerage & Waste Management	37,058.1	38,846.1	34,491.5	36,899.1	38,992.6
06 Construction	125,911.4	131,871.6	142,131.2	152,297.8	161,128.5
07 Wholesale & Retail Trade	222,093.8	231,496.1	239,373.8	246,489.7	257,724.9
08 Transport & Storage	121,134.1	130,326.5	137,801.5	143,456.0	148,112.5
09 Hotels & Restaurants	172,829.8	188,836.4	202,259.0	212,519.8	225,415.4
10 Information & Communication	100,645.9	103,922.1	109,299.2	112,369.3	115,023.4
11 Financial & Insurance Services	1,204,235.1	1,235,430.2	1,263,887.5	1,277,990.7	1,350,837.4
12 Real Estate Activities	341,379.0	344,187.8	342,423.2	354,348.2	363,730.8
13 Professional, Scientific & Technical Activities	464,881.3	488,315.9	507,280.3	534,791.4	569,322.0
14 Administrative & Support Service Activities	90,713.7	94,982.6	98,405.3	103,373.5	109,588.3
15 Public Administration & Defense	185,239.6	188,435.8	202,395.6	212,707.3	226,645.1
16 Education Services	83,243.6	84,708.0	88,758.0	94,129.2	95,667.8
17 Human Health & Social Work	116,927.5	123,474.4	130,533.6	140,268.9	147,525.9
18 Other Services	98,138.3	105,936.0	108,150.5	112,315.2	118,989.8
GDP at Current Basic Prices	**3,468,192.2**	**3,595,881.2**	**3,720,304.5**	**3,858,845.6**	**4,055,647.3**
Add: Taxes Less Subsidies on Products	203,289.8	206,481.6	203,152.6	223,415.0	229,042.9
GDP at Current Purchasers' Prices	**3,671,482.0**	**3,802,362.8**	**3,923,457.0**	**4,082,260.6**	**4,284,690.2**

5.6 Detailed value added by industry

TABLE 14a: DETAILED GDP BY INDUSTRY (CURRENT)	CURRENT/NOMINAL (CI$'000)											
INDUSTRY	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
AGRICULTURE & FISHING	**8,187.1**	**9,304.4**	**10,026.2**	**11,212.1**	**10,837.2**	**11,477.6**	**11,822.9**	**12,518.8**	**13,611.5**	**14,857.9**	**16,192.6**	**17,022.1**
Growing of Agricultural Crops	6,812.6	7,755.1	8,295.3	9,426.7	9,030.9	9,584.3	9,849.8	10,702.3	11,760.7	12,249.8	13,499.9	14,103.7
Farming of Animals	618.8	718.9	828.4	804.7	775.7	860.3	809.3	821.7	794.9	1,080.1	1,066.5	1,287.0
Capture Fishing	755.8	830.4	902.5	980.7	1,030.6	1,033.1	1,163.8	994.8	1,055.9	1,528.0	1,626.2	1,631.4
MINING & QUARRYING	**13,560.2**	**13,194.0**	**9,765.5**	**9,788.2**	**8,890.7**	**8,084.7**	**8,157.2**	**8,167.0**	**7,891.2**	**8,603.3**	**9,842.7**	**10,039.6**
Quarrying incl. Stone, Sand and Gravel	13,560.2	13,194.0	9,765.5	9,788.2	8,890.7	8,084.7	8,157.2	8,167.0	7,891.2	8,603.3	9,842.7	10,039.6
MANUFACTURING	**28,339.7**	**30,645.9**	**31,627.6**	**29,311.7**	**26,217.7**	**26,324.9**	**27,975.5**	**29,146.5**	**31,424.7**	**32,607.7**	**35,017.5**	**36,560.4**
Food Products, Beverages and Tobacco Products	5,890.1	6,128.7	6,521.6	6,102.7	6,379.9	7,132.8	7,607.4	7,818.9	8,203.3	8,489.2	9,187.7	9,782.7
Builders' Carpentry and Joinery, incl. Furniture and Rubber and Plastic Product	3,130.3	3,480.7	3,604.6	3,530.2	3,185.9	2,428.8	2,653.9	3,189.0	3,126.0	3,067.1	3,153.4	3,348.6
Non-Metallic Mineral Products (incl. Glass and Glass Products, Concrete, Cement)	10,145.9	10,481.8	9,696.4	8,882.3	6,392.3	6,464.5	7,091.4	7,475.6	9,414.0	10,781.5	11,631.2	11,898.2
Basic Metals, Fabricated Metal Products, Machinery & Equipment	2,165.7	2,329.7	5,140.2	4,640.4	3,801.9	3,535.6	3,690.0	3,665.0	3,792.0	3,850.0	4,211.0	4,463.2
Other Manufacturing Goods n.e.c.	7,007.9	8,225.0	6,664.8	6,156.1	6,457.7	6,763.3	6,932.8	6,998.0	6,889.6	6,420.0	6,834.1	7,067.7
ELECTRICITY, GAS & AIR CONDITIONING SUPPLY	**45,835.4**	**53,305.3**	**41,485.7**	**48,019.0**	**50,240.1**	**49,555.2**	**49,835.5**	**53,928.6**	**52,184.2**	**57,045.2**	**63,836.6**	**63,320.8**
Production, Collection and Distribution of Electricity and the Manufacture of Ice	45,835.4	53,305.3	41,485.7	48,019.0	50,240.1	49,555.2	49,835.5	53,928.6	52,184.2	57,045.2	63,836.6	63,320.8
WATER SUPPLY, SEWERAGE & WASTE MANAGEMENT	**33,738.7**	**35,635.0**	**35,151.9**	**36,444.7**	**38,135.0**	**36,073.1**	**38,608.8**	**37,058.1**	**38,846.1**	**34,491.5**	**36,899.1**	**38,992.6**
Water Collection, Treatment and Distribution, Sewerage and Waste Collection	33,738.7	35,635.0	35,151.9	36,444.7	38,135.0	36,073.1	38,608.8	37,058.1	38,846.1	34,491.5	36,899.1	38,992.6
CONSTRUCTION	**223,513.0**	**226,368.0**	**229,097.2**	**158,395.5**	**121,214.2**	**117,636.8**	**120,651.1**	**125,911.4**	**131,871.6**	**142,131.2**	**152,297.8**	**161,128.5**
Construction (incl building installation, building completion, etc.)	223,513.0	226,368.0	229,097.2	158,395.5	121,214.2	117,636.8	120,651.1	125,911.4	131,871.6	142,131.2	152,297.8	161,128.5
WHOLESALE & RETAIL TRADE	**224,986.0**	**227,423.6**	**251,990.5**	**218,216.4**	**201,274.7**	**209,539.2**	**216,566.5**	**222,093.8**	**231,496.1**	**239,373.8**	**246,489.7**	**257,724.9**
Wholesale & Retail Trade	224,986.0	227,423.6	251,990.5	218,216.4	201,274.7	209,539.2	216,566.5	222,093.8	231,496.1	239,373.8	246,489.7	257,724.9
TRANSPORT & STORAGE	**127,374.2**	**109,793.9**	**114,096.7**	**107,221.8**	**107,386.3**	**110,011.9**	**115,193.7**	**121,134.1**	**130,326.5**	**137,801.5**	**143,456.0**	**148,112.5**
Transport	50,400.2	51,954.2	54,384.2	48,856.1	50,348.8	50,830.2	52,542.4	55,626.7	60,023.8	63,068.3	66,920.5	68,924.3
Supporting Activities for Transport (incl Cargo)	68,232.9	49,140.8	51,194.5	49,985.3	49,460.8	51,301.0	54,518.4	57,290.6	62,502.1	67,051.9	68,440.4	70,808.5
Post and Courier Activities	8,741.2	8,698.9	8,518.0	8,380.4	7,576.7	7,880.7	8,132.8	8,216.8	7,800.5	7,681.3	8,095.1	8,379.7
HOTELS & RESTAURANTS	**128,445.9**	**138,137.4**	**145,881.9**	**134,973.1**	**142,837.8**	**151,318.8**	**158,929.8**	**172,829.8**	**188,836.4**	**202,259.0**	**212,519.8**	**225,415.4**
Hotels & Other Short-Term Accommodations Activities	77,471.1	85,026.2	98,245.4	88,216.1	91,467.7	98,115.3	104,362.9	117,426.3	131,029.1	142,266.3	150,804.1	159,041.6
Restaurants, Bars & Other Food Service Activities	50,974.8	53,111.2	47,636.5	46,757.0	51,370.2	53,203.5	54,566.9	55,403.5	57,807.4	59,992.8	61,715.7	66,373.8
INFORMATION & COMMUNICATION	**102,643.7**	**111,735.1**	**109,673.2**	**108,176.6**	**100,921.5**	**101,179.9**	**101,922.9**	**100,645.9**	**103,922.1**	**109,299.2**	**112,369.3**	**115,023.4**
Motion Picture Projection, Radio & TV Programming and Broadcasting and Telecommunications Activities	85,256.9	92,676.1	89,530.5	86,763.4	76,929.7	76,410.4	76,148.4	75,188.9	77,337.5	81,400.8	83,055.2	84,330.9
Publishing, Printing and Computer & Data Processing Services	17,386.8	19,059.0	20,142.7	21,413.2	23,991.8	24,769.4	25,774.5	25,457.0	26,584.6	27,898.4	29,314.1	30,692.5

TABLE 14a cont'd: DETAILED GDP BY INDUSTRY (CURRENT)	CURRENT/NOMINAL (CI$'000)											
INDUSTRY	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
FINANCIAL & INSURANCE SERVICES	**1,227,068.3**	**1,330,351.4**	**1,346,095.0**	**1,240,429.8**	**1,193,162.3**	**1,169,518.1**	**1,179,603.7**	**1,204,235.1**	**1,235,430.2**	**1,263,887.5**	**1,277,990.7**	**1,350,837.4**
Monetary Institutions (incl. CIMA)	690,282.1	748,191.1	770,051.4	696,454.6	646,128.3	612,196.5	601,962.0	614,520.9	633,274.8	615,477.7	614,865.3	666,430.3
Other Financial Institutions & Financial Services	273,414.8	298,211.5	291,206.6	245,493.2	240,570.5	240,310.9	244,476.0	243,901.5	252,840.6	258,246.6	254,981.2	265,434.5
Insurance, Pension Funding (incl. Auxiliary Activities)	263,371.4	283,948.8	284,837.0	298,482.0	306,463.5	317,010.7	333,165.7	345,812.7	349,314.8	390,163.2	408,144.2	418,972.6
REAL ESTATE ACTIVITIES	**313,819.1**	**335,603.6**	**347,041.4**	**341,522.2**	**336,041.0**	**338,146.1**	**342,501.7**	**341,379.0**	**344,187.8**	**342,423.2**	**354,348.2**	**363,730.8**
Operating of Owner-Occupied Dwellings	185,634.3	188,545.6	187,991.6	187,020.0	181,339.4	183,427.2	184,565.8	187,983.0	184,897.7	172,610.0	174,707.2	176,931.6
Renting of Residential Buildings	67,461.8	78,194.3	82,878.0	80,601.5	80,034.1	77,625.2	79,246.8	76,828.5	79,585.2	83,631.6	89,587.4	90,607.8
Renting of Commercial Buildings	31,759.1	37,255.8	43,780.1	42,934.5	44,209.4	46,103.0	46,426.8	43,381.2	45,781.8	50,815.4	52,220.2	55,027.3
Other Real Estate Activities	28,964.0	31,607.9	32,391.8	30,966.3	30,458.2	30,990.7	32,262.2	33,186.4	33,923.1	35,366.2	37,833.4	41,164.2
PROFESSIONAL, SCIENTIFIC & TECHNICAL ACTIVITIES	**347,211.4**	**387,009.9**	**397,237.5**	**405,903.4**	**417,237.3**	**429,904.6**	**449,165.7**	**464,881.3**	**488,315.9**	**507,280.3**	**534,791.4**	**569,322.0**
Legal Activities	157,538.1	175,412.1	180,936.3	189,172.4	206,167.1	216,180.0	221,785.3	225,374.2	237,844.1	246,198.4	263,311.6	280,485.5
Accounting & Auditing Activities	108,969.0	125,607.2	126,196.9	128,700.9	124,628.5	126,455.6	132,347.0	140,892.1	147,670.2	152,528.3	158,683.7	169,522.2
Other Professional, Scientific & Technical Activities	80,704.3	85,990.6	90,104.3	88,030.1	86,441.7	87,269.0	95,033.3	98,615.1	102,801.6	108,553.6	112,796.2	119,314.3
ADMINISTRATIVE & SUPPORT SERVICE ACTIVITIES	**77,573.3**	**85,240.5**	**86,987.7**	**84,920.4**	**84,590.3**	**84,963.4**	**89,040.1**	**90,713.7**	**94,982.6**	**98,405.3**	**103,373.5**	**109,588.3**
Administrative and Support Service to Businesses (incl. Renting of Machinery & Equipment)	77,573.3	85,240.5	86,987.7	84,920.4	84,590.3	84,963.4	89,040.1	90,713.7	94,982.6	98,405.3	103,373.5	109,588.3
PUBLIC ADMINISTRATION & DEFENSE	**162,502.7**	**173,524.2**	**191,297.3**	**195,466.9**	**185,164.7**	**179,791.5**	**182,737.9**	**185,239.6**	**188,435.8**	**202,395.6**	**212,707.3**	**226,645.1**
Public Administration and Defense	162,502.7	173,524.2	191,297.3	195,466.9	185,164.7	179,791.5	182,737.9	185,239.6	188,435.8	202,395.6	212,707.3	226,645.1
EDUCATION SERVICES	**65,136.5**	**68,987.8**	**76,325.1**	**79,682.2**	**78,967.3**	**78,191.0**	**79,351.8**	**83,243.6**	**84,708.0**	**88,758.0**	**94,129.2**	**95,667.8**
Public Education	36,903.6	38,754.6	42,956.1	45,479.8	45,088.4	43,911.9	43,333.0	43,585.0	43,946.3	45,776.1	47,544.4	48,561.1
Private Education	28,232.8	30,233.2	33,369.0	34,202.4	33,878.9	34,279.2	36,018.8	39,658.6	40,761.7	42,981.9	46,584.8	47,106.7
HUMAN HEALTH & SOCIAL WORK	**84,039.0**	**88,103.1**	**93,706.5**	**96,219.0**	**98,051.7**	**102,290.5**	**109,077.1**	**116,927.5**	**123,474.4**	**130,533.6**	**140,268.9**	**147,525.9**
Public Health and Social Services	46,228.5	48,243.7	50,602.3	50,296.8	51,587.7	54,833.5	57,992.7	60,908.6	63,222.9	68,236.0	70,104.9	72,156.6
Private Health & Social Services	37,810.5	39,859.4	43,104.1	45,922.2	46,464.1	47,457.0	51,084.4	56,018.9	60,251.5	62,297.7	70,164.0	75,369.4
OTHER SERVICES	**85,414.8**	**86,651.5**	**88,434.7**	**87,939.6**	**89,192.7**	**90,967.0**	**93,677.8**	**98,138.3**	**105,936.0**	**108,150.5**	**112,315.2**	**118,989.8**
Private Arts, Entertainment & Recreation	31,545.9	31,909.8	33,102.3	32,379.2	33,155.5	34,484.2	35,272.4	36,894.1	39,368.7	40,065.7	41,060.4	42,540.4
Personal & Household Services (incl. Activities of Membership Organization)	31,635.9	34,122.1	34,128.0	33,216.9	34,053.8	34,247.2	34,806.6	35,828.3	37,276.6	38,248.9	40,149.1	42,010.3
Private Households with Employed Persons	22,233.0	20,619.6	21,204.4	22,343.5	21,983.5	22,235.6	23,598.9	25,415.9	29,290.7	29,835.9	31,105.7	34,439.1
VALUE ADDED/GDP AT BASIC PRICES	**3,299,389.1**	**3,511,014.5**	**3,605,921.4**	**3,393,842.5**	**3,290,362.5**	**3,294,974.3**	**3,374,819.6**	**3,468,192.2**	**3,595,881.2**	**3,720,304.5**	**3,858,845.6**	**4,055,647.3**
TAXES LESS SUBSIDIES ON PRODUCTS	223,635.1	210,922.9	215,736.2	174,192.3	173,612.0	193,406.0	201,003.2	203,289.8	206,481.6	203,152.6	223,415.0	229,042.9
GROSS DOMESTIC PRODUCTS AT PURCHASERS' PRICES	**3,523,024.1**	**3,721,937.4**	**3,821,657.6**	**3,568,034.8**	**3,463,974.5**	**3,488,380.3**	**3,575,822.8**	**3,671,482.0**	**3,802,362.8**	**3,923,457.0**	**4,082,260.6**	**4,284,690.2**

TABLE 14b: DETAILED GDP BY INDUSTRY (CONSTANT)	CONSTANT/REAL (CI$'000)[1]											
INDUSTRY	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
AGRICULTURE & FISHING	**10,319.8**	**11,004.5**	**11,607.7**	**12,793.9**	**12,606.2**	**13,064.3**	**13,205.0**	**13,433.8**	**14,538.0**	**14,857.9**	**15,279.7**	**15,647.1**
Growing of Agricultural Crops	8,044.2	8,879.1	9,123.4	10,481.9	10,045.0	10,521.6	10,667.8	11,277.8	12,082.9	12,249.8	12,760.0	13,146.5
Farming of Animals	938.9	1,043.9	1,102.3	1,057.0	975.3	1,031.3	959.8	986.6	889.2	1,080.1	1,061.3	1,122.8
Capture Fishing	1,062.8	1,036.6	1,126.5	1,224.3	1,286.5	1,289.6	1,341.8	1,266.0	1,480.2	1,528.0	1,458.4	1,377.8
MINING & QUARRYING	**13,298.1**	**12,997.9**	**9,385.1**	**8,930.4**	**8,026.1**	**7,834.2**	**8,480.4**	**8,452.7**	**7,914.4**	**8,603.3**	**9,136.1**	**9,229.4**
Quarrying incl. Stone, Sand and Gravel	13,298.1	12,997.9	9,385.1	8,930.4	8,026.1	7,834.2	8,480.4	8,452.7	7,914.4	8,603.3	9,136.1	9,229.4
MANUFACTURING	**30,436.6**	**32,022.5**	**35,377.4**	**32,506.2**	**29,584.1**	**29,371.0**	**30,532.2**	**31,301.8**	**31,953.1**	**32,607.7**	**35,465.7**	**36,634.8**
Food Products, Beverages and Tobacco Products	8,228.2	8,120.8	8,617.9	8,273.3	7,656.2	7,927.3	8,209.3	8,283.6	8,448.6	8,489.2	9,049.1	9,275.9
Builders' Carpentry and Joinery, incl. Furniture and Rubber and Plastic Product	3,262.5	3,557.0	3,543.5	3,552.7	3,212.2	2,423.8	2,643.5	3,042.0	3,242.5	3,067.1	3,166.4	3,187.8
Non-Metallic Mineral Products (incl. Glass and Glass Products, Concrete, Cement)	11,190.8	12,142.2	9,922.3	9,239.5	6,795.3	6,660.9	7,268.1	7,662.2	9,282.1	10,781.5	12,127.7	12,615.8
Basic Metals, Fabricated Metal Products, Machinery & Equipment	2,396.7	2,514.5	5,529.6	4,548.7	3,778.3	3,537.0	3,583.5	3,637.3	3,703.5	3,850.0	4,090.5	4,382.7
Other Manufacturing Goods n.e.c.	6,192.2	7,010.3	6,651.7	6,034.7	6,376.2	6,835.1	6,891.4	6,895.1	6,443.9	6,420.0	7,031.9	7,172.6
ELECTRICITY, GAS & AIR CONDITIONING SUPPLY	**48,179.9**	**52,215.5**	**53,729.9**	**54,604.4**	**54,200.3**	**54,392.9**	**53,796.6**	**54,535.5**	**55,360.7**	**57,045.2**	**59,285.0**	**60,564.1**
Production, Collection and Distribution of Electricity and the Manufacture of Ice	48,179.9	52,215.5	53,729.9	54,604.4	54,200.3	54,392.9	53,796.6	54,535.5	55,360.7	57,045.2	59,285.0	60,564.1
WATER SUPPLY, SEWERAGE & WASTE MANAGEMENT	**36,538.9**	**38,176.7**	**38,307.9**	**40,657.5**	**39,092.5**	**38,216.0**	**38,671.1**	**38,224.6**	**39,549.3**	**34,491.5**	**36,659.7**	**38,688.5**
Water Collection, Treatment and Distribution, Sewerage and Waste Collection	36,538.9	38,176.7	38,307.9	40,657.5	39,092.5	38,216.0	38,671.1	38,224.6	39,549.3	34,491.5	36,659.7	38,688.5
CONSTRUCTION	**244,902.1**	**230,178.3**	**234,313.1**	**165,698.6**	**127,572.7**	**123,873.6**	**125,517.2**	**128,794.2**	**132,136.9**	**142,131.2**	**148,594.9**	**154,758.7**
Construction (incl building installation, building completion, etc.)	244,902.1	230,178.3	234,313.1	165,698.6	127,572.7	123,873.6	125,517.2	128,794.2	132,136.9	142,131.2	148,594.9	154,758.7
WHOLESALE & RETAIL TRADE	**271,370.8**	**261,503.2**	**270,508.4**	**239,434.7**	**219,533.3**	**223,712.5**	**226,698.6**	**230,091.2**	**235,059.4**	**239,373.8**	**250,216.4**	**258,092.0**
Wholesale & Retail Trade	271,370.8	261,503.2	270,508.4	239,434.7	219,533.3	223,712.5	226,698.6	230,091.2	235,059.4	239,373.8	250,216.4	258,092.0
TRANSPORT & STORAGE	**135,987.2**	**136,936.0**	**136,696.7**	**126,546.6**	**124,747.1**	**126,168.3**	**128,402.4**	**131,358.3**	**135,664.6**	**137,801.5**	**140,940.8**	**144,320.6**
Transport	55,298.7	57,373.2	59,442.6	53,859.7	56,052.5	56,434.7	57,593.9	59,502.5	61,471.0	63,068.3	64,314.0	65,589.1
Supporting Activities for Transport (incl Cargo)	69,530.5	69,179.6	67,598.7	63,429.4	60,498.4	61,423.3	62,398.6	63,527.7	66,283.8	67,051.9	68,672.2	70,706.6
Post and Courier Activities	10,897.4	10,185.6	9,572.6	9,114.1	8,214.0	8,309.7	8,418.1	8,360.5	7,888.8	7,681.3	7,954.7	8,024.9
HOTELS & RESTAURANTS	**166,995.7**	**179,560.8**	**180,803.4**	**162,563.5**	**173,281.1**	**183,374.4**	**189,223.7**	**192,991.6**	**200,648.2**	**202,259.0**	**204,369.1**	**213,070.2**
Hotels & Other Short-Term Accommodations Activities	109,993.0	119,971.8	124,653.8	111,925.0	118,642.1	127,210.4	132,580.6	136,001.9	141,223.9	142,266.3	143,747.9	149,498.2
Restaurants, Bars & Other Food Service Activities	57,230.5	59,782.0	56,226.5	50,712.3	54,737.9	56,218.1	56,658.8	56,981.9	59,421.4	59,992.8	60,621.2	63,572.1
INFORMATION & COMMUNICATION	**102,448.5**	**106,042.6**	**107,227.6**	**110,815.8**	**106,081.0**	**106,007.5**	**107,685.3**	**106,887.4**	**106,351.6**	**109,299.2**	**112,218.6**	**113,741.0**
Motion Picture Projection, Radio & TV Programming and Broadcasting and Telecommunications Activities	82,779.8	84,895.1	85,611.9	88,296.0	81,912.6	81,356.1	82,020.7	81,277.4	79,495.1	81,400.8	82,446.2	83,083.4
Publishing, Printing and Computer & Data Processing Services	18,882.9	20,429.7	20,918.1	21,820.8	23,815.9	24,359.6	25,443.8	25,407.2	26,821.4	27,898.4	29,772.5	30,657.7

Notes:

[1] Real GDP data up to the new base year (i.e.2006-2014) is non-additive due to the process by which the rebased (2015) series was linked to the old (2007 base) series. The pre base year series was derived by extrapolating the 2015 GDP backward at the most detailed compilation level using the growth rates of GDP from the old series. The advantage of this approach is to preserve the growth rates from the old series thereby ensuring there is no revision of the historical growth rates. The non-additivity of GDP and its components is the disadvantage of this approach but is less significant than having to revise the historical growth rates every time the GDP is rebased.

TABLE 14b cont'd: DETAILED GDP BY INDUSTRY (CONSTANT)	CONSTANT/REAL (CI$'000)[1]											
INDUSTRY	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
FINANCIAL & INSURANCE SERVICES	**1,397,330.9**	**1,487,523.0**	**1,438,707.7**	**1,235,994.5**	**1,193,587.5**	**1,200,596.9**	**1,218,562.0**	**1,223,403.1**	**1,235,187.4**	**1,263,887.5**	**1,273,376.3**	**1,304,554.7**
Monetary Institutions (incl. CIMA)	749,775.4	801,498.8	766,978.2	618,465.4	589,608.2	591,206.5	597,388.0	601,380.3	604,873.5	615,477.7	614,865.7	621,104.6
Other Financial Institutions & Financial Services	263,258.3	277,775.0	269,803.6	252,002.7	244,328.5	246,720.3	249,463.0	249,510.5	253,761.7	258,246.6	257,867.4	265,741.9
Insurance, Pension Funding (incl. Auxiliary Activities)	385,167.1	408,858.4	407,845.8	383,495.6	382,041.5	385,989.8	396,542.3	398,600.1	402,984.2	390,163.2	400,643.2	417,708.2
REAL ESTATE ACTIVITIES	**316,680.6**	**340,763.6**	**341,574.2**	**335,695.2**	**329,587.6**	**327,671.4**	**329,443.8**	**331,601.2**	**335,296.7**	**342,423.2**	**354,059.8**	**361,607.0**
Operating of Owner-Occupied Dwellings	171,251.9	173,857.7	169,065.5	171,403.3	165,041.4	165,747.0	167,742.4	171,410.9	173,222.3	172,610.0	178,127.4	181,090.0
Renting of Residential Buildings	71,262.6	82,399.5	85,066.6	83,988.5	83,144.3	80,224.2	80,411.4	80,016.5	80,862.1	83,631.6	85,695.2	86,289.1
Renting of Commercial Buildings	48,053.7	52,946.3	53,959.9	50,438.4	49,850.3	50,117.3	49,460.4	48,581.8	48,850.2	50,815.4	52,964.7	54,774.7
Other Real Estate Activities	29,440.0	31,149.4	30,948.5	30,322.4	30,774.6	31,086.9	32,123.2	33,290.3	34,172.3	35,366.2	37,272.6	39,453.2
PROFESSIONAL, SCIENTIFIC & TECHNICAL ACTIVITIES	**383,695.9**	**421,674.9**	**421,266.1**	**428,984.6**	**435,034.2**	**443,755.7**	**455,185.4**	**467,189.6**	**486,637.8**	**507,280.3**	**526,497.5**	**549,034.7**
Legal Activities	179,136.6	193,817.4	192,034.6	197,057.8	213,610.2	223,452.3	225,478.5	226,253.7	238,145.5	246,198.4	257,654.8	269,430.7
Accounting & Auditing Activities	116,063.6	131,371.6	130,105.1	133,249.6	129,125.0	130,550.6	134,885.3	141,438.8	144,593.3	152,528.3	157,687.9	164,086.6
Other Professional, Scientific & Technical Activities	86,296.0	93,324.1	95,397.6	95,399.8	92,984.7	92,143.4	96,150.6	99,398.5	104,420.9	108,553.6	111,154.8	115,517.5
ADMINISTRATIVE & SUPPORT SERVICE ACTIVITIES	**86,766.9**	**92,183.9**	**91,260.5**	**86,371.0**	**84,766.3**	**86,214.7**	**91,080.1**	**91,667.9**	**95,087.2**	**98,405.3**	**102,072.7**	**106,840.4**
Administrative and Support Service to Businesses (incl. Renting of Machinery & Equipment)	86,766.9	92,183.9	91,260.5	86,371.0	84,766.3	86,214.7	91,080.1	91,667.9	95,087.2	98,405.3	102,072.7	106,840.4
PUBLIC ADMINISTRATION & DEFENSE	**181,847.8**	**186,514.6**	**201,441.7**	**193,519.4**	**187,492.5**	**187,852.2**	**192,393.1**	**197,027.8**	**197,358.0**	**202,395.6**	**207,141.8**	**214,218.8**
Public Administration and Defense	181,847.8	186,514.6	201,441.7	193,519.4	187,492.5	187,852.2	192,393.1	197,027.8	197,358.0	202,395.6	207,141.8	214,218.8
EDUCATION SERVICES	**75,188.8**	**78,550.2**	**84,485.8**	**85,229.8**	**83,228.7**	**82,563.3**	**83,257.9**	**84,791.6**	**85,488.0**	**88,758.0**	**92,852.4**	**94,131.0**
Public Education	39,492.7	40,591.1	43,855.5	44,234.7	43,217.0	42,868.8	42,966.2	43,264.0	43,473.4	45,776.1	47,865.2	48,888.3
Private Education	35,142.0	37,897.3	40,411.2	40,779.4	39,784.9	39,471.5	40,271.1	41,889.2	42,492.2	42,981.9	44,987.2	45,242.7
HUMAN HEALTH & SOCIAL WORK	**102,279.8**	**104,371.9**	**111,732.9**	**111,779.7**	**112,495.5**	**114,393.2**	**115,565.7**	**120,337.0**	**125,198.6**	**130,533.6**	**139,650.1**	**148,586.5**
Public Health and Social Services	58,825.0	59,085.7	63,196.9	62,389.6	62,866.8	63,775.7	63,227.2	64,827.2	66,152.6	68,236.0	69,684.3	71,449.7
Private Health & Social Services	39,139.9	41,641.9	44,679.8	46,203.5	46,359.3	47,415.0	50,071.2	53,962.6	58,477.9	62,297.7	69,965.9	77,136.8
OTHER SERVICES	**101,487.2**	**102,140.0**	**95,437.9**	**96,171.3**	**96,045.2**	**96,746.4**	**99,815.8**	**100,965.2**	**105,889.9**	**108,150.5**	**111,988.4**	**118,201.1**
Private Arts, Entertainment & Recreation	39,191.5	40,205.2	34,659.8	34,859.0	34,486.8	34,765.2	36,658.4	37,277.0	39,149.8	40,065.7	41,199.8	42,076.4
Personal & Household Services (incl. Activities of Membership Organization)	35,608.7	37,216.6	36,048.3	34,396.4	35,022.5	35,148.4	35,141.3	35,656.0	37,109.7	38,248.9	39,682.9	41,685.6
Private Households with Employed Persons	26,839.3	24,891.6	24,587.8	26,833.9	26,401.5	26,704.3	27,993.1	28,022.7	29,635.3	29,835.9	31,105.7	34,439.1
VALUE ADDED/GDP AT BASIC PRICES	**3,579,305.2**	**3,733,398.7**	**3,724,117.2**	**3,489,561.7**	**3,396,368.8**	**3,437,110.9**	**3,480,223.7**	**3,531,751.0**	**3,611,830.7**	**3,720,304.5**	**3,819,804.9**	**3,941,920.7**
TAXES LESS SUBSIDIES ON PRODUCTS	266,263.6	241,598.8	237,449.1	193,167.8	186,651.1	187,994.6	189,623.0	186,382.4	202,391.2	203,152.6	225,133.4	225,957.3
GROSS DOMESTIC PRODUCTS AT PURCHASERS' PRICES	**3,861,222.6**	**3,983,338.6**	**3,969,102.1**	**3,683,307.6**	**3,583,282.4**	**3,625,173.2**	**3,669,753.9**	**3,716,702.2**	**3,815,363.1**	**3,923,457.0**	**4,044,938.3**	**4,167,878.1**

Notes:

[1] Real GDP data up to the new base year (i.e.2006-2014) is non-additive due to the process by which the rebased (2015) series was linked to the old (2007 base) series. The pre base year series was derived by extrapolating the 2015 GDP backward at the most detailed compilation level using the growth rates of GDP from the old series. The advantage of this approach is to preserve the growth rates from the old series thereby ensuring there is no revision of the historical growth rates. The non-additivity of GDP and its components is the disadvantage of this approach but is less significant than having to revise the historical growth rates every time the GDP is rebased.

5.7 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 15 below shows the IPI by industry for the Cayman Islands for the period 2012-2017. The IPI by industry provides information on the inflationary tendency at the industry level. The interpretation of the table is to show how prices have moved year over year or relative to the base year. The inflation rate using the GDP IPI is derived as the percentage change in the index from one period to the next. The IPI for the base year (in this case 2015) is equal to 100.

CAYMAN ISLANDS GROSS DOMESTIC (GDP) TABLES

TABLE 15: GDP IMPLICIT PRICE INDEX (IPI), 2015=100

INDUSTRY	2012	2013	2014	2015	2016	2017
01 Agriculture & Fishing	89.5	93.2	93.6	100.0	106.0	108.8
02 Mining & Quarrying	96.2	96.6	99.7	100.0	107.7	108.8
03 Manufacturing	91.6	93.1	98.3	100.0	98.7	99.8
04 Electricity, Gas & Air Conditioning Supply	92.6	98.9	94.3	100.0	107.7	104.6
05 Water Supply, Sewerage & Waste Management	99.8	96.9	98.2	100.0	100.7	100.8
06 Construction	96.1	97.8	99.8	100.0	102.5	104.1
07 Wholesale & Retail Trade	95.5	96.5	98.5	100.0	98.5	99.9
08 Transport & Storage	89.7	92.2	96.1	100.0	101.8	102.6
09 Hotels & Restaurants	84.0	89.6	94.1	100.0	104.0	105.8
10 Information & Communication	94.6	94.2	97.7	100.0	100.1	101.1
11 Financial & Insurance Services	96.8	98.4	100.0	100.0	100.4	103.5
12 Real Estate Activities	104.0	102.9	102.7	100.0	100.1	100.6
13 Professional, Scientific & Technical Activities	98.7	99.5	100.3	100.0	101.6	103.7
14 Administrative & Support Service Activities	97.8	99.0	99.9	100.0	101.3	102.6
15 Public Administration & Defense	95.0	94.0	95.5	100.0	102.7	105.8
16 Education Services	95.3	98.2	99.1	100.0	101.4	101.6
17 Human Health & Social Work	94.4	97.2	98.6	100.0	100.4	99.3
18 Other Services	93.9	97.2	100.0	100.0	100.3	100.7
GDP Implicit Deflator at Basic Prices	**97.0**	**98.2**	**99.6**	**100.0**	**101.0**	**102.9**
Add: Taxes Less Subsidies on Products	106.0	109.1	102.0	100.0	99.2	101.4
GDP Implicit Deflator at Purchasers' Prices	**97.4**	**98.8**	**99.7**	**100.0**	**100.9**	**102.8**
GDP IPI (Basic Prices) percentage change	**1.2%**	**1.3%**	**1.4%**	**0.4%**	**1.0%**	**1.8%**
GDP IPI (Purchasers' Prices) percentage change	**1.3%**	**1.4%**	**0.9%**	**0.3%**	**0.9%**	**1.9%**
CPI percentage change	**1.2%**	**2.1%**	**1.3%**	**-2.3%**	**-0.7%**	**2.0%**

5.8 Production and cost components of value added by industry

Table 16 below shows the production components (gross value added, gross output and intermediate consumption) and cost/income components (compensation of employees, consumption of fixed capital, operating surplus and other net taxes on production) by industry. Gross output is defined as the total value of goods and services produced by an establishment (basically sales). Gross output can be used by businesses to gauge their market share in a particular industry. Intermediate consumption refers to the goods and services that are used up in the production process, excluding fixed assets as its consumption is recorded as consumption of fixed capital. The gross value added is the excess of the gross output over the intermediate consumption. GDP via the production approach is the sum of the value added of all entities operating in the economy. GDP via the income approach is calculated as the sum of the compensation of employees, operating surplus/mixed income, consumption of fixed capital and taxes on production and imports less subsidies on production and imports.

CAYMAN ISLANDS GDP BY INDUSTRIAL ORIGIN

TABLE 16: PRODUCTION AND COST COMPONENTS OF VALUE ADDED AT CURRENT BASIC & PURCHASERS' PRICES 2017 (CI$'000)

INDUSTRY	Production Components			Cost/Income Components			
	Gross Value Added[1, 1a, 1b]	Gross Output	Intermediate Consumption	Compensation of Employees	Operating Surplus/Mixed Income	Consumption of Fixed Capital[2]	Taxes less Subsidies on Production
01 Agriculture & Fishing	17,022.1	24,159.4	7,137.3	7,489.3	8,458.4	686.6	387.9
02 Mining & Quarrying	10,039.6	20,707.2	10,667.5	6,877.3	1,106.0	1,630.2	426.1
03 Manufacturing	36,560.4	90,188.0	53,627.6	21,656.7	11,282.4	2,650.7	970.5
04 Electricity, Gas & Air Conditioning Supply	63,320.8	154,505.5	91,184.7	12,405.3	22,976.6	26,195.9	1,742.9
05 Water Supply, Sewerage & Waste Management	38,992.6	61,345.0	22,352.5	14,991.1	17,337.2	6,116.1	548.1
06 Construction	161,128.5	544,068.6	382,940.1	126,449.8	19,524.6	3,808.0	11,346.1
07 Wholesale & Retail Trade	257,724.9	389,962.9	132,238.0	126,314.9	93,524.1	23,790.9	14,095.0
08 Transport & Storage	148,112.5	263,573.5	115,460.9	92,399.0	41,814.4	11,655.3	2,243.8
09 Hotels & Restaurants	225,415.4	467,461.0	242,045.6	137,735.4	74,107.1	5,750.0	7,822.9
10 Information & Communication	115,023.4	195,822.1	80,798.7	51,122.6	30,680.9	19,981.6	13,238.3
11 Financial & Insurance Services	1,350,837.4	2,528,207.6	1,177,370.2	358,451.4	714,439.7	29,559.1	248,387.2
12 Real Estate Activities	363,730.8	627,211.9	263,481.1	51,813.6	257,392.9	52,908.8	1,615.6
13 Professional, Scientific & Technical Activities	569,322.0	761,887.6	192,565.6	402,283.4	91,492.2	10,383.6	65,162.8
14 Administrative & Support Service Activities	109,588.3	147,316.5	37,728.2	78,016.9	20,006.4	6,306.5	5,258.5
15 Public Administration & Defense	226,645.1	332,036.7	105,391.7	209,154.0	0.0	17,333.5	157.5
16 Education Services	95,667.8	133,798.8	38,130.9	88,162.3	729.9	6,336.0	439.6
17 Human Health & Social Work	147,525.9	220,312.9	72,787.0	118,837.6	17,770.1	7,886.2	3,032.0
18 Other Services	118,989.8	188,276.1	69,286.3	59,999.3	51,497.3	4,331.1	3,162.0
Total	4,055,647.3	7,150,841.2	3,095,193.9	1,964,160.0	1,474,140.2	237,310.2	380,036.9
GDP at Current Basic Prices/Total	**4,055,647.3**			**4,055,647.3**			
Add: Taxes Less Subsidies on Products	229,042.9						
GDP at Current Purchasers' Prices	**4,284,690.2**						

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

6. GROSS DOMESTIC PRODUCT ESTIMATES-THE INCOME APPROACH

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

The detailed confrontation of the various data sources (through the completion of the 2015 SUT and the rebasing process) resulted in changes in the level of the income components of GDP for the Cayman Islands. The changes in the level of the components stemmed from a combination of methodological changes and the incorporation of additional, more robust data. The main methodological change was the method of calculating FISIM and its allocation by industry. The allocation of FISIM by industries[29] resulted in an increase in reported operating surplus as the process allowed for the portion of FISIM exported (used by entities and individual abroad) to be separated and not deducted from the gross output of local entities. Previously, the entire FISIM was deducted at the economy level which included the portion exported which resulted in the level of operating surplus being lower than what it should have been. For these reasons, the entire series has been revised relative to data published in previous reports.

Gross Domestic Product (GDP) at current purchasers' prices for 2017 stood at CI$4,284.7 million. The components of GDP by type of income and their rates of growth are shown in Tables 17a and 17b below.

TABLE 17a: GROSS DOMESTIC PRODUCT (GDP) BY INCOME AT CURRENT PRICES (CI$'000)

Type of Income	2010	2011	2012	2013	2014	2015	2016	2017
Compensation of Employees (COE)	1,607,799.9	1,632,296.0	1,680,735.4	1,722,182.8	1,775,238.5	1,841,704.3	1,901,929.7	1,964,160.0
Operating Surplus\Mixed Income	1,256,049.3	1,224,689.1	1,253,700.6	1,227,565.1	1,262,372.0	1,322,772.1	1,376,757.7	1,474,140.2
Consumption of Fixed Capital	208,862.7	207,338.6	210,266.8	213,070.9	224,443.5	223,939.2	228,582.6	237,310.2
Taxes less Subsidies on Production and Imports	391,262.6	424,056.7	431,120.1	508,663.2	540,308.8	535,041.5	574,990.7	609,079.8
Gross Domestic Product at Purchasers' Prices	**3,463,974.5**	**3,488,380.3**	**3,575,822.8**	**3,671,482.0**	**3,802,362.8**	**3,923,457.0**	**4,082,260.6**	**4,284,690.2**

TABLE 17b: PERCENTAGE GROWTH of GDP BY INCOME AT CURRENT PURCHASERS' PRICES

Type of Income	Percentage Growth						
	2011	2012	2013	2014	2015	2016	2017
Compensation of Employees (COE)	1.5	3.0	2.5	3.1	3.7	3.3	3.3
Operating Surplus\Mixed Income	(2.5)	2.4	(2.1)	2.8	4.8	4.1	7.1
Consumption of Fixed Capital	(0.7)	1.4	1.3	5.3	(0.2)	2.1	3.8
Taxes less Subsidies on Production and Imports	8.4	1.7	18.0	6.2	(1.0)	7.5	5.9
Gross Domestic Product at Purchasers' Prices	**0.7**	**2.5**	**2.7**	**3.6**	**3.2**	**4.0**	**5.0**

[29] Compliance with the 2008 SNA manual requires that FISIM must be allocated by industry and not just deducted at the total economy level as was allowed in previous manuals.

2017 saw another year of expansion in total GDP at current purchasers' prices growing by 5.0 percent, following a 4.0 percent growth in 2016 (see Table 17b above). All components increased in 2017 led by operating surplus/mixed income (7.1%), followed by taxes less subsidies (net taxes) on production and imports (5.9%), consumption of fixed capital (3.8%), and compensation of employees (3.3%).

Total compensation of employees (COE)[30] amounted to CI$1,964.2 million in 2017, increasing from CI$1,901.9 in 2016. The 3.3 percent growth in 2017 replicates the rate posted in 2016 and continues the upward trajectory since 2011. The growth in total compensation in 2017 reflects the 1.1 percent increase in the number of employed persons which moved to 40,856 from 40,411 in 2016.[31]

Operating surplus/mixed income[32] registered the most significant growth of all the components in 2017, growing by 7.1 percent. This outpaced the 4.1 percent growth posted in 2016. 2017 represents the fourth consecutive year of growth in operating surplus/mixed income going back to 2014. The growth indicates that businesses are continuing to capture the benefits of the current upswing in the economy.

Consumption of fixed capital[33] increased by 3.8 percent in 2017, continuing on the 2.1 percent posted in 2016. This reverses the 0.2 percent decline posted in 2015.

Taxes (less subsidies) on production and imports[34] in 2017 grew by 5.9 percent after growing by 7.5 percent in 2016. The growth in the net taxes component of GDP emanated from, among other things, an increase in the receipt from import duties.

[30] 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.
[31] Table 10.01b Compendium of Statistics (pg. 95)
[32] 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.
[33] 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.
[34] This includes import duties, hotel occupancy tax, business and professional licences, building permit fees, property tax, stamp duties, etc.

6.2 Contribution to GDP at purchasers' prices

TABLE 18: PERCENTAGE CONTRIBUTION to GDP BY INCOME AT CURRENT PRICES							
Type of Income	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Compensation of Employees (COE)	46.8	47.0	46.9	46.7	46.9	46.6	45.8
Operating Surplus\Mixed Income	35.1	35.1	33.4	33.2	33.7	33.7	34.4
Consumption of Fixed Capital	5.9	5.9	5.8	5.9	5.7	5.6	5.5
Taxes less Subsidies on Production and Imports	12.2	12.1	13.9	14.2	13.6	14.1	14.2
Gross Domestic Product at Purchasers' Prices	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

The share of COE declined to 45.8 percent of GDP in 2017 from 46.6 percent in 2016. The results in 2017 represent the second consecutive year that the share of COE in GDP has declined. The declining share stems from the expansion in GDP outpacing the growth in COE.

The second largest contribution (34.4%) came from operating surplus/mixed income with a total value of CI$1,474.1 million in 2017 (see Table 17a). This component posted the highest growth rate (7.1%) in 2017 and led to its increase in share from 33.7 percent in 2016.

The share of net taxes continued its marginal increase posting a share of 14.2 percent in 2017 when compared to 14.1 percent in 2016.

Consumption of fixed capital declined slightly to 5.5 percent in 2017 from 5.6 percent in 2016. This represents a third consecutive year of decline since the trend started in 2015.

6.3 Income components of GDP at purchasers' prices

6.3.1 Compensation of employees (COE)

Table 19 below shows the breakdown of total compensation by industry in the Cayman Islands for the period 2010-2017.

TABLE 19: COMPENSATION OF EMPLOYEES (CI$'000)								
INDUSTRY	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Agriculture & Fishing	5,551.8	5,876.0	5,538.2	5,895.8	6,373.4	6,877.7	7,297.1	7,489.3
Mining & Quarrying	6,274.8	5,872.3	5,951.6	5,902.9	5,660.8	6,030.6	6,327.1	6,877.3
Manufacturing	17,068.4	16,712.9	17,338.3	18,105.8	19,044.0	20,277.1	21,718.1	21,656.7
Electricity, Gas & Air Conditioning Supply	12,417.6	12,391.7	12,448.9	12,320.4	13,029.4	12,141.6	12,355.3	12,405.3
Water Supply, Sewerage & Waste Management	16,474.7	16,681.2	20,178.8	20,262.7	20,188.9	14,763.9	14,974.5	14,991.1
Construction	97,419.3	102,226.6	106,113.0	110,705.3	113,487.5	121,868.7	125,489.2	126,449.8
Wholesale & Retail Trade	112,658.9	112,889.6	112,470.4	107,385.6	112,556.5	118,789.2	124,110.8	126,314.9
Transport & Storage	76,172.6	76,382.1	78,921.6	79,583.9	81,952.4	86,370.6	92,159.4	92,399.0
Hotels & Restaurants	100,521.4	115,349.1	117,107.3	120,716.7	123,488.1	127,738.2	132,622.0	137,735.4
Information & Communication	47,491.5	49,125.6	49,941.7	47,307.0	48,078.9	49,037.7	49,430.5	51,122.6
Financial & Insurance Services	323,415.7	321,632.6	330,044.8	336,386.4	335,187.0	340,654.6	350,914.8	358,451.4
Real Estate Activities	44,839.5	43,706.2	44,021.2	44,410.8	46,302.4	47,894.4	49,508.1	51,813.6
Professional, Scientific & Technical Activities	307,878.2	314,372.3	330,803.0	348,746.3	366,608.3	378,599.9	383,544.0	402,283.4
Administrative & Support Service Activities	63,189.1	63,551.7	66,229.4	68,323.8	70,986.9	73,293.7	75,918.9	78,016.9
Public Administration & Defense	170,687.3	165,981.7	169,134.0	171,189.7	174,215.0	187,529.1	197,287.5	209,154.0
Education Services	73,294.7	72,121.0	72,514.6	75,523.5	77,369.3	81,671.9	85,615.2	88,162.3
Health and Social Work	83,168.9	86,545.3	91,634.0	97,170.4	106,006.1	111,927.5	114,767.5	118,837.6
Other Services	49,275.6	50,878.2	50,344.8	52,245.7	54,703.7	56,238.0	57,889.9	59,999.3
TOTAL	**1,607,799.9**	**1,632,296.0**	**1,680,735.4**	**1,722,182.8**	**1,775,238.5**	**1,841,704.3**	**1,901,929.7**	**1,964,160.0**

The distribution of total compensation in the Cayman Islands was dominated by the following three industries in 2017:

- Professional, scientific & technical activities (mainly legal and accounting services) with CI$402.3 million or 20.5 percent of total compensation;
- The financial & insurance services industry with CI$358.5 million in compensation or 18.2 percent of the total compensation; and
- Public administration & defense with CI$209.2 million or 10.7 percent of total compensation.

The three above-mentioned industries accounted for 49.4 percent of the total compensation generated in the Cayman Islands in 2017. This represents a slight increase from the 49.0 percent recorded in 2016.

6.3.2 Operating surplus/mixed income

TABLE 20: OPERATING SURPLUS AND MIXED INCOME (CI$'000)								
INDUSTRY	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Agriculture & Fishing	4,450.4	4,741.4	5,389.4	5,757.0	6,325.2	7,005.1	7,873.5	8,458.4
Mining & Quarrying	828.6	395.4	246.8	391.2	403.5	752.9	1,647.6	1,106.0
Manufacturing	5,999.0	6,413.2	7,362.7	7,742.8	9,027.4	8,886.7	9,980.8	11,282.4
Electricity, Gas & Air Conditioning Supply	18,944.4	17,176.3	15,234.8	17,829.0	16,686.3	20,892.2	24,583.8	22,976.6
Water Supply, Sewerage & Waste Management	14,320.0	12,952.5	11,621.6	10,235.7	12,177.0	14,079.1	15,726.7	17,337.2
Construction	13,865.6	6,063.7	5,155.8	5,461.5	7,734.2	8,600.5	14,592.4	19,524.6
Wholesale & Retail Trade	60,114.4	67,070.9	74,353.9	83,064.9	85,236.6	85,775.3	85,845.0	93,524.1
Transport & Storage	19,622.6	22,440.6	24,729.3	29,448.9	35,497.8	38,499.1	37,657.5	41,814.4
Hotels & Restaurants	30,540.2	25,321.3	30,336.1	41,188.2	53,806.5	62,072.3	66,960.2	74,107.1
Information & Communication	23,880.9	21,804.1	20,457.5	24,037.5	21,364.4	28,375.2	31,608.2	30,680.9
Financial & Insurance Services	698,019.3	668,195.2	674,244.7	630,846.6	643,146.8	672,031.4	664,757.6	714,439.7
Real Estate Activities	237,866.3	241,942.3	247,992.6	245,678.0	245,502.8	242,007.3	251,712.1	257,392.9
Professional, Scientific & Technical Activities	71,235.8	73,112.8	73,399.6	60,041.2	59,270.4	65,783.4	82,962.5	91,492.2
Administrative & Support Service Activities	13,502.8	13,627.3	15,384.9	13,969.7	14,524.5	14,854.4	16,670.8	20,006.4
Public Administration & Defense	-	-	-	-	-	-	-	-
Education Services	986.0	1,392.2	1,231.1	1,289.7	863.3	622.7	1,996.6	729.9
Health and Social Work	8,467.7	8,686.5	10,075.0	11,379.0	6,963.4	7,775.2	15,054.4	17,770.1
Other Services	33,405.5	33,353.5	36,484.9	39,204.1	43,842.1	44,759.2	47,127.7	51,497.3
TOTAL	**1,256,049.3**	**1,224,689.1**	**1,253,700.6**	**1,227,565.1**	**1,262,372.0**	**1,322,772.1**	**1,376,757.7**	**1,474,140.2**

Financial & insurance services accounts for the largest share of operating surplus/mixed income of CI$714.4 million in 2017. The second largest share was recorded by the real estate activities (CI$257.4 million), followed by wholesale & retail trade (CI$93.5 million), and professional, scientific & technical activities with CI$91.5 million.

The four largest contributors to operating surplus/mixed income in 2017 accounted for 78.5 percent of the total. This represents a decline compared to the 78.8 percent recorded in 2016.

6.3.3 Consumption of fixed capital

TABLE 21: CONSUMPTION OF FIXED CAPITAL (CI$'000)								
INDUSTRY	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Agriculture & Fishing	620.4	631.0	663.0	615.0	637.1	634.5	661.6	686.6
Mining & Quarrying	1,414.6	1,426.3	1,547.7	1,437.5	1,487.9	1,462.7	1,482.4	1,630.2
Manufacturing	2,260.1	2,320.0	2,351.0	2,337.6	2,332.5	2,496.7	2,405.6	2,650.7
Electricity, Gas & Air Conditioning Supply	17,589.1	18,017.9	19,957.7	21,336.4	20,759.3	22,220.8	25,029.7	26,195.9
Water Supply, Sewerage & Waste Management	6,956.8	6,024.4	6,149.0	5,892.6	5,881.9	5,071.2	5,573.8	6,116.1
Construction	3,495.7	3,169.5	3,254.5	2,943.0	3,018.2	3,417.4	3,551.3	3,808.0
Wholesale & Retail Trade	20,242.6	21,007.8	21,154.4	21,267.9	23,552.8	23,666.2	23,869.6	23,790.9
Transport & Storage	10,176.7	9,760.2	10,099.6	10,590.2	11,274.0	11,223.5	11,555.2	11,655.3
Hotels & Restaurants	5,634.4	5,374.0	5,395.5	5,459.3	5,837.8	5,619.1	5,554.9	5,750.0
Information & Communication	18,925.4	19,693.4	19,819.4	17,963.7	23,109.5	20,364.2	19,130.2	19,981.6
Financial & Insurance Services	26,671.8	25,815.5	26,964.0	27,299.4	26,800.2	27,286.6	28,409.8	29,559.1
Real Estate Activities	51,982.7	51,090.1	49,066.4	49,905.9	50,986.0	51,023.4	51,545.6	52,908.8
Professional, Scientific & Technical Activities	10,581.9	10,903.7	10,783.4	10,697.6	10,903.0	10,510.4	10,514.1	10,383.6
Administrative & Support Service Activities	4,925.7	4,940.2	4,645.1	4,892.5	5,387.5	5,905.6	6,109.5	6,306.5
Public Administration & Defense	14,326.4	13,662.0	13,455.0	13,898.3	14,063.5	14,667.0	15,286.2	17,333.5
Education Services	4,388.4	4,375.3	5,285.1	6,070.4	6,069.9	6,070.2	6,096.1	6,336.0
Health and Social Work	5,327.3	5,633.5	5,951.2	6,650.7	8,095.8	8,122.5	7,551.8	7,886.2
Other Services	3,342.8	3,494.0	3,725.0	3,812.8	4,246.6	4,177.4	4,255.4	4,331.1
TOTAL	**208,862.7**	**207,338.6**	**210,266.8**	**213,070.9**	**224,443.5**	**223,939.2**	**228,582.6**	**237,310.2**

As presented in Table 21 above, the largest amounts of consumption of fixed capital (i.e. depreciation) in 2017 occurred in real estate services (CI$52.9 million) due to the level of fixed assets involved in the activity. This is followed by financial & insurance services (CI$29.6 million), electricity, gas & air conditioning supply services (CI$26.2 million), wholesale and retail trade activities (CI$23.8 million), and information and communication services (CI$20.0 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.

6.3.4 Taxes less *subsidies on production and imports*

TABLE 22: TAXES less SUBSIDIES ON PRODUCTION AND IMPORTS (CI$'000)								
INDUSTRY	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Other Taxes less Subsidies on Production	217,650.6	230,650.6	230,116.9	305,373.4	333,827.2	331,888.9	351,575.7	380,036.9
Agriculture & Fishing	214.6	229.3	232.3	251.0	275.8	340.6	360.5	387.9
Mining & Quarrying	372.8	390.8	411.1	435.4	339.0	357.0	385.5	426.1
Manufacturing	890.1	878.8	923.5	960.3	1,020.9	947.2	913.0	970.5
Electricity, Gas & Air Conditioning Supply	1,289.0	1,969.2	2,194.2	2,442.9	1,709.1	1,790.7	1,867.9	1,742.9
Water Supply, Sewerage & Waste Managemer	383.6	414.9	659.4	667.2	598.5	577.3	624.1	548.1
Construction	6,433.7	6,176.9	6,127.8	6,801.6	7,631.7	8,244.7	8,664.9	11,346.1
Wholesale & Retail Trade	8,258.8	8,571.0	8,587.7	10,375.3	10,150.1	11,143.1	12,664.3	14,095.0
Transport & Storage	1,414.3	1,429.0	1,443.3	1,511.0	1,602.3	1,708.2	2,084.0	2,243.8
Hotels & Restaurants	6,141.9	5,274.5	6,090.9	5,465.7	5,704.1	6,829.5	7,382.7	7,822.9
Information & Communication	10,623.6	10,556.8	11,704.4	11,337.8	11,369.3	11,522.2	12,200.3	13,238.3
Financial & Insurance Services	145,055.5	153,874.9	148,350.4	209,702.6	230,296.2	223,914.9	233,908.5	248,387.2
Real Estate Activities	1,352.5	1,407.5	1,421.5	1,384.3	1,396.7	1,498.2	1,582.5	1,615.6
Professional, Scientific & Technical Activities	27,541.5	31,515.8	34,179.6	45,396.2	51,534.2	52,386.7	57,770.8	65,162.8
Administrative & Support Service Activities	2,972.7	2,844.2	2,780.6	3,527.7	4,083.7	4,351.6	4,674.3	5,258.5
Public Administration & Defense	151.0	147.9	149.1	151.6	157.4	199.4	133.6	157.5
Education Services	298.2	302.6	321.1	359.9	405.5	393.3	421.2	439.6
Health and Social Work	1,087.9	1,425.2	1,417.0	1,727.4	2,409.1	2,708.5	2,895.3	3,032.0
Other Services	3,169.0	3,241.3	3,123.1	2,875.6	3,143.6	2,976.0	3,042.3	3,162.0
Taxes less Subsidies on Products	173,612.0	193,406.0	201,003.2	203,289.8	206,481.6	203,152.6	223,415.0	229,042.9
TOTAL	**391,262.6**	**424,056.7**	**431,120.1**	**508,663.2**	**540,308.8**	**535,041.5**	**574,990.7**	**609,079.8**

Table 22 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 62.4 percent of the total in 2017, an increase from the 61.1 percent in 2016 as it grew by 8.1 percent to CI$380.0 million in 2017 from CI$351.6 million in 2016. This increase is due, in part to higher revenue generated from some financial service licences (e.g. other company fees-exempt, partnership fees, etc.) and work permit fees.

The industry breakdown of other taxes on production shows that financial and insurance services accounted for 65.4 percent of the total in 2017, a decline from the 66.5 percent in 2016. Despite the declining share since 2015, the activity remains the largest revenue base for the government.

7. GROSS DOMESTIC PRODUCT ESTIMATES-THE EXPENDITURE APPROACH

7.1 Introduction

GDP by expenditure (GDPE) measures GDP as the sum of the final purchases of goods and services. Added to final purchases is the value of exports as they represent goods and services produced domestically and sold to non-resident households and businesses. Imports are subtracted as they represent goods and services produced by other economies.

Basically, the expenditure approach is a method of measuring GDP by calculating all spending throughout the economy. A more detailed explanation shows GDPE as the sum of (a) household and government spending on goods and services; (b) investment in fixed capital (construction of building & other infrastructure, machinery and equipment); (c) changes in inventories; and (d) exports less imports of goods and services following the economic formula: **GDPE = C + G + I + (X-M)**, where C represents the consumption expenditure by households (HFCE), G is the consumption expenditure by government (GFCE), "I" represents gross capital formation plus changes in inventories (GCF), X is the value of exports, and M being the value of Imports. The individual components of GDPE are discussed in detail in the rest of this chapter.

The 2015 GDPE is the first of its kind in the Cayman Islands and represents the third approach to calculating GDP in the Cayman Islands, adding to the other two approaches, i.e. GDP by the production approach (GDPP) and GDP by the income approach (GDPI) as presented earlier in Chapters 5 and 6.

7.2 Components of GDP by expenditure

7.2.1 Household final consumption expenditure (HFCE)

HFCE consists of expenditures incurred by resident households on consumption of goods and services, whether that expenditure is incurred within the economic territory or abroad. Technically, this includes purchases of consumer goods and services, value of barter transactions, goods and services received in kind, and goods and services produced and consumed by the same household (e.g. a farmer consuming some of the agricultural products he produced or a dressmaker making a dress for herself). HFCE

excludes expenditure on fixed assets in the form of dwellings and on valuables as these are included in capital formation.[35]

For the Cayman Islands, HFCE was estimated using data from the 2015 Household Budget Survey (HBS) conducted by the ESO. The HBS was conducted over the 12-month period from January to December 2015. The data from this survey was classified according to the Classification of Individual Consumption According to Purpose (COICOP).

7.2.2 Government final consumption expenditure (GFCE)

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

7.2.3 Final consumption expenditure of NPISH

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

7.2.4 Gross fixed capital formation (GFCF)

GFCF is measured by the total value of the producers' acquisitions, less disposals of fixed assets. It includes investment in fixed capital by households, businesses and

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

government. GFCF relates to the addition to the available stock of fixed assets and not the change in ownership of the existing stock. For households, GFCF relates to any addition to the stock of residential buildings and major improvements to the existing stock. Business GFCF would include construction of commercial buildings, acquisition less disposal of machinery & equipment, and investment in intangible fixed assets (e.g. computer software, research & development, etc.). GFCF for government would include investment in assets such as roads, schools, hospitals, etc. The machinery & equipment portion of GFCF is compiled using imports of these types of goods as there is no domestic production. The building construction portion of GFCF is based (with some adjustments) on the estimates of new construction from the GDPP compilation of the value of construction activities.

7.2.5 Changes in inventories

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

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

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

7.3 GDPE estimates for 2015

The Cayman Islands' nominal GDPE for 2015 stood at CI$3,923.5 million.[36] Table 23 presents a detailed disaggregation of the components of GDPE. Based on the table, the largest expenditure component of the 2015 nominal GDPE for the Cayman Islands was

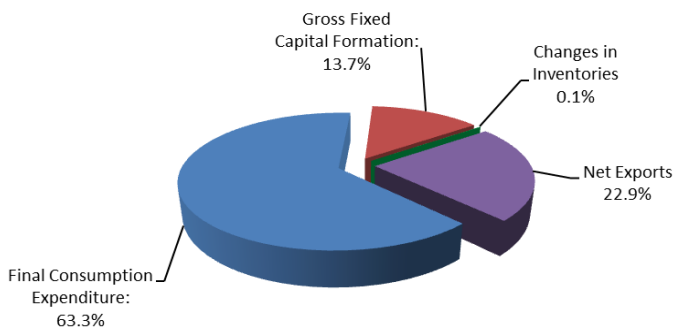
[36] GDPE is compiled in purchasers' prices only.

final consumption expenditure (CI$2,484.0 million). This was followed by net exports (CI$899.2 million), gross fixed capital formation (CI$538.1 million), and changes in inventories (CI$2.1 million).

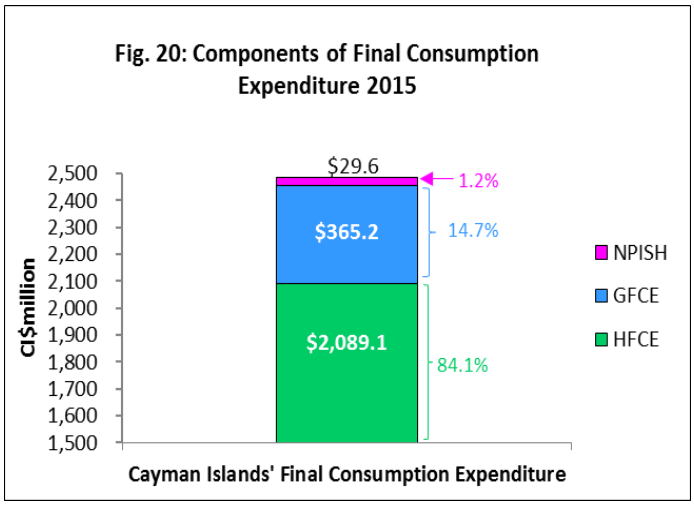
CAYMAN ISLANDS GROSS DOMESTIC PRODUCT	
TABLE 23: GDP BY EXPENDITURE AT CURRENT PRICES (CI$'000)	
Expenditure Component	**2015**
Final Consumption Expenditure:	**2,483,963.6**
Households	2,089,115.0
General Government	365,201.6
Non-Profit Institutions Serving Households	29,647.0
Gross Fixed Capital Formation:	**538,113.1**
Buildings and Infrastructure	286,395.4
Machinery and Equipment	123,243.7
Transport Equipment	26,712.3
Office and Computing Machinery	21,553.1
Other Capital Goods	80,208.7
Changes in Inventories	2,132.0
Net Exports	**899,248.2**
Exports of Goods and Services	2,522,673.9
Less Imports of Goods and Services	1,623,425.6
GDP by Expenditure	**3,923,457.0**

In terms of share, final consumption expenditure accounted for 63.3 percent of total GDP. This was followed by net exports (22.9%), gross fixed capital formation (13.7%), and change in inventories (0.1%). Figure 19 provides a graphical display of the share of the expenditure components of nominal GDP for 2015.

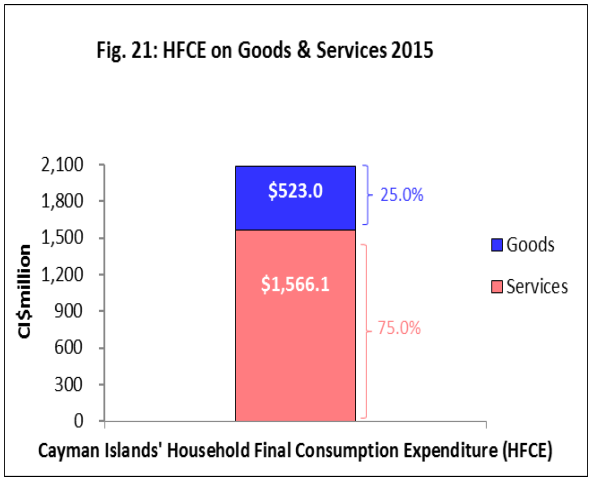
Fig. 19: Cayman Islands Expenditure Component of Current GDP, 2015



Final consumption expenditure is the aggregation of household final consumption expenditure, government final consumption expenditure, and the expenditure by non-profit institutions serving households (NPISH). Final consumption expenditure for 2015 stood at CI$2,484.0 million. The largest share of final consumption expenditure was posted by HFCE, which posted a value of CI$2,089.1 or 84.1 percent. This was followed by GFCE (CI$365.2 million or 14.7 percent) and final consumption expenditure of NPISH (CI$29.6 million or 1.2 percent).



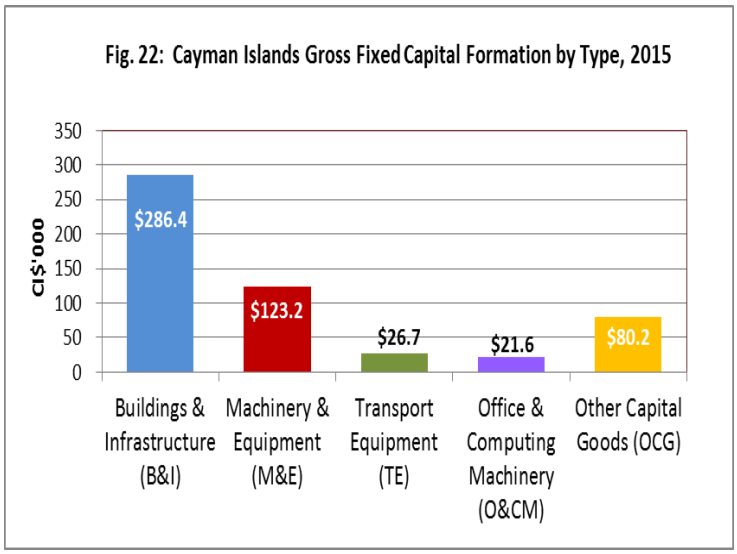
The compilation of HFCE was done via data collected through the 2015 Household Budget Survey. HFCE represents the expenditure incurred by resident households on consumption of goods and services, whether that expenditure is incurred within the economic territory or abroad. For 2015, Cayman residents purchased a total of CI$2,089.1 million in goods and services both in the Cayman Islands and overseas. Of this total, CI$523.0 million (25.0%) was spent on goods and CI$1,566.1 million (75.0%) on services. The household expenditure on goods for 2015 was dominated by food & beverage purchases. This was followed by purchases of motor vehicles & other transport equipment, clothing & shoes, gasoline & diesel, electronic & electrical equipment, etc. Expenditure on services was dominated by actual & imputed rent, financial & insurance services, medical services, hotel & restaurant services, and transport services. Further disaggregation of household expenditure was estimated as part of the detailed 2015 supply and use table compiled by the ESO.

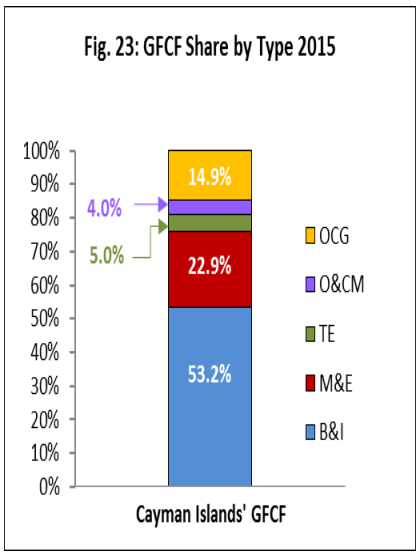


Gross fixed capital formation (GFCF) relates to the addition less disposal of fixed assets. Simply put, fixed assets are those used repeatedly or continuously in the production process over multiple accounting periods. GFCF is disaggregated into buildings & other structures, machinery & equipment, transport equipment, office & computing

machinery, and other capital goods. GFCF for the Cayman Islands stood at CI$538.1 million for 2015 (see Table 23.)

Figures 22 and 23 below show the breakdown of GFCF by type. Buildings & infrastructure was the largest component t of GFCF for 2015 with a value of $286.4 million or 53.2 percent of GFCF. Building & infrastructure refers to additions to the stock of residential buildings, commercial buildings and other structures. It also includes major improvements to the existing stock. It must be noted that the value of building & infrastructure in GFCF represents the addition (in the reporting period) to the existing stock and is not the actual value of the total stock of building & infrastructure as of the end of the period.





The value of the addition to the stock of machinery & equipment is compiled from data on imports and amounted to CI$123.2 million in 2015 or 22.9 percent of GFCF. This includes electrical equipment, industrial generators, agricultural machinery, construction equipment, tractors, cranes, air handlers, condenser units, etc.

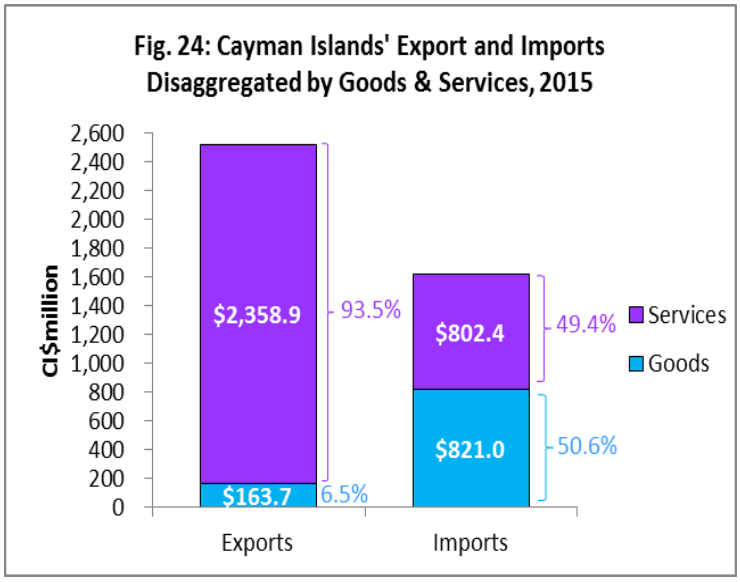
The value of transport equipment in GFCF represents expenditure by businesses on this type of asset. Purchases of this type of asset by households are excluded as those expenditures are captured in HFCE and therefore not part of GFCF. Transport equipment contributed CI$26.7 million or 5.2 percent to GFCF in 2015. Transport equipment would include motor vehicles, trucks, boats, etc.

Office & computing machinery accounted for 4.0 percent of GFCF in 2015 with a value of CI$21.6 million. Included in office & computing equipment are desktops, laptops, printers, computer servers, photo copiers, etc.

Other capital goods include the addition to the stock of farming animals, intellectual property products, research & development, computer software, computer databases, net acquisition of valuables, etc. The value of other capital goods amounted to CI$80.2 million in 2015 or 14.9 percent of GFCF.

The derivation of the value changes in inventories is based on estimates of stock changes reported by businesses in the annual business survey. Based on the information available, changes in inventories was estimated at CI$2.1 million for 2015.

Net exports of goods and services for 2015 was CI$899.2 million resulting from exports of CI$2,522.7 million and imports of CI$1,623.4 million. Net export is calculated as exports minus imports. A more detailed examination of exports and imports shows the difference in their composition as it relates to goods and services. Figure 24 shows the split of export and import into goods and services. Export is dominated by services due to the Cayman Islands being a service dominated economy in terms of GDP. Export of services for 2015 amounted to CI$2,358.9 million which is 93.5 percent of total exports. Goods accounted for 6.5 percent of exports or CI$163.7 million. The export of goods is dominated by the on-island purchases of visitors, i.e. tourist expenditure on goods. Goods export would also include the purchase of aviation fuel (for local suppliers) by foreign airlines.



Imports reflect a more equal split between goods and services when compared to export. The share of goods in total imports was CI$821.0 million in 2015 or 50.6 percent of the total. Imports of services was CI$802.4 million for the same period or 49.4 percent. The disparity between the share of goods in export relative to imports results in a negative value for net export of goods (i.e. export of goods being lower than the import of goods – a deficit). The net export of goods was –CI$657.3 million in 2015. The deficit in net exports of goods was eclipsed by the surplus in the net export of services (CI$1,556.5 million) resulting in a value for overall net export of CI$899.2 million.

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APPENDIX 1: KEY CONCEPTS AND DEFINITIONS

A1.1 Classifications in the National Accounts

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

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

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

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

(a) if the prices they charge for the goods and services they produce are economically significant;

(b) if they are operated and managed like a corporation; and

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

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

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

Gross Output – Intermediate Input = Value Added

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

Production Account of a Producer

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

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

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

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

specified percentage of the value of the goods or services. In the Cayman Islands, taxes on products are primarily taxes and duties on imports, stamp duty and other taxes on product excluding taxes and duties on imports (e.g. hotel occupancy tax).

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

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

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

The above three concepts are related as follows:

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

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

A1.3 Measuring Gross Domestic Product at Constant Prices

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

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

the volume of goods and services produced as the price effect is removed. In theory, correcting for inflation refers to the process of revaluing current production using the average prices prevailing in the base year as follows:

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

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

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

(Current quantities of goods and services produced multiplied by their prices in a year chosen as the base year)[37].

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.[38] 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

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

intermediate consumption vary significantly from one year to the other, they are less sensitive to errors in other industries and hence extensively used.[39] The single indicator method was the method of choice for the Cayman Islands and hence is discussed below in more details.

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

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

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

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

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

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

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

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

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

A1.4.1 Compensation of employees (COE)

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

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

A1.4.1a Gross wages and salaries

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

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

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

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

A1.4.1b Employers' social contribution

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

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

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

A1.4.2 Consumption of fixed capital

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

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

A1.4.3 Taxes on production and imports

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

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

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

A1.4.4 Subsidies on production and imports

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

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

A1.4.5 Operating surplus/mixed income

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

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

APPENDIX 2: IMPLEMENTATION OF THE CAYMAN ISLANDS' SNA

A2.1 Introduction

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

A2.2 Coverage of industries

As indicated in Appendix 1, all active business units were classified according to the International Standard Industrial Classification (ISIC) Revision 4, which is the industrial classification scheme recommended by the SNA 2008 manual.[40] In accordance with SNA 2008 and ISIC guidelines, business units were assigned codes based on their principal economic activity.[41] The ISIC Revision 4 was adapted to accommodate a more detailed dis-aggregation of economic activity. For the most part, estimation and analysis were done at the product group level (5-digit ISIC code). However, some estimation had to be done at the class level (4-digit code) due to data constraints.

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

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

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

A2.3 Data sources

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

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

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

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

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

A2.4 Revision policy

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

APPENDIX 3: 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