TECHNICAL ASSISTANCE REPORT

SAINT LUCIA

Report on National Accounts Mission Expenditure-Based Gross Domestic Product (September 2–13, 2024)

OCTOBER 2024

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Summary of Mission Outcomes and Priority Recommendations

1. In response to a request from the Central Statistics Office (CSO) in Saint Lucia, a technical assistance (TA) mission took place between September 2–13, 2024, to support the development of experimental estimates of expenditure-based GDP (GDP-E). The CSO desire to publish GDP-E as a complimentary product to production-based GDP (GDP-P).

2. The mission focused on the following aspects: providing a sources and methods assessment for each expenditure category; compiling experimental estimates of GDP-E; identifying likely data errors and suggesting strategies for fixing them; and recommending a path which would lead to publication of GDP-E.

3. The mission prepared a sources and methods assessment. The methods focus of both supply and demand-side indicators of household final consumption expenditure (HFCE) and gross fixed capital formation (GFCF), demand-side indicators for non-profit institutions serving households (NPISH) and valuables, and direct source data estimation for international trade in goods and services, and government final consumption expenditure (GFCE). A product flow approach for HFCE and GFCF, which considers domestic production, international trade, and estimates of intermediate consumption (IC) was developed. As well, recommendations on constant price methods were introduced for international trade.

4. Experimental GDP-E estimates were compiled from 2016 to 2023. The methods make use of international merchandise trade statistics (IMTS), balance of payments (BOP) statistics, the benchmark supply and use tables (SUT), published GDP-P series, and various CPI and producer price index (PPI) data. The accuracy of GDP-E largely depends on the quality of these components.

5. The preliminary results are mixed. In the years immediately following the benchmark year (2016), the outcomes are reasonable, with only minor statistical discrepancies between GDP-E and GDP-P. However, by 2018, these discrepancies increase and widen through the COVID-19 pandemic, both at current and constant 2018 prices. The mission identified several potential causes, including outliers in International Merchandise Trade Statistics (IMTS) data, volatility in domestic production, and unexpected changes in certain price indices.

6. Concurrent compilation of GDP-E could help identify issues in GDP-P. In the short term, the mission recommends continuing the compilation of experimental GDP-E as a tool to detect potential anomalies or errors in the source data. This approach should enhance the quality of GDP-P, price indices, and international trade statistics.

7. Plan for publication of GDP-E alongside the next GDP rebasing. The CSO is planning to conduct a Household Budget Survey (HBS) in 2025, which will support the compilation of SUT in 2026 and the rebasing of GDP. The product dimension of the SUT should be expanded to improve the estimation of HFCE and GFCF in both the benchmark year and subsequent GDP-E estimation. The existing methodology for GDP-E can be applied to the rebased series to identify and correct any source data errors, enabling the publication of GDP-E with next GDP rebasing.

8. To support progress in the above work areas, the mission proposed the following priority recommendations needed to improve estimates of GDP.

TABLE 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
April 2025	Continue compiling experimental GDP-E as a tool to detect possible data errors, using examples provided in this report as a guideline.	CSO
January 2026	Expand the product dimension of the upcoming SUT to improve estimation of GFCF and HFCE in both the benchmark year, and subsequent GDP-E compilation.	CSO
December 2026	Publish GDP-E with the next GDP rebasing, for the time period of 2016 to the most current publication year.	CSO

9. Further details on the priority recommendations and the related actions/milestones can be found in the action plan under Detailed Technical Assessment and Recommendations.

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Acronyms

BOP	Balance of Payments
CARTAC	IMF's Caribbean Regional Technical Assistance Centre
CFC	Consumption of Fixed Capital
CII	Change in Inventories
CPC	Central Product Classification
CSO	Central Statistics Office
ECCB	Eastern Caribbean Central Bank
FISIM	Financial Intermediation Services Indirectly Measured
FOB	Free on Board
GDP	Gross Domestic Product
GDP-E	Expenditure-Based GDP
GDP-P	Production-Based GDP
GFCE	Government Final Consumption Expenditure
GFCF	Gross Fixed Capital Formation
HBS	Household Budget Survey
HFCE	Household Final Consumption Expenditure
HS	Harmonized System
IC	Intermediate Consumption
ICT	Information and Communication Technology
IMTS	International Merchandise Trade Statistics
IPD	Implicit Price Deflator
NPISH	Non-Profit Institutions Serving Households
PPI	Producer Price Index
SITC	Standard International Trade Classification, Revision 4.
SNA	System of National Accounts
SUT	Supply and Use Tables
TA	Technical Assistance
VA	Value Added

Section I. Introduction

10. With support from CARTAC the CSO compiles and releases current and constant 2018 price annual estimates of production-based GDP based on the ISIC Revision 4. The estimates are broadly consistent with the standards set out in the *2008 System of National Accounts (2008 SNA).*

11. The objectives of the mission were to (i) provide a sources and methods assessment for each expenditure category; (ii) compile experimental estimates of GDP-E; (iii) identify likely data errors and suggest strategies for fixing them; and (iv) recommend a path which would lead to publication of GDP-E. These developments are considered in the following sections of this report.

Section II. Sources and Methods

12. Each expenditure category was analyzed to determine appropriate sources and methods. This elaborated on a CARTAC mission in February 2022, which examined availability of data sources which could potentially be used in GDP-E compilation. A product flow approach was recommended where a direct estimate is not available. Table 2 lists the recommended sources and methods for each expenditure category and sub-categories, and experimental estimates were compiled for each of them. Given the experimental GDP-E estimation is benchmarked to the 2016 SUT, the relevant Central Product Classification (CPC) codes are also indicated, where applicable. The remainder of Section II describes the compilation in more detail for selected, relatively complex categories.

TABLE 2. Recommended Sources and Methods for GDP-E

CPC-SUT	Expenditure Category	Current Price Indicator/Method	Deflators	Volume Indicator/Method
	Government Final Consumption Expenditure	GFS current expenditure	Weighted Implicit Price Deflator	Deflated Current Price
	Household Final Consumption Expenditure			
01-02, 04, 21-23, 244	Food And Non-Alcoholic Beverages	Product Flow	CPI - Food and Non-Alcoholic Beverages, USA XPI - Food and Beverages.	Product Flow
241-243, 25	Alcohol and Tobacco	Product Flow	CPI - Alcoholic Beverages & Tobacco, USA XPI - Alcohol and Tobacco	Product Flow
26-29	Clothing & Footwear	Product Flow	CPI - Clothing	Product Flow
72	Housing	Reflated Volume	CPI Housing	Number of Household Electricity Customers
18, 692, 94	Water	Reflated Volume	CPI Water	Population

CPC-SUT	Expenditure Category	Current Price Indicator/Method	Deflators	Volume Indicator/Method
17, 691	Electricity	Reflated Volume	CPI Electricity	KWH to Households Customers
31-37	Household Goods (Wood, Paper, Chemicals, Pharmaceuticals, Rubber, Plastics, Non-Metallic Products)	Product Flow	CPI - Miscellaneous Goods, USA XPI - Wood, Paper, Chemicals, Plastics, Rubber, Non-Metallic Products	Product Flow
41-42	Household Goods (Metal Products, Kitchen Supplies, Hand Tools, etc..)	Product Flow	CPI - Miscellaneous Goods, USA XPI - Non-Machinery Metal Products	Product Flow
45, 47	Information and Communication Technology	Product Flow	CPI - Miscellaneous Goods, USA XPI - Communication Equipment	Product Flow
43, 44, 46, 48	Machinery & Equipment (Excluding Transportation)	Product Flow	CPI - Household Appliances, USA XPI -Machinery	Product Flow
491-2, 495-6, 499	Transportation Equipment	Product Flow	CPI - Vehicles,	Product Flow
4912, 4923, 4994	Transportation Equipment Parts	Product Flow	CPI - Miscellaneous Goods, USA XPI - Parts, Engines, Bodies	Product Flow
381	Furniture	Product Flow	CPI - Furniture, USA XPI - Household Goods (Furniture)	Product Flow
382-389	Other Manufactured Goods	Product Flow	CPI - Miscellaneous Goods, USA XPI, Misc. Manufactured Goods	Product Flow
6424	Air transport	Product Flow	CPI - Passenger Air Transport	Product Flow
841, 842	Telecommunications	Product Flow	CPI - Communications	Product Flow
7112, 7113	FISIM	Product Flow	CPI - Total	Product Flow
7114, 7119	Financial Services - Explicit Charges	Product Flow	CPI - Total	Product Flow
713	Insurance	Product Flow	CPI - Insurance	Product Flow

CPC-SUT	Expenditure Category	Current Price Indicator/Method	Deflators	Volume Indicator/Method
92	Education Services	Published Value Added - Education	Implicit	Published Value Added - Education
931	Health Services	Published Value Added – Health	Implicit	Published Value Added - Health
641, 63, 67, 68, 73, 82, 83, 85, 87, 89, 91, 93, 95, 96, 97, 98	Other Services	Reflated volume	CPI - Various	Population
	Non-Profit Institutions Serving Households	Reflated volume	CPI - Total	Population
	Gross Fixed Capital Formation			
53, 54	Construction	Product Flow	IPD Construction	Product Flow
41-42	Metal Products	Product Flow	CPI - Miscellaneous Goods, USA XPI - Non-Machinery Metal Products	Product Flow
45, 47	Information and Communication Technology	Product Flow	CPI - Miscellaneous Goods, USA XPI - Communication Equipment	Product Flow
43, 44, 46, 48	Machinery & Equipment (Excluding Transportation)	Product Flow	CPI - Household Appliances, USA XPI -Machinery	Product Flow
491-2, 495-6, 499	Transportation Equipment	Product Flow	CPI - Vehicles, USA XPI - Automotive Vehicles	Product Flow
381	Furniture	Product Flow	CPI - Furniture, USA XPI - Household Goods (Furniture)	Product Flow
382-389	Other Manufactured Goods	Product Flow	CPI - Miscellaneous Goods, USA XPI, Misc. Manufactured Goods	Product Flow
494-494	Ships and Boats	Product Flow	CPI - Vehicles	Product Flow
	Imports			
	Imports of Goods			

CPC-SUT	Expenditure Category	Current Price Indicator/Method	Deflators	Volume Indicator/Method
	Food, Beverages, and Tobacco	Imports of goods for SITC00_01_04	USA XPI - Food and Beverages.	Deflated imports
	Crude Materials and Mineral Fuels	Imports of goods for SITC02_03	USA XPI - Fuels and Lubricants	Deflated imports
	Chemicals	Imports of goods for SITC05	USA XPI - Chemicals	Deflated imports
	Manufactured Goods	Imports of goods for SITC06	USA XPI - Industrial Supplies and Materials	Deflated imports
	Machinery & Transport Equipment	Imports of goods for SITC07	USA XPI - Automotive Vehicles	Deflated imports
	Miscellaneous Goods	Imports of goods for SITC08_09	USA XPI, Misc. Manufactured Goods	Deflated imports
	Imports of Services			
	Air transport	Imports of air transport	CPI - Air Transport	Deflated imports
	Other business services	Imports of other business services	CPI - Services	Deflated imports
	Other services	Imports of other services	CPI - Services	Deflated imports
	Sea transport	Imports of sea transport	CPI - Sea Transport	Deflated imports
	Travel	Imports of travel	CPI - Accommodation	Deflated imports
	Exports			
	Exports of Goods			
	Food, Beverages, and Tobacco	Exports of goods for SITC00_01_04	IPD - Food, Beverages, and Tobacco	Deflated imports
	Crude Materials and Mineral Fuels	Exports of goods for SITC02_03	USA XPI - Fuels and Lubricants	Deflated imports
	Chemicals	Exports of goods for SITC05	USA XPI - Chemicals	Deflated imports
	Manufactured Goods	Exports of goods for SITC06	USA XPI - Industrial Supplies and Materials	Deflated imports
	Machinery & Transport Equipment	Exports of goods for SITC07	USA XPI - Automotive Vehicles	Deflated imports
	Miscellaneous Goods	Exports of goods for SITC08_09	USA XPI, Misc. Manufactured Goods	Deflated imports

CPC-SUT	Expenditure Category	Current Price Indicator/Method	Deflators	Volume Indicator/Method
	Exports of Services			
	Travel	Exports of Travel, Balance of Payments	PPI Accommodation	Deflated exports
	Other Services	Exports of Other Services	CPI - Services	Deflated Exports

13. Government Final Consumption Expenditure uses a weighted implicit price deflator. In the annual compilation of public administration and defense, public health, public education, postal services and social services, the output of the Government sector is derived. Additional adjustments are performed for market production, consumption of fixed capital (CFC) and financial intermediation services indirectly measured (FISIM). This can be used as the estimate for current price GFCE. At constant prices, one could create a weighted IPD between public administration, public education, and public health, using the published VA of all three industries. Table 3 illustrates the calculation.

TABLE 3. Government Final Consumption Expenditure (EC$ Millions)

	2016	2017	2018	2019	2020	2021	2022	2023
GFCE at current prices	672	686	711	718	824	853	834	838
Current Price Value Added								
Public Administration	263	250	277	290	292	209	171	331
Public Education	143	137	139	141	144	229	244	244
Public Health	67	92	87	76	99	96	109	79
Weighted Value Added								
Public Administration	0.56	0.52	0.55	0.57	0.55	0.39	0.33	0.51
Public Education	0.30	0.29	0.28	0.28	0.27	0.43	0.47	0.37
Public Health	0.14	0.19	0.17	0.15	0.18	0.18	0.21	0.12
Implicit Price Deflator								
Public Administration	97	91	100	102	99	69	56	116

Public Education	106	101	100	99	98	153	160	174
Public Health	79	108	100	85	108	102	114	90
Weighted IPD	97	97	100	99	100	111	117	134
GFCE – Constant	694	706	711	729	820	766	715	623

14. Estimating Household Final Consumption Expenditure for goods-based products without a Gross Fixed Capital Formation component. HFCE for goods-based products can be further disaggregated between those which do and do not contain any GFCF. Food and Beverages, Alcohol and Tobacco, Transportation Equipment Parts, Clothing, and Household Goods (Wood, Paper, Chemicals, Pharmaceuticals, Rubber, Plastics, Non-Metallic Products) do not contain any GFCF (according to the 2016 SUT). The products within these categories contain domestic production, and the CSO compiles output at constant prices using volume indicators (usually employment). This domestic production is used to extrapolate domestic output at constant prices, benchmarked to the SUT and reflated with an appropriate CPI to derive current prices. Imports and exports are then compiled, using a concordance between CPC and Harmonized System Codes (HS) which was developed during the development of the 2016 SUT. It should be noted that the mission discovered errors in this concordance. For the next rebasing, an official CPC to HS concordance produced by the United Nations Statistics Division (UNSD)1 should be utilized. As well, there were significant differences between the detailed IMTS export data received and the data published by the Eastern Caribbean Central Bank at the Standard International Trade Classification, Revision 4 (SITC) level2. To address this, the detailed IMTS export data were benchmarked to the ECCB data at the SITC level, and variation within SITC groupings were maintained as much as possible. Moving forward, a version of the IMTS which is consistent with the ECCB publication should be utilized for GDP-E compilation. At constant prices, imports are deflated with a relevant USA export price index3, if one could be located. Exports were deflated with a relevant CPI, IPD or USA export price index (since most exports are re-exports). A product flow approach necessitates an estimate of intermediate consumption (IC). From the 2016 SUT one can estimate the relationship between VA and IC of the products from a particular expenditure category. Using the growth in published constant price VA for these industries, one can extrapolate constant price IC. With this information, supply and demand for the products within the expenditure category are compiled. The imbalance between supply and demand is therefore HFCE. Table 4 illustrates the compilation for HFCE of Food and Beverages.

TABLE 4. HFCE - Food and Beverages (EC$ '000,000)

	2016	2017	2018	2019	2020	2021	2022	2023
Supply								

[1] Classification on Economic Statistics, United Nations Statistics Division

[2] Eastern Caribbean Central Bank, Merchandise Trade Statistics by SITC

[3] US Bureau of Labor Statistics, Import/Export Price Indexes

1) Domestic Output Volume Index - Food Manufacturing	96.8	97.3	100.0	103.6	84.2	88.3	93.3	97.2
2) SUT - Domestic production at Purchaser (2018) Prices	811,337							
3) Extrapolate Domestic Production at Purchaser (2018) Prices	811,337	815,367	838,365	868,466	705,720	739,999	782,391	814,945
4) CPI - Food and Beverages	99.1	98.3	100.0	102.2	100.9	101.3	106.9	113.9
5) Domestic Production at Current Prices	804,365	801,483	838,365	887,240	711,878	749,487	836,614	927,975
6) IMTS Imports of Food and Beverages	359,066	382,270	392,913	401,146	351,299	401,259	522,284	528,479
7) SUT - Imports of Food and Beverages	365,636							
8) Extrapolate Imports at Current Prices	365,636	389,264	400,103	408,485	357,727	408,601	531,841	538,148
9) USA XPI - Food and Beverages	98	99.55	100.00	100.49	100.51	124.55	142.14	134.05
10) Imports at Constant (2018) Prices	373,737	391,010	400,103	406,484	355,925	328,067	374,174	401,463
Total Supply, Current Prices	1,170,002	1,190,747	1,238,468	1,295,725	1,069,605	1,158,088	1,368,455	1,466,123

Total Supply, Constant Prices	1,185,074	1,206,377	1,238,468	1,274,950	1,061,645	1,068,066	1,156,565	1,216,409
Demand								
1) IMTS Exports of Food and Beverages	64,865	61,833	41,303	49,985	35,081	26,786	25,425	25,778
2) SUT - Exports of Food and Beverages	56,432							
3) Extrapolate Exports at Current Prices	56,432	53,795	35,934	43,487	30,521	23,304	22,120	22,427
4) IPD - Food and Beverages	112	114	100	95	112	106	95	109
5) Exports at Constant (2018) Prices	50,588	47,148	35,934	45,556	27,324	21,912	23,299	20,515
6) IC of Food and Beverages by Industry (Total), SUT, 2018 Prices	367,509							
7) Extrapolate IC, based on growth in Value Added (by Industry) Constant Prices	367,509	390,165	410,322	420,579	222,992	270,545	397,068	432,723
8) Convert to Current Prices with CPI - Food & Beverages	370,694	383,522	410,322	429,670	224,938	274,014	424,587	492,740
Total Demand, Current Prices	427,126	437,316	446,256	473,158	255,459	297,318	446,707	515,167

Total Demand, Constant Prices	418,097	437,313	446,256	466,135	250,316	292,457	420,367	453,238
Product Balance - HFCE Current	742,875	753,431	792,212	822,567	814,146	860,771	921,748	950,956
Product Balance - HFCE Constant	766,977	769,063	792,212	808,815	811,329	775,609	736,198	763,171

15. There is an inconsistency between the exports in the SUT and IMTS data. For imports, the differences are relatively small. The mission examined the files used to compile the 2015 SUT. Adjustments were performed for both imports and exports. The summation of the adjustments over all products were zero, suggesting they were product balancing adjustments. Nevertheless, a full analysis for the SUT was beyond the scope of the mission. In cases where there is a difference between the international trade data and the value in the SUT, respect the SUT value, and use the IMTS to extrapolate.

16. The product flow approach does not make an adjustment for change in inventories. The CSO are not in possession of an indicator for change in inventories (CII). It is recommended therefore to ultimately publish GDP-E with a category which combines CII and statistical discrepancy. However, one can include an additional dimension to the calculation in Table 4. One can use population as a volume indicator to estimate constant price HFCE. The product imbalance in this case would be the implied CII. This should be added to the compilation as a method to help identify possible issues. Table 5 supplements the calculations for HFCE for Food and Beverages.

TABLE 5. HFCE - Food and Beverages, Population Method, Implied CII

	2016	2017	2018	2019	2020	2021	2022	2023
Population	176,559	177,997	179,344	180,592	181,735	182,764	183,675	184,460
Extrapolate Constant Price HFCE	766,977	773,225	779,076	784,499	789,462	793,935	797,890	801,301
Current Price HFCE (CPI Food)	742,875	786,619	779,076	767,900	782,633	783,883	746,176	703,701
Total Supply, Current Prices	1,170,002	1,190,747	1,238,468	1,295,725	1,069,605	1,158,088	1,368,455	1,466,123

Total Demand, Current Prices	1,170,002	1,223,936	1,225,332	1,241,057	1,038,091	1,081,201	1,192,883	1,218,868
Implied CII % (total output), Current Prices	-	(3)	1	4	3	7	13	17

17. The implied CII can identify possible data issues. By 2021, the implied CII grows to unreasonable levels and remains elevated for the remainder of the period. Section III will illustrate some outliers and suggest methods to investigate them.

18. Estimating Household Final Consumption Expenditure and Gross Fixed Capital Formation for goods-based products which contain both components. The expenditure categories of Metal products (CPC 41–42), Information and Communication Technology (ICT), Other Machinery, Transportation Equipment, Furniture, and other Manufactured Goods contain both HFCE and GFCF. The product flow approach is utilized in the same manner to derive a product imbalance. Decomposing the imbalance between HFCE and GFCF is problematic. A short-term solution is to decompose based on the SUT and maintain that from 2017 to 2023. Table 6 illustrates the compilation for Transportation Equipment.

TABLE 6. Decomposition of Transportation Equipment Between HFCE and GFCF

	2016	2017	2018	2019	2020	2021	2022	2023
Current Prices								
Imbalance from Product Flow Approach	127,219	173,857	142,887	161,993	134,522	173,548	168,238	254,795
SUT Composition of HFCE vs GFCF	0.39							
HFCE	49,041	67,018	55,080	62,445	51,855	66,899	64,852	98,218
GFCF	78,179	106,839	87,807	99,548	82,666	106,649	103,386	156,577
Constant Prices								
Imbalance from Product Flow Approach	125,087	173,770	142,887	159,698	129,314	169,456	158,617	222,934
SUT Composition of HFCE vs GFCF	0.39							
HFCE	48,219	66,985	55,080	61,560	49,848	65,322	61,143	85,936
GFCF	76,869	106,785	87,807	98,138	79,466	104,134	97,473	136,997

19. Decomposition between HFCE and GFCF should be improved with next GDP rebasing. The method in Table 6 can be significantly improved. In the SUT design, Transportation Products is too broad and should be disaggregated in a manner that identifies products which are exclusively GFCF, exclusively HFCE, and those which contain both. This disaggregation should be performed 'within reason' to sufficiently allow for subsequent GDP-E compilation, while maintaining a SUT product dimension which is manageable. Each of the components within 'Transportation Equipment' can then be subsequently estimated using a product flow approach. Table 7 contains a suggested decomposition of 'Transportation Products' for the next SUT estimation. This exercise should also be performed for Metal products (CPC 41–42), ICT, Other Machinery, Furniture, and other Manufactured Goods.

TABLE 7. Recommended Product Detail for Transportation Equipment

CPC	Description	GFCF Only	HFCE Only	Both
49111	Road tractors for semi-trailers	Yes		
49112	Public-transport type passenger motor vehicles	Yes		
49113	Motor cars and other motor vehicles			yes
49114	Motor vehicles n.e.c. for the transport of goods	Yes		
49115	Crane lorries	Yes		
49116	Motor vehicles, designed for travelling on snow; golf cars and similar vehicles			yes
49119	Special-purpose motor vehicles n.e.c.	Yes		
4912	Bodies, Chassis, Trailers	Yes		
496	Aircraft and spacecraft	Yes		
4991	Motorcycles and sidecars			yes
4992	Bicycles and invalid carriages		yes	
4993	Vehicles n.e.c., not mechanically propelled			yes

20. Estimating Household Final Consumption Expenditure for categories which contain BOP data. The expenditure categories of Air Transportation and Telecommunications have international trade flows estimated through BOP. These flows should be integrated through the product flow approach and benchmarked to the international trade of the SUT. Estimation of IC is carried out in same manner as other HFCE categories.

21. Compilation of international trade. Through the ECCB, BOP provides imports and exports of goods and services. The imports of goods are provided at free on board (FOB), so an adjustment from Cost, Insurance, and Freight (CIF) is not necessary. Imports of goods at constant prices required a decomposition by SITC, which are also provided by the ECCB. As a disproportionate number of imports are from the United States, an appropriate USA Export Price Index was retrieved, and re-referenced to 2018 to derive constant price estimates. Imports of services from BOP was disaggregated between Air Transport, Business Services, Other Services, Sea Transport and Travel. They were deflated with an appropriate domestic CPI. This could be improved through an evaluation of the primary country of origin of these imports, and the availability of a producer price index (PPI) or an IPD in that country. Domestic exports of goods are primarily Food, Beverages,

and Tobacco, and the domestic IPD for this industry was used for deflation. The remaining exports are largely re-exports, and the relevant USA Export Price Index Exports was the deflator. Exports of services are decomposed between travel and other services. The deflators were the PPI Accommodation, and CPI Services respectively. Table 8 illustrates the calculations.

TABLE 8. Estimation of International Trade (EC$ Millions)

	2016	2017	2018	2019	2020	2021	2022	2023
Exports of Goods, BOP	243	253	190	246	164	233	367	408
Of which is SITC 0, 1, 4	88	84	89	106	76	100	120	142
Of which is SITC 2, 3	10	25	28	24	22	41	124	83
Of which is SITC 5	18	17	7	8	12	13	18	20
Of which is SITC 6	23	25	14	10	6	9	15	16
Of which is SITC 7	52	50	38	31	17	31	36	40
Of Which is SITC 8,9	52	51	13	67	32	39	53	108
Exports of Services, BOP	2,239	2,545	2,818	3,018	1,054	1,686	3,133	3,359
Of which is Travel	2,095	2,362	2,601	2,874	919	1,536	2,943	3,153
Of which is 'Other Services'	144	184	217	144	135	150	190	206
Imports of Goods, BOP (FOB)	1,555	1,556	1,565	1,533	1,309	1,593	2,010	2,395
Of which is SITC 0, 1, 4	354	378	370	403	357	419	502	557
Of which is SITC 2, 3	329	269	379	299	183	238	519	678
Of which is SITC 5	126	121	139	133	134	170	172	177
Of which is SITC 6	217	247	213	225	200	266	277	303
Of which is SITC 7	350	358	297	310	287	338	343	446

Of Which is SITC 8,9	179	183	166	163	147	163	198	233
Imports of Services, BOP	943	1,029	1,098	1,214	621	815	1,214	1,348
Of which is Travel	137	147	151	155	52	65	135	147
Of which is Air Transportation	76	84	87	98	24	47	113	123
Of which is Sea Transportation	170	177	178	174	149	181	228	272
Of which is Business Services	413	470	515	602	252	358	564	613
Of which is Other Services	148	152	166	184	144	163	173	193
Current Prices								
Exports of Goods	243	253	190	246	164	233	367	408
Exports of Services	2,239	2,545	2,818	3,018	1,054	1,686	3,133	3,359
Imports of Goods	1,555	1,556	1,565	1,533	1,309	1,593	2,010	2,395
Imports of Services	943	1,029	1,098	1,214	621	815	1,214	1,348
Deflators								
IPD Food, Beverages and Tobacco	112	114	100	95	112	106	95	109
PPI Accommodation	88	95	100	97	110	111	118	111
CPI Other	101	102	100	101	99	99	102	107
CPI Air Transport	83	96	100	99	86	103	97	106
CPI Accommodation	103	104	100	99	102	100	101	111
CPI Sea Transport	96	96	100	99	98	100	112	113

USA XPI - Food and Beverages.	98	100	100	100	101	125	142	134
USA XPI - Fuels and Lubricants	70	86	100	91	67	106	158	124
USA XPI – Chemicals	93	94	100	98	95	123	129	116
USA XPI - Industrial Supplies and Materials	86	92	100	96	87	117	145	125
USA XPI - Automotive Vehicles	99	99	100	100	100	101	106	109
USA XPI, Misc. Manufactured Goods	101	99	100	101	99	104	118	125
Constant Prices								
Exports of Goods	243	250	190	253	169	219	308	349
Of which is SITC 0, 1, 4	79	74	89	111	68	94	126	130
Of which is SITC 2, 3	14	29	28	26	33	39	79	67
Of which is SITC 5	20	18	7	8	13	10	14	17
Of which is SITC 6	27	27	14	10	7	7	10	13
Of which is SITC 7	52	51	38	31	17	30	34	36
Of Which is SITC 8,9	52	52	13	66	32	37	45	86
Exports of Services	2,534	2,676	2,818	3,117	969	1,536	2,686	3,026
Of which is Travel	2,390	2,496	2,601	2,975	833	1,385	2,501	2,834
Of which is 'Other'	143	180	217	142	136	151	185	192
Imports of Goods	1,749	1,635	1,565	1,570	1,436	1,416	1,498	1,953
Of which is SITC 0, 1, 4	362	380	370	401	355	336	353	416

Of which is SITC 2, 3	469	314	379	329	275	224	329	549
Of which is SITC 5	135	129	139	136	142	138	133	152
Of which is SITC 6	252	267	213	234	229	227	191	242
Of which is SITC 7	354	361	297	309	287	333	324	408
Of Which is SITC 8,9	177	184	166	161	148	156	167	186
Imports of Services								
Of which is Travel	133	142	151	157	51	65	134	132
Of which is Air Transportation	91	87	87	99	27	46	116	116
Of which is Sea Transportation	178	185	178	176	151	181	204	240
Of which is Business Services	411	460	515	594	254	362	551	571
Of which is Other Services	147	149	166	181	145	164	169	180
Constant Prices								
Exports of Goods	243	250	190	253	169	219	308	349
Exports of Services	2,534	2,676	2,818	3,117	969	1,536	2,686	3,026
Imports of Goods	1,749	1,635	1,565	1,570	1,436	1,416	1,498	1,953
Imports of Services	960	1,022	1,098	1,207	629	818	1,174	1,239

Recommended Actions

The CSO should:

- Use the recommendations in Table 2 to compile experimental GDP-E, concurrently with GDP-P, as a tool for improving the quality of GDP-P.
- Use a weighted IPD between Public Administration and Defense, Public Health, and Public Education to derive constant price GFCE.
- Apply the product flow method as illustrated in Table 3 to estimate HFCE for products without a GFCF component.

- For products with both an HFCE and GFCF component, use the 2016 SUT to decompose, and extrapolate value added using the product flow method.
- For the next GDP rebasing, further disaggregate the product dimension of the SUT for Metals, ICT, Transportation Equipment, Machinery, Furniture and Other Manufactured goods, using Table 7 as a guide, to improve HFCE and GFCF estimation in subsequent GDP-E.
- Integrate BOP data on international trade in services to estimate HFCE of Air Transportation and Telecommunications.
- Decompose imports of goods by SITC and use the relevant USA Export Price Index to convert to constant prices.
- Evaluate the country origin of imports of services and determine if an appropriate deflator from that country is available.
- Use a version of the IMTS which is consistent with the ECCB publication for GDP-E compilation.

Section III. Broad Levels Results and Evaluating Outliers

22. The mission assisted with compiling experimental GDP-E from 2016–2023 for all expenditure categories. Table 9 contains the experimental GDP-E series from 2016 to 2023 at current prices. Problematic data points are highlighted.

TABLE 9. Experimental GDP-E, Current Prices (EC$ Millions)

	2016	2017	2018	2019	2020	2021	2022	2023
Published Production GDP	5045	5396	5565	5659	4041	5028	6309	6588
Preliminary Expenditure GDP Estimates	5049	5443	6021	5737	4971	5595	7046	7002
Household Final Consumption	3064	3136	3651	3494	3571	3764	4459	4660
Gross Fixed Capital formation	1288	1369	1273	966	1246	1424	1432	1432
Structures	575	643	565	566	581	680	694	725
Machinery and Other	712	726	708	400	664	744	738	706
Government Final Expenditure, NPISH, Valuables	713	727	752	760	865	896	880	885
Net Trade	-16	212	345	517	-711	-489	274	25
Exports of Goods	243	253	190	246	164	233	367	408
Exports of Services	2239	2545	2818	3018	1054	1686	3133	3359
Imports of Goods (FOB)	1555	1556	1565	1533	1309	1593	2010	2395
Imports of Services	943	1029	1098	1214	621	815	1214	1348

Change in Inventory/Discrepancy, %, relative to GDP-P	1.00	1.01	1.08	1.01	1.23	1.11	1.12	1.06

23. The 2018 estimates have issues with HFCE. HFCE in 2018 is growing much more quickly than the headline GDP and causing the discrepancy between GDP-E and GDP-P to increase to eight percent. HFCE in Housing and Metal Products are behind this increase. Table 10 illustrates some of the elements of these calculations.

TABLE 10. HFCE, Housing and Metal Products

	2016	2017	2018
HFCE Housing			
Number of Residential Electricity Customers	58,867	59,620	60,726
HFCE Housing - SUT (2018 Prices)	714,722		
Extrapolate Constant Prices	714,722	723,864	737,293
CPI Housing	76	83	100
HFCE Housing - Current Prices	540,039	599,576	737,293
HFCE Metal Products			
Domestic Production - Volume Index		480,467	544,516
IMTS Imports		661,587	779,890
IMTS Exports		82,378	46,608
IC Current Prices		1,018,923	987,850
HFCE Current Prices		40,753	289,948

24. The CPI Housing between 2017 and 2018 is an outlier. HFCE in Housing is increasing between 2017 and 2018 primarily because of the large increase in the CPI of Housing. The ECCB is publishing an increase in the CPI for Housing for the entire Eastern Caribbean of only 4.6 percent, versus 20 percent for Saint Lucia. There is also an increase in domestic production and imports of metals, and a decrease in exports. However, IC is also decreasing due to a contraction of the construction industry (a major purchaser of metals) according to the published VA estimates. It is surprising that construction VA is decreasing given availability of building materials in the indicator used. Nevertheless, HFCE must increase dramatically to balance the product. These examples highlight the importance of concurrent compilation of GDP-E, as outliers such as these could be identified and further investigated during the annual production cycle.

25. The discrepancy improves between 2018 and 2019. The discrepancy falls to one percent in 2019. However, there is a significant decrease in HFCE and GFCF in Machinery and Other which warrants further investigation. In both cases, a decrease in Other Manufacturing Products are the outliers. Table 11 illustrates some of the elements of these calculations.

TABLE 11. Product Flow, Other Manufactured Products

	2016	2017	2018	2019	2020
Volume Index - Domestic Output of Other Manufacturing Products	94	94	100	100	100
IMTS Imports	20,005	21,926	20,586	24,524	33,612
IMTS Exports	1,550	1,817	1,201	26,883	72
HFCE Metal Products - Current Prices	18,495	18,408	20,844	(59,365)	27,585
GFCF Metal Products - Current Prices	65,799	65,488	74,155	(211,197)	98,136

26. Exports of paintings is cause of the issue with HFCE and GFCF. Table 11 shows a dramatic increase in exports of Other Manufactured Products. If this was a re-export, we should see an accompanying increase in imports. An analysis of the detailed HS data revealed this is due to a painting being exported. The treatment of the painting is a complex issue. If the painting is an existing valuable and not newly produced, it represents a change in ownership of a store of value-previously produced asset rather than a new good being produced for sale. In the national accounts this is recorded as an export, with an accompanying decrease in CII or acquisition less disposals of valuables, and hence GDP neutral. If the painting is newly produced, and the HS data are verified, an adjustment to the output and VA of Other Manufacturing would have been appropriate. In any case, this further illustrates the need for concurrent compilation of GDP-E as a tool for improving the quality of GDP-P.

Recommended Action

The CSO should:

- Use the examples in Tables 10 and 11 to help identify, investigate, and fix outliers in concurrent GDP-E compilation.

Section IV. Detailed Technical Assessment and Recommendations

TABLE 12. Detailed Technical Assessment

Priority	Action/Milestone	Target Completion Date	Actual completion date
Objective: Strengthen compilation and dissemination of National Production, Income and Expenditure Accounts.			
Outcome: Developed and released a new vintage of annual expenditures of GDP at current and constant prices.			

Priority	Action/Milestone	Target Completion Date	Actual completion date
H	GDP-E at current prices and constant prices are published.	4/30/2026	On-going
H	Experimental GDP-E is compiled concurrently with GDP-P.	4/30/2025	On-going

TABLE 13. Summary of Recommendations

Priority	Recommendation	Target Completion Date
H	Compile experimental GDP-E as a tool to detect possible data errors, using examples provided in this report as a guideline.	April 2025
H	Expand the product dimension of the upcoming SUT to improve estimation of GFCF and HFCE in both the benchmark year, and subsequent GDP-E compilation.	January 2026
H	Publish GDP-E with the next GDP rebasing, for the time period of 2016 to the most current publication year.	December 2026
M	Use a weighted IPD between Public Administration and Defense, Public Health, and Public Education to derive constant price GFCE.	April 2025
H	Apply the product flow method as illustrated in Table 3 to estimate HFCE for products without a GFCF component.	April 2025
H	For products with both an HFCE and GFCF component, use the 2016 SUT to decompose, and extrapolate value added using the product flow method.	April 2025
M	Integrate BOP data on international trade in services to estimate HFCE of Air Transportation and Telecommunications.	April 2025
H	Decompose imports of goods by SITC and use the relevant USA Export Price Index to convert to constant prices.	April 2025
M	Evaluate the country origin of imports of services and determine if an appropriate deflator from that country is available.	April 2025
M	Use a version of the IMTS which is consistent with the ECCB publication for GDP-E compilation	December 2026
H	Use the examples in Tables 10 and 11 to help identify, investigate, fix outliers in concurrent GDP-E compilation.	April 2025

Section V. List of Officials Met During the Mission

Name	Institution
Mr. Sean Mathurin	Central Statistics Office
Mr. Richard Harris	Central Statistics Office
Mr. Arnold Lafeuillee	Central Statistics Office
Ms. Nola Anthony	Central Statistics Office
Ms. Abigail Leo	Central Statistics Office