

National Accounts Rebasing: Challenges and Lessons Learnt

ECLAC National Accounts Seminar
October 3 – 6, 2022





GDP Series Rebasing Process



- ▶ **Enhancement of GDP Series in 2016**

- ▶ Integration of 2002 SUT Benchmarks
- ▶ Alignment to prevailing Census, Survey and administrative data
- ▶ Implementation of relevant SNA 2008 principles
- ▶ Recalculation of FISIM
- ▶ Introduction of Quarterly GDP series, using DENTON (XLBPM) proportional benchmarking methods; benchmark-indicator approach

- ▶ **Construction of SLUCOM and SLIND product and industry classifications** based on CPC 2.1 and ISIC Rev. 4, respectively

- ▶ **Compilation of 2016 Supply and Use Tables (SUT)**



GDP Series Rebasing Process

- ▶ **Integration of new/updated benchmarks from 2016 SUT**
- ▶ **Application of volume and price adjustments to 2016 benchmarks** to derive 2018 base values; identifying more robust value, price and volume indicators for all respective industries
- ▶ **Reconstruction of QGDP and AGDP worksheets**, based on 2018 and customized/modified ISIC Rev 4 classification
- ▶ **Back-casting between 2006 and 2016**; Current Prices: 'wedging' (i.e. convergence of 2006 and 2016 benchmark trends) of output and/or input-output ratios to reflect improved coverage of industries; Constant Prices: reversal of reported growth-rates

Concordance Tables - Products

Saint Lucia 2016 SUT Product (SLUCOM) and Industry (SLUSIC) Classifications_16Feb2021 - Excel

	B	C	D
1	CPC 2.1	Description	
2	01312	Bananas	
3	011, 012, other 013, 014, 015, 016, 017, 8611, 0191-0197, 01	Other crops	
4	021, 8612, 8613	Live animals	
5	022, 023, 0291, 0292, 0293	Eggs, honey and raw milk	
6	024, 0294, 0295, 0296, 216-217	Other non-edible animal & vegetable products	
7	03, 8614	Forestry products	
8	04	Fresh fish and seafood	
9	15, 862	Sand, stone, gravel and other	
10	11, 12, 13, 14, 16, 862	Mining products	
11	211	Meat and poultry products	
12	212	Processed fish	
13	213, 214, 215	Processed fruit and vegetables; oils and fats	
14	22	Dairy products	
15	231,232, 237	Pasta, grain mill and starch products	
16	234	Bakery products	
17	235, 236, 238	Other food products n.e.c.	

Concordance Tables - Industries

Saint Lucia 2016 SUT Product (SLUCOM) and Industry (SLUSIC) Classifications_16Feb2021 - Excel

	A	B	C
1	SLUSIC	ISIC4	Description
2	1	0112	Growing of bananas
3	2	0123	Growing of other crops
4	3	0140	Raising of livestock; hunting
5	4	02	Forestry and logging
6	5	03	Fishing and aquaculture
7	6	08	Mining and quarrying
8	7	101	Manufacturing of meat and poultry products
9	8	103	Manufacturing of processed fruit and vegetables; oils and fats
10	9	105	Manufacturing of dairy products
11	10	106	Manufacturing of pasta, grain mill and starch products
12	11	1071	Manufacturing of bakery products

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Compilation of 2016 SUT: Sources & Method

Supply

Imports:

ASYCUDA
EUROTRACE
BOP

Domestic Output By SLUSIC:

CIT/VAT
NA Survey
Business A/Cs

=

Use

IC by SLUSIC:

CIT/VAT
- Expenses
- Purchases

Business A/Cs
Statistical –
Inference

PFCE:

HBS/SLC

Price and
Volume
Adjustments

GCF:

External Trade
Govt. Estimates
Construction –
Survey

GFCE:

Govt. Estimates
GFS
COFOG

Exports:

ASYCUDA
EUROTRACE
BOP

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Calculation of Output, IC and VA for New Industries – Output and Input Price Indicators

ISIC4 R - Arts, Entertainment and Recreation - Excel

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C61 =I61

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Year	Quarter	Services CPI	Electricity	Transport	Financial services	Actual rents	Other goods	Other services	IC Price Index	Year	Output Price Index	IC Price Index		
2	Benchmark		Output	0.03	0.03	0.02	0.02	0.08	0.82	Index					
45	2016	3	97.11	86.80	96.41	99.47	78.44	101.34	97.11	96.78					
46	2016	4	96.81	88.42	95.17	96.75	74.83	98.05	96.81	96.15					
47	2017	1	97.98	91.29	95.46	101.33	80.95	98.09	97.98	97.45					
48	2017	2	98.61	89.96	97.44	100.73	84.14	99.67	98.61	98.14					
49	2017	3	98.88	88.30	101.50	100.92	80.62	97.84	98.88	98.22					
50	2017	4	98.59	90.73	100.21	100.93	85.60	99.12	98.59	98.23					
51	2018	1	99.53	94.60	98.53	104.41	90.52	100.63	99.53	99.37					
52	2018	2	100.20	97.19	99.89	104.41	102.94	100.03	100.20	100.24					
53	2018	3	100.32	102.21	99.66	100.00	108.02	100.19	100.32	100.50					
54	2018	4	99.95	106.00	101.92	91.18	98.52	99.15	99.95	99.89					
55	2019	1	100.46	100.75	103.83	106.52	98.30	97.71	100.46	100.46					
56	2019	2	100.26	100.93	102.83	106.52	97.88	97.32	100.26	100.23					
57	2019	3	100.47	100.24	103.85	106.52	97.52	98.90	100.47	100.53					
58	2019	4	99.45	100.71	104.73	104.98	97.52	99.65	99.45	99.76					
59	2020	1	98.68	95.20	99.57	109.32	96.99	99.77	98.68	98.90					
60	2020	2	97.94	86.47	97.55	109.46	96.99	97.01	97.94	97.76					
61	2020	3	98.86	88.11	98.09	109.90	90.49	96.56	98.86	98.42					
62	2020	4	99.33	88.74	97.96	109.91	85.83	95.98	99.33	98.68					

Annual Summary Quarterly Summary NIC Employment Prices 2006 Previous 2002 SUT

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Calculation of Output, IC and VA for New Industries – Volume Indicators

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J
1	Year	Quarter	Employment		Annual	Employment				
2	Benchmark		2,190			Average				
3	2006	1	263		2006	260				
4	2006	2	265		2007	307				
5	2006	3	256		2008	307				
6	2006	4	257		2009	303				
7	2007	1	263		2010	308				
8	2007	2	331		2011	538				
9	2007	3	316		2012	527				
10	2007	4	319		2013	519				
11	2008	1	305		2014	492				
12	2008	2	309		2015	447				

The spreadsheet interface includes the following elements:

- File Name: ISIC4 R - Arts, Entertainment and Recreation - Excel
- Formulas Bar: =SUM(C51:C54)
- Worksheet Tabs: Annual Summary, Quarterly Summary, NIC Employment, Prices, 2006 Previous, 2002 SUT
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Calculation of Output, IC and VA for New Industries

- XLPBM: Denton Proportional Benchmarking

ISIC4 R - Arts, Entertainment and Recreation - Excel

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A1 Arts, Entertainment and Recreation Services

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Arts, Entertainment and Recreation Services												
2	EC millions	CONSTANT PRICE ESTIMATES			CURRENT PRICE ESTIMATES			Value Indicators					
3	Year	Qtr	Output	IC	GVA	Output	IC	GVA	Output	IC			
4			xlpbm first			xlpbm	xlpbm						
5													
56	2018	3	76.3	31.8	44.5	76.6	32.0	44.6		76.6	32.0		
57	2018	4	80.4	33.5	46.9	80.4	33.5	46.9		80.3	33.5		
58	2019	1	75.5	31.5	44.0	75.8	31.6	44.2		75.8	31.6		
59	2019	2	75.5	31.5	44.0	75.7	31.6	44.1		75.7	31.5		
60	2019	3	77.8	32.4	45.3	78.2	32.6	45.6		78.2	32.6		
61	2019	4	81.8	34.1	47.7	81.4	34.0	47.3		81.4	34.0		
62	2020	1	78.7	32.8	45.9	77.6	32.4	45.2		77.6	32.4		
63	2020	2	52.8	22.0	30.8	51.7	21.5	30.2		51.7	21.5		
64	2020	3	38.0	15.8	22.1	37.5	15.6	21.9		37.5	15.6		
65	2020	4	41.1	17.2	24.0	40.9	16.9	23.9		40.9	16.9		
66	2021	1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A					
67	2021	2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A					

Annual Summary Quarterly Summary NIC Employment Prices 2006 Previous 2002 SUT

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Calculation of Output, IC and VA for New Industries – Annual (Sum of Quarters) Estimates

ISIC4 R - Arts, Entertainment and Recreation - Excel

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A2 EC millions

ARTS, ENTERTAINMENT AND RECREATION													
EC millions													
CURRENT PRICE ESTIMATES													
CONSTANT PRICE ESTIMATES													
2006 SERIES ESTIMATES													
Year	Output	IC	GVA	Output	IC	GVA	2018 KPV rate	2006 KPV rate	CP Output	CP IC	CP GVA	KP Output	
2005	109.7	46.2	63.6	132.2	55.1	77.1	12.1%	12.1%	109.7	46.2	63.6	112.8	
2006	128.2	54.0	74.3	150.2	62.7	87.6	13.6%	13.6%	128.2	54.0	74.3	128.2	
2007	152.4	64.2	88.1	177.4	74.0	103.4	18.1%	38.3%	152.4	64.2	88.1	151.4	
2008	160.8	68.3	92.6	176.9	73.8	103.2	-0.2%	5.4%	160.8	68.3	92.6	151.0	
2009	160.0	67.1	92.8	174.8	72.9	101.9	-1.2%	2.6%	160.0	67.1	92.8	149.2	
2010	165.3	69.5	95.8	177.5	74.0	103.5	1.6%	0.5%	165.3	69.5	95.8	151.5	
2011	288.1	122.3	165.9	310.7	129.6	181.1	75.0%	13.0%	288.1	122.3	165.9	265.2	
2012	287.4	122.8	164.6	304.2	126.9	177.4	-2.1%	-4.2%	287.4	122.8	164.6	259.7	
2013	293.9	124.3	169.7	299.5	124.9	174.6	-1.6%	-11.4%	293.9	124.3	169.7	255.6	
2014	276.0	117.6	158.4	284.2	118.5	165.7	-5.1%	-3.7%	276.0	117.6	158.4	242.5	
2015	251.1	105.8	145.3	258.0	107.6	150.4	-9.2%	-0.7%	251.1	105.8	145.3	220.2	
2016	252.7	105.1	147.6	261.1	108.9	152.2	1.2%	2.9%	252.7	105.1	147.6	222.8	
2017	284.1	117.9	166.2	288.4	120.2	168.1	10.4%	-0.8%	284.1	117.9	166.2	246.1	
2018	316.1	131.8	184.3	316.1	131.8	184.3	9.6%	5.3%	316.1	131.8	184.3	269.8	
2019	311.1	129.8	181.2	310.6	129.5	181.1	-1.7%	-100.0%	311.1	129.8	181.2	265.1	
2020													
2021													

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Annual Summary Quarterly Summary NIC Employment Prices 2006 Previous 2002 SUT

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Challenges



- ▶ Inadequate record-keeping by 'informal' establishments
- ▶ Expensive and lengthy NA data collection exercises
- ▶ Low response rates to NA survey
- ▶ Outdated establishment registers
- ▶ Restricted access to administrative records
- ▶ Lack of standardized definitions, methods, classifications and identification numbers across the National Statistical System (NSS)
- ▶ No historic price and volume indicator-data for newly captured industries
- ▶ Balancing accuracy and timeliness



Lessons Learnt



- ▶ The importance of a SUT in facilitating the Rebasing Process:
 - ▶ Reconciling supply (Imports and Domestic Output) and use (Intermediate Consumption, Final Use and Exports); validating prevailing Output, Intermediate Consumption and Value Added estimates
 - ▶ Improved coverage of industries
 - ▶ Identification of emerging industries
 - ▶ Accounting for the underground, 'hidden' economy
 - ▶ Improved input-output ratios
 - ▶ Extended analysis of the Rebased series; Tourism and other Satellite Accounts
- ▶ Public dissemination of the Rebased Series: appropriate stakeholder engagement



THANK YOU!