



Solomon Islands Government

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**GROSS DOMESTIC PRODUCT
2003 - 2006**

**Solomon Islands National Statistics Office
Ministry of Finance and Treasury
Honiara**

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Introduction

This publication is the second set of GDP estimates to be released since the first GDP estimates was published in 2007, as Statistical Bulletin 13/2007, which contained only nominal GDP estimates for 2003 and 2004. In this publication, due to ongoing work, based on up-to-date data and information, the nominal GDP estimates for 2003 and 2004 have been revised and will be presented as final estimates.

These estimates were compiled with technical assistance from the Pacific Financial Technical Assistance Centre (PFTAC). They contain both nominal and constant price GDP estimates for 2003 to 2006. The 2003 and 2004 revised figures are final. The 2005 and 2006 estimates are however, still provisional.

Data used in compiling the 2003 and 2004 were derived from the Business and Non Profit Institution surveys and General Government financial accounts. The HHIES conducted in 2005/6, with assistance from the Secretariat of the Pacific Communities (SPC), is used as the benchmark data for estimating household final consumption expenditure and other GDP components for the informal sector. Gross Domestic Product at current prices and 2004 constant prices by industry for 2005 and 2006 are derived using various volume and price indicators.

Details on data sources, data limitations and the methods used in compiling current and constant price GDP components are provided in the appendix.

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Table 1: GDP by Economic Activity at Current Prices and Constant 2004 Prices

	Current Prices (SIS Millions)				Constant 2004 Prices (SIS Millions)			
	2003r/	2004r/	2005p/	2006p/	2003r/	2004r/	2005p/	2006p/
AGRICULTURE, FISHERIES & FORESTRY	974.8	1,034.1	1,053.1	1,217.4	1,025.4	1,034.1	1,056.6	1,122.2
Agriculture & Hunting	554.7	547.4	575.5	655.9	604.9	547.4	551.5	585.1
Forestry & Logging	242.3	280.7	306.1	353.2	212.9	280.7	304.8	308.7
Fishing	177.8	206.0	171.5	208.4	207.6	206.0	200.3	228.4
INDUSTRY	263.3	259.9	247.8	230.6	278.1	259.8	266.7	277.8
Mining & Quarrying	4.8	6.7	2.1	1.7	5.7	6.7	2.2	1.5
Manufacturing	156.6	176.2	173.5	165.5	175.5	176.2	177.5	184.5
Electricity & Water	43.5	45.5	49.2	44.6	45.2	45.5	53.0	53.9
Construction	58.4	31.4	22.9	18.8	51.7	31.4	34.0	37.9
SERVICES	1,203.6	1,452.6	1,755.6	1,966.7	1,311.0	1,452.6	1,572.2	1,696.4
Trade	226.1	317.4	344.8	402.7	293.5	317.4	335.8	362.7
Hotel & Restaurants	29.9	57.2	68.6	75.2	31.7	57.2	62.0	67.7
Transport & Storage	161.6	191.8	226.7	246.3	174.4	191.8	194.7	200.1
Communications	43.5	62.3	73.3	75.9	47.0	62.3	63.0	63.6
Financial Intermediation	24.1	36.6	50.8	64.2	25.8	36.6	47.3	55.2
Insurance Services	4.8	11.7	16.3	20.6	5.2	11.7	15.2	17.7
Real Estate & Renting	97.4	105.8	124.4	128.3	99.8	105.8	111.0	114.4
Owner Occupied Dwellings	215.4	229.8	268.3	279.5	220.6	229.8	239.3	249.3
Business Services	16.6	17.1	19.5	22.6	17.7	17.1	18.2	19.4
Public Administration & Defense	160.2	165.4	222.9	238.1	155.5	165.4	177.6	202.4
Education	86.2	102.2	135.0	157.6	92.3	102.2	122.3	138.1
Health	29.6	36.1	47.6	57.2	31.7	36.1	43.2	45.8
Other Services	108.3	119.2	157.5	198.4	116.0	119.2	142.7	159.8
Taxes on Products less Subsidies	71.3	82.4	84.5	88.6	78.5	82.4	86.9	92.9
Less Imputed Bank Charges	(15.6)	(21.4)	(24.2)	(28.1)	(16.7)	(21.4)	(22.6)	(24.1)
GROSS DOMESTIC PRODUCT (GDP)	2,497.5	2,807.6	3,116.7	3,475.3	2,676.4	2,807.5	2,959.7	3,165.3

r/ - revised estimates

p/ - preliminary estimates

Note: Estimates shown in italics are provisional and are derived using proxy price deflators based on CPI and HFCE price indexes or volume movement indicators developed during the previous mission. Further work is required to identify more appropriate volume indicators and/or develop more appropriate price deflators.

Table 2: GDP by Expenditure Share at Current Prices and Constant 2004 Prices

	Current Prices (SIS Millions)				Constant 2004 Prices (SIS Millions)			
	2003r/	2004r/	2005p/	2006p/	2003r/	2004r/	2005p/	2006p/
Final Consumption Expenditure	2,399.5	2,821.4	3,430.8	3,948.3	2,551.4	2,821.4	3,158.5	3,416.0
Household Final Consumption Expenditure	1,741.0	1,884.5	2,152.3	2,405.4	1,862.9	1,884.5	2,000.0	2,097.9
Private Non Profit Institutions Serving Households	133.9	135.5	<i>155.0</i>	<i>180.8</i>	143.3	135.5	<i>141.8</i>	<i>148.5</i>
Government Consumption Expenditure	524.6	801.5	<i>1,123.5</i>	<i>1,362.1</i>	545.2	801.5	<i>1,016.7</i>	<i>1,169.6</i>
Gross Fixed Capital Formation	227.7	281.5	389.6	464.7	240.4	281.5	361.0	393.8
Durable Equipment	94.6	66.0	210.5	257.3	101.1	66.0	196.1	209.8
Construction	133.1	215.6	179.1	207.4	139.2	215.6	164.9	184.0
Change in Inventories	7.2	38.4	39.3	42.6	8.0	38.4	40.2	47.5
Exports of Goods and Services	659.5	868.4	1,061.9	1,255.9	805.2	868.4	958.3	1,037.2
Merchandise, f.o.b.	500.1	641.0	788.8	851.5	634.8	641.0	703.9	689.2
Services	159.4	227.4	273.1	404.4	<i>170.4</i>	227.4	<i>254.4</i>	<i>348.0</i>
Less: Imports of Goods and Services	791.1	1,189.5	1,701.9	1,989.1	905.3	1,189.5	1,562.3	1,645.8
Merchandise, f.o.b.	676.6	1,019.5	1,294.8	1,566.9	774.3	1,019.5	1,188.6	1,296.5
Services	114.5	170.0	407.1	422.2	<i>131.1</i>	170.0	<i>373.7</i>	<i>349.3</i>
<i>Balance on External Goods and Services</i>	<i>(131.6)</i>	<i>(321.1)</i>	<i>(640.0)</i>	<i>(733.2)</i>	<i>(100.1)</i>	<i>(321.1)</i>	<i>(603.9)</i>	<i>(608.7)</i>
Statistical Discrepancy	(5.3)	(12.8)	(103.0)	(247.2)	(23.4)	(12.8)	3.9	(83.3)
GROSS DOMESTIC BY EXPENDITURE SHARE	2,497.5	2,807.6	3,116.7	3,475.3	2,676.4	2,807.5	2,959.7	3,165.3

r/ - revised estimates

p/ - preliminary estimates

Note: Estimates shown in italics are provisional and are derived using proxy price deflators based on CPI and HFCE price indexes or volume movement indicators developed during the previous mission. Further work is required to identify more appropriate volume indicators and/or develop more appropriate price deflators.

Table 3: Contribution to GDP at Current and Constant 2004 Prices

	Current Prices		Constant 2004 Prices	
	2003r/	2004r/	2003r/	2004r/
Agriculture, Forestry & Fishing	39.6%	37.0%	38.2%	37.0%
Agriculture & Hunting	22.8%	19.7%	22.6%	19.7%
Forestry & Logging	9.6%	10.0%	7.9%	10.0%
Fishing	7.2%	7.4%	7.7%	7.4%
Industry	10.4%	9.2%	10.3%	9.2%
Mining & Quarrying	0.2%	0.2%	0.2%	0.2%
Manufacturing	6.2%	6.3%	6.5%	6.3%
Electricity & Water	1.7%	1.6%	1.7%	1.6%
Construction	2.3%	1.1%	1.9%	1.1%
Services	47.8%	51.6%	49.2%	51.6%
Trade	9.0%	11.3%	10.9%	11.3%
Hotel & Restaurants	1.2%	2.0%	1.2%	2.0%
Transport & Storage	6.4%	6.8%	6.5%	6.8%
Communications	1.7%	2.2%	1.7%	2.2%
Financial Intermediation	1.0%	1.3%	1.0%	1.3%
Insurance Services	0.2%	0.4%	0.2%	0.4%
Real Estate & Renting	3.9%	3.8%	3.7%	3.8%
Owner Occupied Dwellings	8.5%	8.2%	8.2%	8.2%
Business Services	0.7%	0.6%	0.7%	0.6%
Public Administration & Defense	6.3%	5.9%	6.3%	5.9%
Education	3.4%	3.6%	3.4%	3.6%
Health	1.2%	1.3%	1.2%	1.3%
Other Services	4.3%	4.2%	4.3%	4.2%
Taxes on Products less Subsidies	2.8%	2.9%	2.9%	2.9%
Less Imputed Bank Charges	-0.6%	-0.8%	-0.6%	-0.8%
GROSS DOMESTIC PRODUCT (P)	100.0%	100.0%	100.0%	100.0%
Final Consumption Expenditure	97.6%	101.7%	96.7%	101.7%
Household Final Consumption Expenditure	71.6%	68.6%	70.9%	68.6%
Private Non Profit Institutions Serving Households	5.3%	4.8%	5.3%	4.8%
Government Consumption Expenditure	20.7%	28.3%	20.5%	28.3%
Gross Fixed Capital Formation	9.0%	9.9%	8.9%	9.9%
Change in Inventories	0.3%	1.4%	0.3%	1.4%
Exports of Goods and Services	26.1%	30.7%	29.7%	30.7%
Merchandise, f.o.b.	19.8%	22.6%	23.4%	22.6%
Services	6.3%	8.0%	6.3%	8.0%
Less: Imports of Goods and Services	32.9%	43.7%	35.6%	43.7%
Merchandise, f.o.b.	28.4%	37.7%	30.7%	37.7%
Services	4.5%	6.0%	4.9%	6.0%
GROSS DOMESTIC PRODUCT (E)	100.0%	100.0%	100.0%	100.0%

r/ - revised estimates

Table 4: Manufacturing Value Added at Current and Constant 2004 Prices

	Current Prices (SIS Millions)				Constant 2004 Prices (SIS Millions)			
	2003r/	2004r/	2005p/	2006p/	2003r/	2004r/	2005p/	2006p/
Food manufacturing	69.3	72.7	75.0	68.7	80.7	72.7	76.2	79.7
Beverages & tobacco manufacturing	31.5	40.8	38.7	35.2	34.6	40.8	42.8	44.8
Wood products manufacturing	14.1	16.6	19.5	23.8	19.7	16.6	16.3	14.9
Printing and publishing	6.7	7.0	6.9	7.3	7.4	7.0	7.3	7.7
Chemicals and rubber manufacturing	3.4	7.1	5.0	4.5	3.8	7.1	5.4	6.0
Non-metallic products manufacturing	1.7	3.0	2.1	1.9	1.7	3.0	2.2	2.5
Metallic products manufacturing	5.2	6.7	5.1	4.7	5.7	6.7	5.0	5.6
Other manufacturing	24.7	22.4	21.2	19.5	21.8	22.4	22.2	23.3
Total manufacturing	156.6	176.2	173.5	165.5	175.5	176.2	177.5	184.5

r/ - revised estimates

p/ - preliminary estimates

Table 5: Household and Population Projections

	2003	2004	2005	2006	2007	2008	2009	2010
November population	488,396	510,532	533,672	557,860	583,145	609,576	637,204	666,085
End of period population	490,241	512,461	535,688	559,967	585,348	611,878	639,611	668,601
Annual average (used in NAS)	479,613	501,351	524,074	547,828	572,658	598,613	625,745	654,106
Annual rate of increase	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Rural population	410,867	429,115	448,174	468,079	488,869	510,582	533,259	556,944
Annual rate of increase-Rural	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
Urban population	77,522	81,412	85,498	89,781	94,276	98,994	103,945	109,142
Annual rate of increase-Urban	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Total households	78,771	82,655	86,734	91,019	95,521	100,250	105,219	110,440
Urban households	11,744	12,110	12,488	12,878	13,279	13,694	14,121	14,561
Rural households	67,028	70,545	74,246	78,142	82,242	86,557	91,099	95,878

Note: Projections derived from 1999 Population Census and 2005/06 HIES.

Table 6: Household Final Consumption Expenditure at Current and Constant 2004 Prices (Classification of Individual Consumption by Purpose)

	Current Prices (SIS Millions)					Constant 2004 Prices (SIS Millions)				
	2003r/	2004r/	2005p/	2006p/	2007p/	2003r/	2004r/	2005p/	2006p/	2007p/
Food	986	1,034	1,142	1,285	1,357	1,075	1,034	1,083	1,133	1,159
Beverages and tobacco	51	56	58	66	72	54	56	59	62	65
Clothing and footwear	32	34	36	43	47	32	34	36	37	39
Housing, water, electricity, gas and fuels	356	380	447	464	470	364	380	399	413	415
Furnishings, household equipment and routine maintenance	55	61	64	73	83	58	61	62	65	68
Health	37	41	48	56	61	39	41	43	45	47
Transport	77	112	170	202	220	83	112	146	164	171
Leisure, entertainment and culture	13	15	17	23	24	14	15	15	16	17
Education	74	84	97	104	109	80	84	87	91	95
Hotels, cafes and restaurants	16	18	20	23	25	17	18	19	20	21
Miscellaneous goods and services	43	48	53	67	70	46	48	50	52	55
Total HFCE	1,741	1,884	2,152	2,405	2,536	1,863	1,884	2,000	2,098	2,152

Table 7: NPISH Final Consumption Expenditure (Classification of the Purposes of NPISH)

	Current Prices (SIS Millions)		Constant 2004 Prices (SIS Millions)	
	2003r/	2004r/	2003r/	2004r/
Research and scientific services	3	4	4	4
Education services	39	44	42	44
Health services	9	10	10	10
Welfare services	6	7	7	7
Recreational, cultural and related services	26	25	28	25
Religious services	44	38	47	38
Professional, labor and civic services	6	7	6	7
Miscellaneous services	-	-	-	-
Total NPISH FCE	134	135	143	135

APPENDIX I: Current Price GDP by Industry – Methodology Summary

Agriculture

1. The coverage of the Business Surveys of formal sector businesses seems to be reasonable, although adjustments were required for 2003 gross output estimates. The formal sector is very small at present, accounting for only 1.4% of agriculture value added in 2004. A major oil palm plantation restarted production during 2006 and this has increased the contribution of the formal sector. In addition to formally registered and surveyed businesses, estimates have been made for large scale copra and rice plantations and for small scale plantations of copra and cocoa for 2003 and 2004 production estimates based on adjusted BS data. The 2005 and 2006 preliminary gross output estimates are based on the movement in exports of agricultural products in current prices. Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements.
2. The bulk of production is by the informal sector, either for market or own consumption within the producing household. The HIES collected data on the production of food for home consumption. Therefore, the value of food produced and consumed has been used directly, after adjusting for CPI domestic food price and population growth rate movements. Estimates have also been made of gross output of cash crops and other agricultural commodities produced by the informal sector (i.e. food and livestock produced for sale). The methodology for marketed output has been revised using a commodity flow approach, where the sum of agricultural exports, household consumption of food bought or received, and intermediate consumption by businesses, government and non-profit institutions, are adjusted for formal sector production and imports. The HIES provided information that was used to derive intermediate consumption (including fuel inputs) to gross output ratios by industry. So current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements.

Forestry and Logging

3. There are a small number of plantation forestry operators and registered logging businesses included in the BS. Gross output from these formal sector organizations are either exported directly as logs or are input to domestic saw mills (i.e. manufacturing). The formal sector dominates this industry, accounting for 97.1% of logging industry value added in 2004. The 2003 and 2004 production estimates are based on adjusted BS data, while 2005 and 2006 preliminary gross output estimates are based on the movement in exported logs in current prices. Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements.
4. Informal sector gross output estimates are based on household final consumption expenditure (HFCE) on firewood – both marketed and for own consumption, and inputs to informal sector timber and handicraft industries. Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements.

Fishing

5. Formal sector production data are sourced from the BS, with the sector accounting for 59.3% of fishing value added in 2004. Gross output from these formal sector organizations are either exported directly fresh or frozen or are input to domestic canning, drying or smoking of fish (i.e. manufacturing). Estimates for 2003 and 2004 are based on BS data, while preliminary estimates for 2005 and 2006 are based on fresh and frozen fish exports and intermediate consumption data (i.e. input to canning, drying

or smoking of fish). Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements.

6. The remainder of gross output is fish catch by the informal sector for own consumption and sale in domestic markets. The methodology for marketed output has been revised using a commodity flow approach, where the sum of fish exports, household consumption of fish bought or received, and intermediate consumption by businesses, government and non-profit institutions, are adjusted for formal sector production and imports. HIES data were used to derive intermediate consumption (including fuel inputs) to gross output ratios by industry. So current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements.

Mining and Quarrying

7. Mining is mainly a formal sector activity, with BS respondents accounting for 69.1% of mining value added in 2004. Estimates for 2003 and 2004 are based on BS data, while preliminary estimates for 2005 and 2006 are based on current price exports value of gold movements. Informal sector production estimates are derived as the difference between exports and formal sector production.

Manufacturing

8. Manufacturing is predominately a formal sector activity, with BS respondents accounting for 95.7% of value added in 2004. Estimates for 2003 and 2004 are based on BS results. For 2005 and 2006 gross output estimates are based on constant 2004 price estimates adjusted to current prices using various price indexes, including:

- Local food CPI for food manufacturing;
- Local beverages and tobacco CPI for beverages and tobacco manufacturing;
- A composite timber export and CPI price index for timber manufacturing;
- Printed materials CPI movements for printing and publishing;
- CPI movements for chemical and rubber products for chemical and rubber manufacturing;
- CPI movements in bricks and cement for non-metallic products manufacturing;
- CPI movements in metal products for metallic products manufacturing; and
- A composite manufacturing price index of the industries above to adjust other manufacturing.

9. Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements. The value added estimates are then derived as the difference between current price gross output and intermediate consumption. The estimates are then cross-checked for reasonableness using the current price value added per worker – using SINPF employment data.

10. Informal sector gross output is derived using a commodity flow approach, where the sum of timber exports, household use of timber for construction and repairs, furniture, and handicrafts, and intermediate consumption by businesses, government and non-profit institutions, are adjusted for formal sector production and imports. Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements. The value added estimates are then derived as the difference between current price gross output and intermediate consumption.

Electricity and Water

11. Electricity and water supply are formal sector activities, with 2003 and 2004 production estimates being based directly on BS results. For 2005 and 2006, current price estimates are based on constant price estimates adjusted using the CPI price indexes for electricity and water. As there are only two suppliers, it is recommended that SISO collect annual data on current value of output, as well as quantity supplied and prices paid by each client group - businesses, government and households - on a more timely basis.

Construction

12. The coverage of the construction activity by the BS formal sector businesses is considered reasonable. The formal sector accounted for 44.8% of construction value added in 2004 and the data reported in the survey looked reasonable. The 2003 and 2004 production estimates are based directly on BS results. Informal sector gross output for 2003 and 2004 is derived using a commodity flow approach, where the sum of: dwelling construction, improvements and repairs (adjusted HIES data); and business, government and NPI construction expenditure; are compared with BS construction companies data and imports and domestic production of construction materials. The estimates are then cross-checked for reasonableness using the current price value added per worker – using SINPF employment data.

13. For 2005 and 2006 estimates, the ratio of imports of construction materials to total permanent construction output (excluding traditional dwellings) in 2004 has been used to derive total permanent construction output for 2005 and 2006 based on imports of construction materials for those years. Estimates for traditional dwellings are based on the growth rate in rural household formation adjusted for CPI price increases in timber and other domestic construction materials. Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements. The value added estimates are then derived as the difference between current price gross output and intermediate consumption.

Trade

14. Coverage in the BS is considered good and no adjustments were made for the formal sector. Wholesale and retail trade is predominately a formal sector activity, with BS respondents accounting for 89.2% of value added in 2004. The 2003 and 2004 estimates are based directly on BS results. For 2005 and 2006, formal sector estimates are derived using the ratio between the 2004 BS results and total traded goods, and a current price index of traded goods for 2004 onwards. The estimates are then cross-checked for reasonableness using the current price value added per worker – using SINPF employment data.

15. For the informal sector, trade margins were added for street vendors (e.g. beetle nut, newspapers) and domestic sales of crops, firewood, fish, handicrafts, livestock and poultry produced by the informal sector for 2003 to 2006.

Hotels and Restaurants

16. Estimates for 2003 and 2004 are based on the BS results, with the formal sector accounting for all activity in these industries. The gross output data for 2004 from the survey were adjusted upwards, as there appeared to be deliberate underreporting by hotels (e.g. hotel revenue was declining just when RAMSI and TA activities were increasing). Tourism accounted for 25.5% of gross output and value added in 2004, with the remainder resulting from government, household and NPI expenditure, and business intermediate consumption. Estimates for 2005 and 2006 are based on 2004 constant price

estimates rated forward using growth rates in government, household and NPI expenditure and business intermediate consumption, adjusted up using CPI indexes for food away from home and actual rents. The estimates are then cross-checked for reasonableness using the current price value added per worker – using SINPF employment data.

17. Note that there is a hotel tax levied by the Visitors Bureau, although not all hotels charge the tax. It is also unknown how much tax is received by the Visitors Bureau as it is a statutory body and not included in either the BS data or the SIG accounts. No estimate is included for the value of the hotel tax.

Transport and Storage

18. Formal sector estimates for 2003 and 2004 were sourced directly from BS data, no adjustments were considered necessary. Formal sector transport and storage businesses accounted for 45.9% of value added in 2004. Provisional estimates for 2005 and 2006 are based on FET data and volume data collected by CBSI from the SI Port Authority on cargo handled and Solomon Airlines on number of passengers to derive constant price estimates, that are then rated up using the transport CPI price movements. It is recommended that the estimates be cross-checked for reasonableness using the current price value added per worker – using SINPF employment data for the transport and storage industries.

19. Informal sector estimates include the value added of transport services provided by buses, pick-ups, taxis, trucks and outboard motor canoes. These are provided by informal sector businesses, mostly owner-operators, and are outside the scope of the BS. The estimates for 2003 onwards are based on annual registration data for buses and taxis, and estimates of revenue and operation costs per vehicle. Estimates for pick-ups and trucks are based on freight transport margins adjusted for formal sector domestic transport. Informal sector water transport of passengers and freight estimates are based on the number of canoes with outboard motors from the Village Resources Survey 1995/96 extrapolated forward using imports of outboard motors and assumptions on the proportion of canoes used for transport, number of trips, number of passengers per trip and the price per trip. Current price intermediate consumption estimates are estimated separately and include adjustments for fuel price movements. The value added estimates are then derived as the difference between current price gross output and intermediate consumption.

Communications

20. All communication services are provided by the formal sector. Current price production estimates for 2003 and 2004 were sourced directly from BS data. No adjustments were considered necessary. For 2005 and 2006 the provisional estimates were derived from constant 2004 price estimates adjusted for price movements in the communications CPI sub-group. As there are only two organizations providing communication services, it is recommended that SISO collect annual data on current value of sales, as well as quantity supplied and prices paid by each client group (i.e. businesses, government and households) on a more timely basis.

Financial Intermediation

21. The estimates for this industry were sourced directly from BS data for 2003 and 2004, which includes CBSI, commercial banks and credit unions. The HIES expenditure and income data shows that there is informal sector activity in this industry (e.g. interest paid and loan repayments to money lenders of around SI\$ 1.1 million). No adjustment was made for this during the mission, as further investigation is required. Output of the commercial banks is derived as the sum of actual fees for services provided plus an estimate for services indirectly charged. The latter is estimated as the

difference between interest received and interest paid and called bank service charges. There are insufficient data to estimate the preferred measure, Financial Intermediation Services Indirectly Measured (FISIM). The bank service charge is not allocated to users (i.e. industries and final consumers). Rather, it is added to the sum of industry values added and shown in the summary table.

22. Current price value added estimates for 2005 and 2006 are provisional and based on the 2004 ratio of value added to deposits and loans values, rated forward using values of deposits and loans for 2005 and 2006. The estimates were cross-checked for reasonableness using the current price value added per worker – using SINPF employment data. The mission did not have access to actual financial data for those years. There should normally be no need to develop estimates for this industry as timely annual income and expense statements for CBSI, banks and credit unions should be available from CBSI within six months following the reference year. If necessary, the mission recommends using the value of loans and weighted loan interest rates to derive interest received, the value deposits and weighted deposit interest rates to derive interest paid, and the movement in the total value of deposits and loans to derive other service charges.

Insurance Services

23. The 2003 and 2004 output of insurance companies has been estimated as a service charge, using data obtained from the Controller of Insurance on premiums earned, reinsurance flows and claims paid. For 2005 and 2006, the estimates are provisional as they were rated forward using the current price movement in financial intermediation value added after the mission was completed. Access to detailed source data would be required in order to develop more suitable indicators for various insurance components. As there are very few insurance businesses, it is recommended that they be included in the BS and asked to provide the data directly.

Real Estate

24. There are a small number of realtors included in the BS frame, presumably including rental payments for commercial properties, although most commercial properties are owner-occupied. Estimates have been made of the value of rental paid by households, using HIES rent and pay data of SI\$ 25 million in 2005/06, adjusted for CPI actual rents index and growth in urban household formation. According to the HIES data imputed rents for “rent but occupy free of charge” housing were an estimated SI\$ 22 million. Most SIG employees are provided rent-free housing and an estimate is implicitly included for them (SIG rent paid is SI\$ 6 million in the SIG accounts for 2004). This value is also included in compensation of employees for Public Administration. The remainder of “rent but occupy free of charge” rents are also included here as rents paid for by private sector employers. Separate estimates are made for rentals to expatriates and Solomon Islanders, due to the significant difference in rentals paid. Intermediate consumption and consumption of fixed capital are estimated at 10% and 5% of gross output respectively, with operating surplus as the balancing item. Separate employment data for the real estate industry are not available for cross-checks and SINPF should be approached for separate estimates of contributors from this industry.

Owner-occupied Dwellings

25. Value added estimates for owner-occupied dwellings are implicitly generated by the “rental services” produced by dwellings occupied by their owners and is included in GDP. Output is estimated as the value of imputed rentals. The value of rentals produced is also included in final consumption expenditure of households, in GDP by expenditure share. The number of owner-occupied dwellings is derived from the 1999 Population Census and the HIES. The number of dwellings is rated forward using household formation projections based on the annualized rate of change between the Census and

the HIES. The HIES data provides information on the number of households in rented dwellings. From this information it has been estimated that all rural dwellings, all urban dwellings of traditional construction, and roughly half of permanent urban dwellings are owner-occupied. This proportional estimate has been applied for 2003 onwards.

26. Based on CPI actual rents and local knowledge on rental values, separate rent series have been estimated for dwellings of traditional construction in rural and urban areas, and for permanent dwellings in rural and urban areas (i.e. four component series). Intermediate consumption is currently estimated at 10% of the value of gross output, consumption of fixed capital (similar to depreciation) is estimated at 5% of gross output, with operating surplus as the balancing item.

Business Services

27. All business services are provided by the formal sector. Coverage in the BS frame is considered good, and 2003 and 2004 estimates have been based directly on the survey results. No adjustments have been made. The provisional estimates are based on constant 2004 price estimates adjusted for the all items CPI price movements since 2004. Separate employment data for the business services industry are not available for cross-checks and SINPF should be approached for separate estimates of contributors from this industry.

Public Administration and Defense

28. Actual expenditure by the Government on wages, salaries and supplements are used for value added estimates in 2003 and 2004. Separate estimates have been developed for Public Administration, Police and National Security, Education, and Health. The first two estimates are shown as Public Administration and Defense in the NA statistical tables. The last two are added to GVA estimates for Education and Health respectively. Separating these components also allows for separate estimation in the constant price series, where the value added per employee may differ across different government activities, and growth in employment may occur at different rates in the different industries (assuming employment data are used as volume indicators).

29. The SIG accounts include payroll costs paid to SIG employees of central government departments outposted to provincial government offices. This does not cover employees directly employed by the provincial governments, who are paid out of the grants paid by the SIG to provincial governments. The value of grants is analyzed by cost component using the breakdown from the Western Province Provincial Government's accounts. Items of compensation of employees are identified in the accounts and a proportion applied to the total grant to all provincial governments. Intermediate consumption is estimated as the residual value of the grant, after deducting the estimate of compensation of employees. This assumes that all provincial governments' accounts are similar in expenditure pattern to the Western Province, and that the grants are all used for current expenditures (i.e. there are no capital expenditures made from the SIG grants).

30. While the development budget of the SIG is large, there are no definitive data on the actual expenditures against the development budget, in part because much of the funding is not directed through SIG accounts. As a result, this component of GDP is weak. For the estimates made in this report, the value for compensation of employees is estimated as 50% of the recurrent budget value.

31. The provisional estimates for 2005 and 2006 are based on compensation of employees data sourced from the "Fiscal" Excel worksheets compiled by IMF mission staff, as the MSA did not have access to the SIG accounts data for those years. SISO should be more proactive in accessing SIG

accounts data on a more timely basis in order to produce Government Finance Statistics (GFS) as well as to use for national accounts compilation purposes.

Education

32. For 2003 and 2004, gross output and value added estimates for Education are sourced from SIG accounts for education services provided by government, BS data for private sector education services, and the NPI survey data for education services provided by non-profit institutions. After adjustments are made to avoid double counting, HFCE education expenditure is added to total output, with the average industry value added to output ratio being applied to derive the value added for this final component. For 2005 and 2006, a weighted current price output index based on government expenditure and HFCE has been used to derive provisional value added estimates. The estimates are then cross-checked for reasonableness using the current price value added per worker – using SINPF employment data.

Health

33. For 2003 and 2004, gross output and value added estimates for Health are sourced from SIG accounts for health services provided by government, BS data for private sector health services, and the NPI survey data for health services provided by non-profit institutions. After adjustments are made to avoid double counting, HFCE medical expenditure is added to total output, with the average industry value added to output ratio being applied to derive the value added for this component. For 2005 and 2006, a weighted current price output index based on government expenditure and HFCE has been used to derive provisional value added estimates. The estimates are then cross-checked for reasonableness using the current price value added per worker – using SINPF employment data.

Other Services

34. Other services include a number of smaller industries providing services to embassies, households, government, international organizations and non-profit institutions (e.g. churches), with services being provided by both formal and informal sector providers. The formal sector value added estimates for 2003 and 2004 were sourced directly from the BS and NPI survey data. For 2005 and 2006, provisional estimates were extrapolated using the movement in final consumption expenditure.

35. For the informal sector, HIES data on income earned from services provided to other households (including domestic servants), adjusted for population growth rates and the CPI index for other services have been used, as well as a smaller estimate for local staff employed by embassies and international organizations.

Taxes on Production and Products

36. Taxes on production and products are the main source of domestic revenue for the SIG. For 2003 and 2004 estimates of taxes on production, industry level data were collected in the BS. However, the sum of the BS data was less than that recorded as receipts by government. Adjustments were made to reconcile payments recorded in the BS to receipts recorded in the SIG accounts for both years. The adjustments were made separately for industry specific taxes and for other taxes. Where possible, the SIG receipts were allocated directly to the appropriate industry (e.g. for alcohol and tobacco excise duties to manufacturing). For “goods” and “sales” taxes, estimates were made of what each industry should have recorded as paid to SIG, based on the relevant rate of tax and turnover, where appropriate. These estimates were then reconciled to SIG receipts.

37. For excise duties, the final values were added to gross outputs and taxes on production on the assumption that the BS outputs of industries were recorded exclusive of excise taxes. This assumption is based on the analysis of the BS returns for a sample of businesses. However, it is not definitive and ideally SISO should contact a number of the key tax payers to confirm the treatment in their survey returns. For other taxes the counter-entry was intermediate consumption, on the assumption that these taxes had been misclassified in the Business Survey responses.

38. The value of import duties has been added to the sum of industry values added and shown in the summary GDP table as “Taxes on products”. These taxes are not paid out of industry value added, but are included in the costs of final and intermediate consumption (and the income measure of GDP) and therefore need to be included in GDP.

39. For 2005 and 2006, the provisional estimates are sourced from the “Fiscal” Excel worksheets compiled by IMF mission staff, as the MSA did not have access to the SIG accounts data for those years.

Bank Service Charges

40. Because a part of commercial banks’ gross output has been imputed (that part for which explicit fees are not charged) an adjustment is needed to record the imputed bank service charges. This is done by included a “nominal industry” which simply shows value of intermediate consumption equal to the value of the imputed service charge, with zero gross output and consequently a negative operating surplus and value added. The negative value added of the nominal industry is added to the sum of industry values added and taxes on products to derive GDP.

Cross-checks

41. Once the initial current price estimates for each industry have been produced, the contribution of each industry to GDP over time is checked for reasonableness and any unexpected changes are investigated. Cross-checks are also made between output and expenditure side estimates in order to reduce the statistical discrepancy.

APPENDIX II: Expenditure Measure of GDP – Methodology Summary

42. The MSA has expanded and revised the methodology documented in the previous mission report. Compilation methods for 2003 and 2004 were reviewed and improvements made, where appropriate. New methods were developed to produce preliminary estimates for 2005 and 2006 for a number of expenditure components. There was insufficient time during the mission to produce preliminary estimates for the remainder of expenditure components, and the estimates for these components are illustrative and provisional only. With the exception of preliminary HFCE estimates, no attempt was made to produce estimates for 2007, as source data were not available.

43. The mission spent a significant amount of time developing the methodology for various expenditure components. However, the range of data available are limited and there are concerns over the quality and coverage of some data. Therefore, GDP(E) - the expenditure based measure of GDP - is considered statistically weaker than GDP(P) - the production based measure. For this reason the statistical discrepancy has been included on the expenditure side, so that GDP(E) equals GDP(P).

Household Final Consumption Expenditure

44. HFCE estimates for 2003 to 2007 were produced using reasonably detailed HIES data for 2005/06, adjusted for changes in volumes and prices. The methodology has been refined since the previous mission. The published HIES includes values imputed for home production and consumption of food and dwelling rentals. There is no documentation available at SISO to explain how these estimates were developed. After compared the HIES data on household food production and consumption, the data were considered reasonably fit for purpose and accepted as the best available. The imputed owner-occupied housing rental values from the HIES were considered too low, when the survey results for the average actual rents per rented dwelling with the equivalent imputed rents for similar sized and built owner-occupied dwellings. The HIES data have been replaced by the estimates made for the industry accounts.

45. HFCE estimates have been produced at the sub-group level used in the HIES survey, with more detailed estimates being compiled for some expenditure items in order to produce HFCE estimates based on the *Classification of Individual Consumption by Purpose* (COICOP). The expenditure components estimated include:

- Food – with separate estimates for food bought (HIES data adjusted for total population growth rate changes and CPI food price index) – imported food (using adjusted food imports' current value data) and domestic food produced for sale (residual); and domestic food produced for own consumption (based on HIES data adjusted for rural population growth rates and the CPI domestic food price index – adjusted for rural versus urban price levels);
- Beverages and tobacco (HIES data adjusted for total population growth rate changes and CPI beverages and tobacco price index);
- Clothing and footwear (HIES data adjusted for total population growth rate changes and CPI clothing and footwear price index);
- Housing and utilities – with separate estimates for actual rents (HIES data adjusted for urban household formation growth rate changes and CPI rents index), imputed rents (data from production account), and utilities (HIES data adjusted for total household formation growth rate changes and CPI household operations price index);

- Household other – with separate estimates for furnishings and household equipment (HIES data adjusted for total household formation growth rate changes and CPI household equipment and furnishings price index), and routine maintenance and repairs (HIES data adjusted for total household formation growth rate changes and CPI household repairs and maintenance price index);
- Health (HIES data adjusted for total population growth rate changes and CPI medical price index);
- Transport (HIES data adjusted for total population growth rate changes and CPI transport price index, and imports of transport vehicles for domestic use);
- Leisure, entertainment and culture (HIES data adjusted for total population growth rate changes and CPI recreation price index);
- Education (HIES data adjusted for total population growth rate changes and CPI education price index);
- Hotels, cafes and restaurants – with separate estimates for food away from home and catering (HIES data adjusted for total population growth rate changes and CPI food away from home price index), and accommodation services (HIES data adjusted for urban population growth rate changes and CPI actual rents index); and
- Miscellaneous goods and services – with separate estimates for communications (HIES data adjusted for total population growth rate changes and CPI communication price index), other goods (HIES data adjusted for total population growth rate changes and CPI miscellaneous goods price index), and other services (HIES data adjusted for total population growth rate changes and the CPI price index for recreation, education and health).

46. Given the significant contribution of this expenditure component to GDP(E), further refinement of the methodology is recommended, using more detailed HIES expenditure item data (e.g. domestically produced versus imported) and CPI price indexes (e.g. domestic versus import prices, expenditure class indexes), as well as investigating more appropriate volume movement indicators.

Final consumption expenditure of NPISH

47. Final consumption expenditure of NPISH for 2003 and 2004 are based on consumption expenditure data collected in the NPI survey. Using the NPI survey results, the mission also developed NPISH FCE estimates by purpose - based on the *Classification of the Purposes of NPISH*. Provisional estimates for 2005 and 2006 have been extrapolated using HFCE current price value movements (i.e. assuming a fixed relationship between NPI expenditure on households and HFCE). Further work is required to develop a better methodology.

48. The key to improving these estimates is to significantly improve the timeliness of the NPI survey, so that actual reported data are available for use. For the most recent year's estimates, further investigation is required to identify more suitable growth indicators, as NPI consumption expenditure is influenced by numerous factors, including assistance programs of various development partners, household remittances to churches and other charity organizations, etc.

Government Final Consumption Expenditure

49. GFCE estimates for 2003 and 2004 are sourced directly from the SIG financial accounts and derived as the sum of:

- compensation of employees, from the industry accounts;
- grants paid to provincial government;

- intermediate consumption of goods and services from the SISO GFS tables; and
- an estimate of the development budget's FCE.

50. The latter estimate is based on the value of total development budget expenditure (IMF Article IV) less the proportion that comprises capital formation and non-GFCE expenditures (transfer payments, TA costs, etc.). The GFCE component is derived using the proportions of planned expenditure as indicated in the 2004 Development Budget.

51. The provisional estimates for 2005 and 2006 are based on data sourced from the "Fiscal" Excel worksheets compiled by IMF mission staff, as the MSA did not have access to the SIG accounts data for those years.

Gross Fixed Capital Formation

52. Estimates for 2003 to 2006 of total gross fixed capital formation (GFCF) have been based on supply-side estimates of construction and durable equipment derived primarily from imports data on construction materials, machinery and transport equipment. Customs' imports data, summarized at the 4-digit level of the Harmonized System, were analyzed and those items considered as capital goods summed, including items that are intermediate goods for the construction industry and would be used in the construction of capital goods (e.g. cement, nails, timber). Building materials have all been included as capital, since all dwelling construction is included in GFCF (some will be used for repairs and maintenance but not considered significant). For transport and equipment imports only a proportion of the goods have been included as capital goods, since some of those goods will also be purchased by households (e.g. cars, outboard motors). The HIES expenditure data was used to determine the household durable goods proportion to deduct from total imports of the same goods.

53. Trade margins have been added for some items of imported capital goods. It is believed that most large items of machinery are imported directly by the owner, not through a distributor. Therefore, no margins were added for those items. The value added of construction activities has then been added to derive total GFCF values.

54. Basic demand-side estimates have also been made to provide a cross-check against the supply-side total. The cross-check indicates that the supply-side estimates are reasonable, but should be used with caution. The demand-side estimates comprise:

- Recurrent government expenditure, based on the SIG accounts (GFCF as shown by the SISO GFS tables);
- An estimate of the value of development budget GFCF;
- Private sector and government market units and statutory bodies, based on the BS and NPI capital expenditure survey questions; and
- An estimate for the informal sector based on HIES data on construction and significant dwelling improvements.

55. There are currently no estimates of working livestock (e.g. stud animals, dairy cows) or other components of GFCF. Further MSA or other TA will be necessary to assist SISO in developing more comprehensive GFCF estimates over the medium-term.

Change in Inventories

56. Change in inventories in 2003 and 2004 were based directly on BS data. No separate estimate has yet been made for forestry stock changes, as no data are available. An assumption has been made that there is no changes in inventories held by informal sector producers (e.g. poultry, livestock, crops). This needs to be investigated further. Provisional estimates for 2005 and 2006 are extrapolations based on the change in current price value added for mining, manufacturing, and trade industries. Further development work is needed to identify data sources that provide better proxy indicators.

Exports of Goods and Services

57. The exports of goods estimates for 2003 to 2006 are based on SISO trade statistics, sourced from Customs Department trade data. While there are some concerns about the undervaluation of some exports (e.g. logs and timber), the values – when added to domestic demand values - were comparable to gross output values on the production side. Exports of services estimates are taken directly from the Balance of Payments, which are based on FET data. Given the coverage limitations of FET data, it is likely that exports (and imports) of services are underestimated.

Imports of Goods and Services

58. Imports of goods are derived from the SISO trade statistics, sourced from the Customs Department. An adjustment was made for the value of fuel imports which was grossly under-reported in the Customs data for 2004 by the previous mission. The adjustment was based on the value of purchases of goods for resale recorded in the BS by the two fuel distributors. However, the MSA reduced the size of the adjustment after being informed that fuel was also being imported directly by some fishing and logging companies.

59. There are a number of other coverage and valuation issues relating to imports of goods. The significant difference between retail prices and import prices cannot be explained by import duties, other taxes and trade margins. There appears to be undervaluation of most dutiable imports. In addition, it appears that the imports of development assistance in-kind and imports by the RAMSI were not included in the SISO statistics. As a result, the mission made coverage and valuation adjustments for imports of goods for both 2003 and 2004. For 2005 and 2006, coverage adjustments were only made for in-kind development assistance. Imports of services estimates are taken directly from the Balance of Payments, which are based on FET data.

Statistical Discrepancy

60. Once the initial estimates were compiled for the expenditure components, cross-checks were made between output and expenditure side estimates in order to identify inconsistencies and improve the statistical discrepancy. This resulted in further adjustments being made to HFCE, GFCF and imports of goods. The statistical discrepancy between GDP(P) and GDP(E) in current prices was reduced to -0.2% and -0.5% for 2003 and 2004 respectively. The statistical discrepancy for 2005 and 2006 is much higher, at -3.3% and -7.1% respectively, as source data were more limited and it was harder to identify which expenditure and production components were being over or underestimated.

APPENDIX III: Constant Price GDP by Industry – Methodology Summary

Agriculture

61. Formal sector constant 2004 price estimates have been compiled separately for copra, cocoa, palm and rice plantations, using volume of production data to extrapolate base year value added (from the nominal GDP calculations, based on volumes time price). The constant 2004 price estimate of agricultural food crops produced by the informal sector, either for own consumption or for cash sale, has been derived by deflating gross output in current prices using the domestic food CPI. Value added is then calculated using the 2004 value added to gross output ratio.

Forestry and Logging

62. Forestry and logging gross output estimates are based on volume extrapolation with 2004 as the base period, using the volume of logs produced for domestic use (e.g. furniture, handicrafts, timber for construction) and exports. In order to calculate total log production, timber for domestic use or exports has been converted to logs using a ratio of 0.72 cm of timber to 1.00 cm of logs. Gross output for firewood is estimated by deflating the current price output estimates using the CPI firewood price index movements. Value added has then been calculated using the 2004 value added to gross output ratio.

Fishing

63. Constant price gross output estimates for formal sector fishing are based on volume extrapolation of fish exports. For the informal sector, subsistence fishing estimates are extrapolated using the population growth rate and estimates for fishing for domestic sale are derived from current price values deflated by the CPI fish price index. Value added is then calculated using the 2004 value added to gross output ratio.

Mining

64. Gross output for gold mining has been estimated using volume data for gold exports. Because the only large scale mine in SI was not operating in 2004, an estimate of value added per gram of gold extracted has been derived from the financial statements of a gold mining company operating in Fiji (assumes similar processes, quality, productivity, etc). Value added is then calculated using the 2004 value added to gross output ratio.

Manufacturing

65. Formal sector gross output estimates for 2003 are based on the more detailed industry level current price estimates deflated using the various CPI sub-group or expenditure class price indexes discussed in the section above on current price estimates for manufacturing. The 2005 and 2006 estimates have also been compiled at a more detailed industry level using various methods, including:

- Constant price value movements in HFCE food bought for food manufacturing;
- Constant price value movements in HFCE beverages and tobacco for beverages and tobacco manufacturing;
- Volume of timber production for wood products manufacturing;
- Population growth rates for printing and publishing;
- Constant price value movements in GFCF construction for chemical and rubber manufacturing (mainly produce paint), non-metallic products manufacturing (mainly bricks and concrete); and metallic products manufacturing (mainly nails, plumbing, electrical wire, etc.); and

- Constant price movements in manufacturing, excluding food manufacturing, for other manufacturing industries.

66. Value added is then calculated using the 2004 value added to gross output ratio for each manufacturing industry. The estimates are then cross-checked for reasonableness using the constant price value added per worker – using SINPF employment data.

67. Informal sector gross output is derived by deflating the current price output values by a composite timber price index (i.e. CPI and export prices). Value added is then calculated using the 2004 value added to gross output ratio for the wood products manufacturing industry.

Electricity and Water

68. Gross output estimates for electricity are based on volume changes in kilowatts of electricity supply. Value added is then calculated using the 2004 value added to gross output ratio. The gross output estimate for water supply for 2003 was estimated by deflating the current price estimate using the CPI water price index. For 2005 and 2006, the percentage change (3.7%) between the constant price estimates for 2003 and 2004 has been used. It is recommended that SISO collect volume of water supply data directly from the sole supplier. Value added is then calculated using the 2004 value added to gross output ratio.

Construction

69. Construction gross output estimates are based on the current price estimates deflated using the GFCF construction implicit price deflator. Value added is then calculated using the 2004 value added to gross output ratio.

Trade

70. Formal sector estimates are derived using the ratio between the 2004 BS results and total traded goods, and a constant price index of traded goods for 2003 onwards. The estimates are then cross-checked for reasonableness using the constant price value added per worker – using SINPF employment data.

71. Informal sector estimates for street vendors' margins are the current price values deflated by the all items CPI movement. For other informal sector retailers, the 2004 margin is applied to the constant price value of agricultural commodities, firewood, fish and handicrafts produced by the informal sector for domestic sale.

Restaurants and Hotels

72. Estimates for 2003 are derived by deflating the current price BS results by the movement in the CPI indexes for food away from home and actual rents between 2003 and 2004. The estimates for 2005 and 2006 are based on 2004 constant price estimates rated forward using the estimated constant price growth rates in government, household and NPI expenditure and business intermediate consumption. Value added is then calculated using the 2004 value added to gross output ratio. The estimates are then cross-checked for reasonableness using the constant price value added per worker – using SINPF employment data.

Transport and Storage

73. Value added estimates have been calculated using the 2004 value added to gross output ratio applied to the constant price gross output estimates. Constant price gross output estimates are based on volume extrapolation for:

- SI Ports Authority – volume of cargo handled;
- SI Airlines – passenger numbers;
- Informal sector transport – total population growth rate; and
- Remainder of transport (domestic shipping, freight forwarders, etc) – composite index of the above components of transport plus wholesale and retail trade (assumes that transport services related to the movement mainly of goods within SI).

Communication

74. Value added estimates have been calculated using the 2004 value added to gross output ratio applied to the constant price gross output estimates. Constant price gross output estimates are based on volume extrapolation for Telecom SI – using the composite of number of radio telephone calls made and number of telexes sent - and for SI Post – using the composite of weight of mail handled and number of telephone connections.

Financial Intermediation

75. Estimates for 2003 onwards have been derived from current price estimates deflated using the all items CPI movements between 2004 and the relevant years. Information on service charges, average interest rates data by type of deposit and loan, as well as relative composition of deposits and loans is required to develop more suitable composite deflators. In a period of strong growth in the financial sector, where the number of employees does not increase at a similar rate (e.g. due to technological advances, mergers, etc.), using employment to derive constant price values is not suitable.

Insurance

76. The estimates for 2003 are based on the current price values deflated using the all items CPI movement between 2003 and 2004. For 2005 and 2006, the estimates are provisional as they were rated forward using the current price movement in financial intermediation value added after the mission was completed. Further investigation is required to identify more suitable indicators to measure constant price changes.

Real Estate

77. The estimates for 2003 are based on the current price values deflated using the CPI rents index movement between 2003 and 2004. For 2005 and 2006, the estimates are provisional as they were rated forward using the constant price movements in the HFCE actual rents component.

Owner-occupied Dwellings

78. The estimates for 2003 are based on the current price values deflated using the CPI rents index movement between 2003 and 2004. For 2005 and 2006, the estimates are rated forward using the constant price movements in the HFCE owner-occupied imputed rents component.

Business Services

79. The estimates for 2003 are based on the current price values deflated using the all items CPI movement between 2003 and 2004. For 2005 and 2006, the estimates are rated forward from 2004 using the change in the sum of constant price value added for mining, manufacturing, electricity and water, construction and services industries.

Public Administration and Defense

80. Constant 2004 price value added estimates for 2003 and for 2005 onwards are based on 2004 value added per worker being applied to Government employment data.

Education

81. The estimates for 2003 onwards are based on the current price values deflated using the CPI education services price index movements between 2004 and the reference year.

Health

82. The estimates for 2003 onwards are based on the current price values deflated using the CPI medical price index movement between 2004 and the reference year.

Other Services

83. The estimates for 2003 onwards are based on the current price values deflated using the CPI price index movements for personal and other services between 2004 and the reference year.

Taxes on Production and Products

84. Taxes on production and products are extrapolated using the constant price growth rate in GDP at factor cost.

Bank Service Charges

85. Bank service charges are extrapolated using the constant price growth rate in GDP at factor cost.

Household Final Consumption Expenditure

86. HFCE constant price estimates have been produced at the sub-group level using various indicators, for:

- Food – with separate estimates for food bought (HIES data adjusted for total population growth rate changes) – imported food (using adjusted food imports' current value data deflated using the imported food CPI index movements) and domestic food produced for sale (residual); and domestic food produced for own consumption (based on HIES data adjusted for rural population growth rates);
- Beverages and tobacco (HIES data adjusted for total population growth rate changes);
- Clothing and footwear (HIES data adjusted for total population growth rate changes);
- Housing and utilities – with separate estimates for actual rents (HIES data adjusted for urban household formation growth rate changes), imputed rents (data from production account), and utilities (HIES data adjusted for total household formation growth rate changes);

- Household other – with separate estimates for furnishings and household equipment, and routine maintenance and repairs (HIES data adjusted for total household formation growth rate changes);
- Health (HIES data adjusted for total population growth rate changes);
- Transport (HIES data adjusted for total population growth rate changes, and the constant price movements for imports of transport and machinery);
- Leisure, entertainment and culture (HIES data adjusted for total population growth rate changes);
- Education (HIES data adjusted for total population growth rate changes);
- Hotels, cafes and restaurants – with separate estimates for food away from home and catering (HIES data adjusted for total population growth rate changes), and accommodation services (HIES data adjusted for urban population growth rate changes); and
- Miscellaneous goods and services – with separate estimates for communications, other goods, and other services (HIES data adjusted for total population growth rate changes).

87. Given the significant contribution of this expenditure component to GDP(E), further refinement of the methodology is recommended, using more detailed HIES expenditure item data and CPI price indexes, as well as investigating more appropriate volume movement indicators.

Final consumption expenditure of NPISH

88. Final consumption expenditure of NPISH constant price estimates are based on current price consumption expenditure data by purpose deflated using the relevant CPI sub-group indexes (e.g. CPI sub-group indexes for education, medical, miscellaneous services).

Government Final Consumption Expenditure

89. GFCE constant price estimates are the sum of two component estimates - compensation of employees and other expenditure. The compensation of employees component is based on the 2004 value adjusted for changes in government employment data. The other expenditure component is based on GFCE in current prices less compensation of employees in current prices, deflated using the all items CPI. Further work is required to improve the methodology, such as breaking down other expenditure by type of goods and services in current prices and then deflating the components using best proxy price indexes.

Gross Fixed Capital Formation

90. Constant price estimates for 2003 to 2006 of total gross fixed capital formation (GFCF) are the sum of component constant price estimates, including:

- Traditional dwellings – estimated using the growth rate in the number of traditional dwellings;
- Permanent dwellings and other construction – estimated by deflating the current price value by a composite weighted price index of construction materials and estimated wages;
- Machinery and transport equipment - estimated by deflating the component current price values for vehicles, outboard motors, and other machinery by price indexes for vehicles, outboard motors, and machinery and equipment sourced from the CPI or imports unit price data.

Change in Inventories

91. The change in inventories estimate has been derived by deflating the current price value by the implicit price deflator for manufacturing. Further development work is needed to identify data sources that provide better proxy indicators.

Exports of Goods and Services

92. The exports of goods constant price estimates for 2003 to 2006 are based on the sum of constant price values calculated at the component 1-digit Harmonized System level. The component estimates are derived by either deflating the current price estimates using various price indexes (e.g. CPI beverages and tobacco index, CPI fuel price index, manufacturing and GFCF durable equipment implicit price deflators) or using volume indicators (e.g. volume of agricultural commodities and fish, agricultural production index). Exports of services estimates are based on the current price values deflated using the all items CPI. There was not enough time during the mission to develop better estimates. Further investigation is required to develop more suitable methods for estimating the constant price values (e.g. estimating services at a more detailed level, such as using tourist arrivals for travel services credits).

Imports of Goods and Services

93. The imports of goods constant price estimates for 2003 to 2006 are based on the sum of constant price values calculated at the component 1-digit Harmonized System level. The component estimates are derived by deflating the current price estimates using various price indexes (e.g. CPI imported food index, CPI beverages and tobacco index, CPI fuel price index, CPI chemical and rubber product index, manufacturing and GFCF durable equipment implicit price deflators). Imports of services estimates are based on the current price values deflated using the implicit price deflator for imported goods. There was not enough time during the mission to develop better estimates. Further investigation is required to develop more suitable methods for estimating the constant price values.

Statistical Discrepancy

94. The statistical discrepancy between GDP(P) and GDP(E) in constant prices is -0.9%, -0.5%, 0.1% and -2.6% for 2003 to 2006 respectively. Significantly more effort is required to improve source data and methods in order to produce more robust constant price GDP estimates. This will need more staff and resources for economic statistics, as well as more frequent TA.