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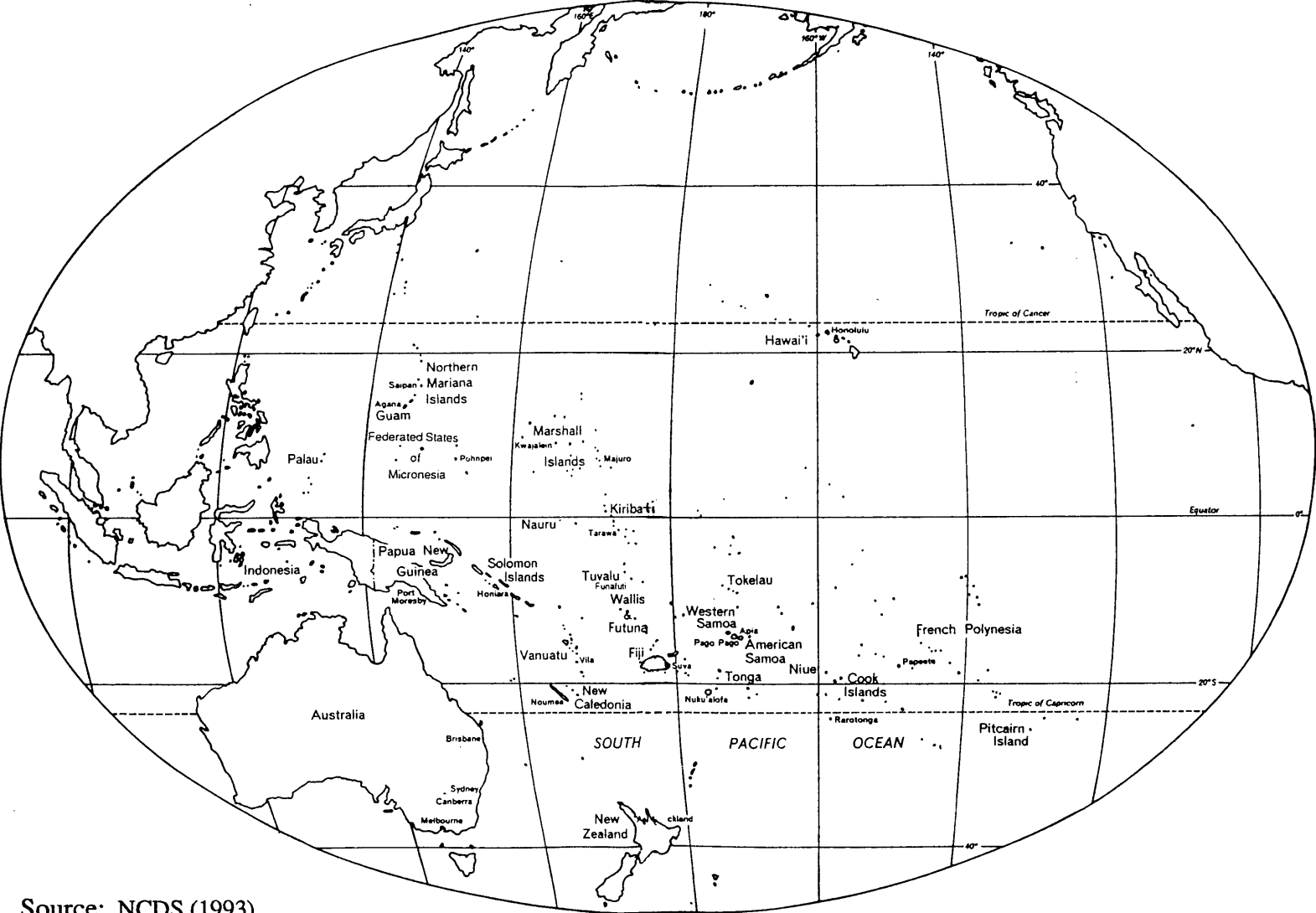
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Appendix 1.1: Location of the selected SPINs



Source: NCDS (1993).

Appendix 1.2: Major socioeconomic indicators of the selected SPINs

Indicators	Fiji	PNG	Solomon Islands	Vanuatu
Land area (km ²)	18 272	462 243	27 556	12 190
Population (millions)	0.75	4.06	0.34	0.16
Per capita GDP (1992 US\$)	2 010	1 098	710	1 220
Major income sectors	agriculture, forestry, mining, fishing, manufacturing, services	agriculture, mining, forestry, fishing, manufacturing, services	agriculture, manufacturing, fishing, services	agriculture, fishing, manufacturing, services
Principal export commodities	sugar & molasses, copra, lumber, coconut oil, gold, fish	coffee, cocoa, copra, palm oil, coconut, tea, marine, gold, copper, logs	palm oil & kernel, copra, cocoa, timber, fish	copra, cocoa, meat (beef), timber
Economy representation	medium and fairly diverse	large and diverse	small and fairly concentrated	small and highly dualistic

Source: Rutherford (1994).

Appendix 5.1: Nominal export values and GDP data for Fiji, PNG and SI, 1960–93

Year	Fiji EXP	PNG EXP	SI EXP	Fiji GDP	PNG GDP	SI GDP
in US\$ millions						
1960	39.1	na	4.2	111.0	na	16.8
1961	33.1	37.0	4.3	120.2	235.0	17.4
1962	39.7	38.6	3.6	130.5	253.0	18.0
1963	55.9	43.2	4.2	148.1	267.4	18.9
1964	65.9	49.7	4.5	159.8	281.4	20.4
1965	53.6	58.8	5.4	167.9	325.3	21.4
1966	49.1	56.5	4.2	172.3	359.4	23.3
1967	53.4	65.4	5.7	186.5	418.3	25.2
1968	56.4	82.9	6.2	188.7	459.5	28.1
1969	61.1	98.9	7.2	206.1	503.3	28.6
1970	71.6	103.4	8.0	220.2	591.4	31.9
1971	71.9	120.8	10.3	246.8	706.7	34.7
1972	79.5	219.9	10.9	316.9	769.0	37.9
1973	93.8	510.6	13.5	426.2	1115.7	50.5
1974	153.6	648.9	26.2	558.7	1495.3	72.9
1975	173.3	440.1	15.5	685.0	1315.4	67.0
1976	136.6	549.7	24.4	695.1	1349.2	74.2
1977	179.2	682.3	32.8	771.0	1782.2	81.5
1978	196.6	711.5	37.7	936.6	2167.0	98.2
1979	257.4	965.3	68.4	1020.5	2491.6	130.1
1980	373.8	1031.7	73.3	1203.3	2766.9	143.9
1981	315.3	839.3	66.2	1237.9	2715.4	161.7
1982	287.2	774.1	58.2	1194.9	2576.2	163.2
1983	241.0	824.2	62.0	1124.2	2572.2	152.4
1984	259.1	919.4	93.1	1179.4	2552.2	175.6
1985	235.7	926.2	70.1	1141.8	2402.6	158.9
1986	275.8	1030.0	66.0	1291.5	2652.0	143.8
1987	309.1	1236.9	64.0	1161.4	3115.1	146.8
1988	311.6	1449.5	81.9	1075.7	3567.7	176.2
1989	426.0	1298.9	75.4	1256.1	3521.9	167.6
1990	494.2	1174.8	70.1	1411.3	3219.7	168.1
1991	449.7	1460.6	83.4	1507.9	3787.7	186.2
1992	434.7	1794.1	101.7	1534.3	4291.9	201.6
1993	na	2483.0	na	na	5088.0	na

Note: na = not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.2: Nominal exchange rates data for Fiji, PNG and SI, 1960–93

Year	Fiji EXR F\$/US\$	PNG EXR Kina/US\$	SI EXR SI\$/US\$
1960	0.7928	na	0.8929
1961	0.7928	0.8957	0.8924
1962	0.7928	0.8940	0.8924
1963	0.7928	0.8965	0.8950
1964	0.7928	0.8990	0.8972
1965	0.7928	0.8977	0.8961
1966	0.7928	0.8986	0.8970
1967	0.7988	0.8989	0.8967
1968	0.8709	0.8989	0.8973
1969	0.8709	0.9001	0.8984
1970	0.8709	0.8979	0.8960
1971	0.8585	0.8802	0.8781
1972	0.8245	0.8387	0.8373
1973	0.7937	0.7045	0.7056
1974	0.8054	0.6955	0.6980
1975	0.8210	0.7632	0.7639
1976	0.8969	0.7923	0.8183
1977	0.9170	0.7911	0.9018
1978	0.8467	0.7084	0.8737
1979	0.8356	0.7116	0.8660
1980	0.8175	0.6704	0.8298
1981	0.8532	0.6724	0.8702
1982	0.9317	0.7375	0.9711
1983	1.0161	0.8341	1.1486
1984	1.0811	0.8942	1.2737
1985	1.1526	1.0000	1.4808
1986	1.1320	0.9713	1.7415
1987	1.2235	0.9081	2.0033
1988	1.4298	0.8667	2.0825
1989	1.4819	0.8558	2.2932
1990	1.4809	0.9554	2.5288
1991	1.4756	0.9520	2.7148
1992	1.5030	0.9646	2.9281
1993	na	0.9784	na

Note: na = not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.3: Nominal WGDP and deflated WCPI data for Fiji, PNG and SI, 1960–93

Year	Fiji WGDP	PNG WGDP	SI WGDP	SPINs ^a WCPI
——— WGDP in US\$ billions ———				
1960	114.60	104.33	41.62	37.7
1961	120.23	110.81	46.71	37.6
1962	129.27	119.71	50.82	37.9
1963	137.62	127.64	55.08	37.3
1964	149.04	138.80	61.43	35.6
1965	162.12	151.39	67.01	36.8
1966	178.18	165.48	73.00	38.4
1967	190.36	175.99	78.33	37.2
1968	207.15	190.81	84.11	37.1
1969	226.50	209.59	95.38	38.1
1970	244.22	229.16	111.37	38.9
1971	268.90	253.51	127.80	38.5
1972	305.85	290.98	156.38	43.9
1973	357.86	347.73	203.98	70.2
1974	393.78	382.26	226.79	73.0
1975	431.92	420.71	251.85	62.3
1976	478.15	460.18	270.29	79.7
1977	538.69	523.26	315.37	81.4
1978	643.34	633.39	413.62	87.4
1979	713.10	713.71	467.19	120.6
1980	786.50	782.27	515.88	131.1
1981	863.39	820.93	512.42	114.6
1982	864.12	816.25	484.15	109.7
1983	919.77	856.84	497.39	111.7
1984	994.92	913.94	503.32	118.8
1985	1051.88	963.76	521.26	100.0
1986	1219.03	1152.53	726.30	102.0
1987	1373.90	1318.23	887.56	137.7
1988	1558.72	1485.67	1042.95	149.3
1989	1623.37	1535.81	1041.43	145.1
1990	1707.82	1663.55	1146.01	139.4
1991	1836.32	1792.05	1258.78	135.8
1992	1942.15	1921.05	1366.81	139.3
1993	2068.67	2007.39	1439.09	147.1

Note: ^a WCPI data is same worldwide, and thus for all the selected SPINs, and were collected as deflated data following (IMF 1992).

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.4: Export performance data for Fiji, PNG and SI, 1961–90

Year	Fiji EXPs	PNG EXPs	SI EXPs
	——— EXP in US\$ millions ———		
1961	33.1	37.0	4.3
1962	39.7	38.6	3.6
1963	55.9	43.2	4.2
1964	65.9	49.7	4.5
1965	53.6	58.8	5.4
1966	49.1	56.5	4.2
1967	53.4	65.4	5.7
1968	56.4	82.9	6.2
1969	61.1	98.9	7.2
1970	71.6	103.4	8.0
1971	71.9	120.8	10.3
1972	79.5	219.9	10.9
1973	93.8	510.6	13.5
1974	153.6	648.9	26.2
1975	173.3	440.1	15.5
1976	136.6	549.7	24.4
1977	179.2	682.3	32.8
1978	196.6	711.5	37.7
1979	257.4	965.3	68.4
1980	373.8	1031.7	73.3
1981	315.3	839.3	66.2
1982	287.2	774.1	58.2
1983	241.0	824.2	62.0
1984	259.1	919.4	93.1
1985	235.7	926.2	70.1
1986	275.8	1030.0	66.0
1987	309.1	1236.9	64.0
1988	311.6	1449.5	81.9
1989	426.0	1298.9	75.4
1990	494.2	1174.8	70.1

Note: Before the empirical analyses, export data were deflated using 1961 = 100 prices as the base year, following Love's (1984) suggestions.

Sources: Various, as described in section 5.3 of Chapter 5 and computed as shown in Chapter 8.

Appendix 5.5: World demand data for Fiji, PNG and SI, 1961–90

Year	Fiji WD	PNG WD	SI WD
1961	6224.00	7172.00	9018.00
1962	6256.75	8230.38	9573.49
1963	7657.04	8981.08	10743.99
1964	8105.41	9242.64	11570.81
1965	7423.39	9067.50	13335.83
1966	7069.31	8966.05	10541.16
1967	6823.62	10549.04	11290.63
1968	6107.91	10306.32	12581.00
1969	5972.99	9263.98	11946.24
1970	5976.58	9834.30	12684.47
1971	5890.50	11167.95	13413.25
1972	6821.81	13033.88	20947.51
1973	7285.41	23086.18	29187.37
1974	14008.91	27751.65	36771.31
1975	19140.74	19180.86	21857.23
1976	14351.52	22617.18	33713.26
1977	16583.80	36959.41	36186.57
1978	18246.56	28611.55	35213.84
1979	23942.73	30760.55	46930.85
1980	26268.23	25891.32	51960.59
1981	20643.73	22336.64	47430.62
1982	17273.49	21538.60	37080.03
1983	18471.91	21914.83	50212.94
1984	17009.70	28670.09	44058.25
1985	14435.17	20207.57	33194.25
1986	16939.66	21744.27	38446.56
1987	22689.29	20993.90	42077.53
1988	25661.08	26770.56	53342.83
1989	17504.61	29693.16	43212.84
1990	20722.57	25426.23	50563.04

Note: Before the empirical analyses, the WD data were deflated using 1961 = 100 prices as the base year, following Love's (1984) suggestions.

Sources: Various, as described in section 5.3 of Chapter 5 and computed as shown in Chapter 8.

Appendix 5.6: Competitiveness data for Fiji, PNG and SI, 1961–90

Year	Fiji CM	PNG CM	SI CM
1961	6224.00	7142.00	8669.00
1962	9104.87	10097.03	7924.98
1963	15778.32	11228.52	9275.79
1964	18090.15	11377.17	8993.03
1965	14234.42	10970.00	10841.83
1966	12916.02	15434.27	8686.14
1967	13360.95	21722.73	10910.76
1968	11351.92	19788.96	11869.01
1969	12823.67	20466.37	14756.72
1970	11553.71	20265.19	19760.12
1971	10811.64	24358.79	24122.88
1972	9496.51	17349.78	47246.36
1973	6854.61	16835.35	19754.17
1974	7480.17	26114.37	42291.17
1975	9442.81	25253.88	29276.30
1976	8449.42	36897.91	66014.51
1977	12027.62	47059.63	50932.28
1978	13952.86	39573.80	40919.69
1979	18521.54	35288.52	76216.96
1980	16992.11	36780.44	109867.40
1981	14008.53	35652.60	99860.65
1982	9971.45	46908.25	61624.08
1983	10680.12	39556.56	113985.90
1984	9621.85	70053.75	85890.46
1985	9334.45	39869.62	82746.50
1986	11275.90	38774.88	102744.30
1987	16240.73	41925.79	77301.38
1988	15161.00	28795.49	92769.63
1989	9527.96	35421.13	71910.75
1990	10890.13	17487.59	52189.66

Note: Before the empirical analyses, the CM data were deflated using 1961 = 100 prices as the base year, following Love's (1984) suggestions.

Sources: Various, as described in section 5.3 of Chapter 5 and computed as shown in Chapter 8.

Appendix 5.7: Diversification data for Fiji, PNG and SI, 1961–90

Year	Fiji DV	PNG DV	SI DV
1961	48.43	34.71	83.18
1962	53.71	37.77	87.04
1963	65.40	37.15	90.17
1964	68.83	36.25	87.21
1965	59.41	35.40	91.89
1966	56.41	36.17	81.69
1967	56.15	41.66	74.42
1968	50.44	37.23	70.30
1969	53.37	33.28	66.04
1970	51.74	32.45	64.67
1971	53.61	33.64	59.01
1972	52.62	51.40	66.50
1973	46.70	60.38	54.87
1974	54.81	54.51	61.94
1975	66.67	61.70	58.55
1976	55.40	41.23	64.55
1977	57.26	38.00	56.17
1978	50.66	35.73	52.36
1979	55.04	34.71	57.14
1980	57.27	28.77	63.82
1981	49.48	29.82	64.55
1982	46.97	29.29	57.03
1983	46.39	29.83	68.89
1984	40.23	28.56	53.00
1985	41.54	25.88	56.70
1986	43.27	28.48	73.47
1987	49.69	31.25	68.99
1988	45.68	38.41	72.02
1989	33.67	35.86	63.44
1990	35.36	34.01	58.72

Note: Before the empirical analyses, the DV data were deflated using 1961 = 100 prices as the base year, following Love's (1984) suggestions.

Sources: Various, as described in section 5.3 of Chapter 5 and computed as shown in Chapter 8.

Appendix 5.8: Commodity export values, quantities and prices for Fiji, 1961–1990

Year	Sugar ^a			Molasses ^a		
	Volumes mt10 ³	Prices F\$/mt	Values F\$10 ³	Volumes mt10 ³	Prices F\$/mt	Values F\$10 ³
1961	132.0	90.1	11893.2	57.4	3.8	218.1
1962	200.4	83.1	16653.2	36.1	5.0	180.5
1963	271.5	105.9	28751.9	59.9	5.0	299.5
1964	311.2	114.6	35663.5	72.6	5.0	363.0
1965	305.2	81.9	24995.9	65.0	5.1	331.5
1966	238.9	91.0	21739.9	85.1	5.1	434.0
1967	318.1	74.8	23793.9	80.9	5.1	412.6
1968	341.2	71.3	24327.6	79.1	5.1	403.4
1969	316.9	88.8	28140.7	116.5	5.0	582.5
1970	334.0	95.3	31830.2	92.0	5.2	478.4
1971	340.0	96.6	32844.0	92.0	5.3	487.6
1972	279.0	123.4	34428.6	84.0	5.8	487.2
1973	271.0	126.5	34281.5	75.0	10.5	787.5
1974	258.0	259.5	66951.0	83.0	15.2	1261.6
1975	250.0	378.9	94725.0	70.0	17.7	1239.0
1976	250.0	270.8	67700.0	72.0	12.1	871.2
1977	324.0	288.8	93571.2	90.0	21.6	1944.0
1978	294.0	283.2	83260.8	121.0	37.4	4525.4
1979	428.0	273.3	116972.4	128.0	57.5	7360.0
1980	441.0	395.0	174195.0	161.0	74.5	11994.5
1981	408.0	322.5	131580.6	141.0	68.2	9616.2
1982	411.0	304.3	125067.3	157.0	32.4	5086.8
1983	343.0	326.4	111955.2	93.0	34.1	3171.3
1984	379.0	290.1	109947.9	155.0	43.1	6680.5
1985	410.0	272.8	111848.0	140.0	46.4	6496.4
1986	324.0	412.7	133714.8	126.0	62.8	7912.8
1987	429.0	433.9	186143.1	127.0	83.2	10566.4
1988	409.0	485.0	198365.6	134.0	84.9	11376.6
1989	400.0	520.4	208160.0	143.0	69.4	9924.2
1990	471.0	582.3	274263.3	173.0	100.2	17334.6

Notes: ^a = all data are in nominal values, mt = metric tons, and F\$ = Fiji dollar.
Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.8: continued – Fiji, 1961–1990

Year	Coconut oil ^a			Gold ^a		
	Volumes mt10 ³	Prices F\$/mt	Values F\$10 ³	Volumes Kg10 ³	Prices F\$/Kg	Values F\$10 ³
1961	23.7	172.2	4081.1	3.0	800.0	2400.0
1962	18.2	159.8	2908.4	2.6	915.4	2380.0
1963	20.0	187.0	3740.0	3.5	891.4	3119.9
1964	22.8	199.6	4550.9	3.1	893.6	2770.2
1965	14.8	246.0	3640.8	3.5	882.9	3090.2
1966	14.5	198.6	2879.7	3.4	891.2	3030.0
1967	14.2	200.7	2850.0	3.5	900.0	3150.0
1968	17.2	277.3	4769.6	3.3	1021.2	3370.0
1969	17.1	228.7	3910.8	3.0	1120.3	3360.0
1970	18.7	274.3	5129.4	3.2	1046.9	3350.1
1971	17.0	231.8	3940.6	2.6	1030.8	2680.1
1972	15.0	158.7	2380.5	2.4	1658.3	3980.0
1973	18.0	315.0	5670.0	2.5	2452.0	6130.0
1974	14.0	766.4	10729.6	2.2	3918.2	8620.0
1975	16.0	316.3	5060.8	2.2	3900.7	8580.0
1976	14.0	325.7	4559.8	2.1	3452.4	7250.0
1977	18.0	492.8	8870.4	1.5	4373.3	6560.0
1978	18.0	496.7	8940.6	0.8	6187.5	4950.0
1979	15.0	778.7	11680.5	0.9	7211.1	6490.0
1980	13.0	502.3	6529.9	0.8	15512.5	12410.0
1981	14.0	454.3	6360.2	0.9	13188.9	11870.0
1982	15.0	411.3	6169.5	1.4	11128.6	15580.0
1983	15.0	705.3	10579.5	1.3	12961.5	16850.0
1984	15.0	1231.3	18469.5	1.7	12058.8	20500.0
1985	11.0	694.6	7640.6	1.9	11484.2	21820.0
1986	14.0	279.3	3910.2	2.9	13320.7	38630.0
1987	7.0	431.4	3019.8	3.0	16853.3	50560.0
1988	4.0	855.0	3420.0	4.1	19882.9	81519.9
1989	9.0	585.6	5270.4	4.0	17692.5	70770.0
1990	11.0	435.2	4787.2	4.2	18054.8	75830.2

Notes: ^a = all data are in nominal values, mt = metric tons, Kg = Kilograms, and F\$ = Fiji dollar.
Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.8: continued – Fiji, 1961–1990

Year	Timber products ^a			Fish products ^a		
	Volumes m ³ 10 ³	Prices F\$/m ³	Values F\$10 ³	Volumes Kg10 ³	Prices F\$/Kg	Values F\$10 ³
1961	na	na	na	na	na	na
1962	na	na	na	na	na	na
1963	2.7	48.2	130.1	na	na	na
1964	5.8	41.4	240.1	na	na	na
1965	7.1	43.7	310.3	na	na	na
1966	10.7	48.6	520.0	na	na	na
1967	6.6	47.0	310.2	na	na	na
1968	6.3	50.8	320.0	na	na	na
1969	6.5	55.4	360.1	na	na	na
1970	4.5	60.0	270.0	na	na	na
1971	2.9	82.8	240.1	na	na	na
1972	2.5	76.0	190.0	na	na	na
1973	6.6	83.3	550.0	na	na	na
1974	8.6	114.0	980.4	na	na	na
1975	2.7	148.2	400.1	0.2	900.0	180.0
1976	6.3	150.8	950.0	0.5	2020.0	1010.0
1977	7.1	101.4	720.0	1.9	1963.2	3730.1
1978	9.0	160.0	1440.0	3.9	2230.8	8700.1
1979	7.5	217.3	1630.0	5.4	2138.9	11550.1
1980	25.9	157.5	4079.3	3.3	2597.0	8570.1
1981	6.3	279.4	1760.2	5.4	3024.1	16330.1
1982	6.3	260.3	1640.0	2.7	3381.5	9130.1
1983	9.0	201.1	1810.0	5.1	3102.0	15820.2
1984	34.6	126.9	4390.7	4.5	3191.1	14360.0
1985	12.8	238.3	3050.2	3.1	3512.9	10890.0
1986	33.4	118.3	3950.2	4.6	3626.1	16680.1
1987	33.1	323.9	10720.1	4.8	4329.2	20780.2
1988	33.3	561.0	18680.3	7.0	5678.6	39750.2
1989	32.0	413.1	13220.2	7.2	5476.4	39430.1
1990	33.6	453.3	15230.9	6.8	5697.1	38740.3

Notes: ^a = all data are in nominal values, m = metres, mt = metric tons, Kg = Kilograms, F\$ = Fiji dollar, and na = not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.9: Commodity export values, quantities and prices for PNG, 1961–1990

Year	Coffee ^a			Cocoa ^a		
	Volumes mt10 ³	Prices K/mt	Values K10 ³	Volumes mt10 ³	Prices K/mt	Values K10 ³
1961	2.3	1347.8	3099.9	7.3	548.0	4000.4
1962	3.4	1176.5	4000.1	10.0	590.0	5900.0
1963	4.9	1102.0	5399.8	14.1	482.3	6800.4
1964	6.8	1073.5	7299.8	15.6	455.1	7099.6
1965	8.7	1011.5	8800.1	20.2	217.8	4399.6
1966	10.8	944.4	10199.5	16.8	571.4	9599.5
1967	12.9	1108.5	14299.7	21.6	546.3	11800.1
1968	18.3	847.0	15500.1	24.0	670.8	16099.2
1969	19.9	1015.1	20200.5	27.3	571.4	15599.2
1970	25.4	811.0	20599.4	23.3	583.7	13600.2
1971	28.2	727.0	20501.4	30.0	370.0	11100.0
1972	31.1	749.2	23300.1	22.0	509.1	11200.2
1973	32.7	880.7	28798.9	28.7	811.9	23301.5
1974	36.8	913.0	33598.4	35.5	1129.6	40100.8
1975	36.0	1172.2	42199.2	34.4	940.8	32363.5
1976	48.1	2083.1	100197.1	31.3	1249.2	39100.0
1977	37.0	3875.7	143400.9	29.4	2938.8	86400.7
1978	45.8	2340.6	107199.5	27.1	2324.7	62999.4
1979	49.6	2520.2	125001.9	27.3	2197.8	59999.9
1980	51.0	2325.5	118600.5	28.7	1620.2	46499.7
1981	47.1	1575.4	74201.3	27.8	1226.6	34099.5
1982	41.1	1892.9	77798.2	28.7	1108.0	31799.6
1983	52.5	1803.8	94699.5	26.3	1574.1	41398.8
1984	49.4	2240.9	110700.5	34.1	1964.8	66999.7
1985	40.6	2894.1	117500.5	30.9	2022.7	62501.4
1986	53.1	3926.6	208502.5	31.9	1768.0	56399.2
1987	64.8	2078.7	134699.8	34.4	1633.7	56199.3
1988	44.8	2533.5	113500.8	37.1	1239.9	46000.3
1989	79.6	1763.8	140398.5	46.2	978.4	45202.1
1990	60.0	1476.7	88602.2	35.0	854.3	29900.5

Notes: ^a = all data are in nominal values, mt = metric tons, and K = Kina.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.9: continued – PNG, 1961–1990

Year	Copra ^a			Copra oil ^a		
	Volumes mt10 ³	Prices K/mt	Values K10 ³	Volumes mt10 ³	Prices K/mt	Values K10 ³
1961	76.5	120.3	9203.0	20.4	191.2	3900.5
1962	74.8	125.7	9402.4	19.6	239.8	4700.1
1963	72.5	137.9	9997.8	23.6	194.9	4599.6
1964	69.3	178.9	12397.8	21.1	322.3	6800.5
1965	73.6	194.3	14300.5	25.5	231.4	5900.7
1966	87.8	113.9	10000.4	21.9	237.4	5199.1
1967	74.1	187.6	13901.2	23.2	297.4	6899.7
1968	75.5	196.0	14798.0	24.1	240.7	5800.9
1969	93.7	141.9	13296.0	20.6	281.6	5801.0
1970	84.3	168.5	14204.6	21.3	366.2	7800.1
1971	87.5	107.4	9397.5	26.5	222.6	5898.9
1972	79.9	110.1	8797.0	27.7	180.5	4999.9
1973	76.1	311.4	23697.5	26.8	514.9	13799.3
1974	95.5	301.6	28802.8	26.6	537.6	14300.2
1975	96.9	125.9	12199.7	28.0	260.7	7299.6
1976	83.6	144.7	12096.9	27.6	297.1	8200.0
1977	88.9	261.0	23202.9	27.7	454.9	12600.7
1978	97.1	236.9	23003.0	27.6	449.3	12400.7
1979	105.3	362.8	38202.8	34.4	598.8	20598.7
1980	91.7	267.2	24502.2	33.6	494.1	16601.8
1981	91.4	211.2	19303.7	34.8	359.2	12500.2
1982	74.4	173.4	12901.0	37.6	321.8	12099.7
1983	78.7	305.0	24003.5	36.2	552.5	20000.5
1984	93.5	525.1	49096.9	40.7	968.1	39401.7
1985	103.5	322.7	33399.5	41.5	571.1	23700.7
1986	93.0	107.5	9997.5	41.1	253.0	10398.3
1987	84.1	180.7	15196.9	40.2	360.7	14500.1
1988	76.8	252.6	19399.7	36.3	479.3	17398.6
1989	71.0	197.2	14001.2	37.1	412.4	15300.0
1990	60.0	145.0	8700.0	35.0	331.4	11599.0

Notes: ^a = all data are in nominal values, mt = metric tons, and K = Kina.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.9: continued – PNG, 1961–1990

Year	Rubber ^a			Logs ^a		
	Volumes mt10 ³	Prices K/mt	Values K10 ³	Volumes m ³ 10 ³	Prices K/m ³	Values K10 ³
1961	4.4	545.5	2400.2	4.6	21.1	97.1
1962	4.7	510.6	2399.8	34.3	18.7	641.4
1963	4.5	555.6	2500.2	44.9	17.8	799.2
1964	5.0	520.0	2600.0	34.2	17.8	608.8
1965	5.3	490.6	2600.2	61.7	14.3	882.3
1966	5.4	463.0	2500.2	93.0	15.1	1404.3
1967	5.7	350.9	2000.1	109.2	15.6	1703.5
1968	5.6	410.7	2299.9	141.0	12.1	1706.1
1969	5.8	482.8	2800.2	101.0	11.9	1201.9
1970	6.2	371.0	2300.2	197.0	13.2	2600.4
1971	5.9	339.0	2000.1	423.0	12.5	5287.5
1972	5.6	357.1	1999.8	434.0	11.5	4991.0
1973	6.1	590.2	3600.2	419.0	13.6	5698.4
1974	5.5	472.7	2599.9	632.0	18.4	11628.8
1975	5.0	540.0	2700.0	385.0	20.0	7700.0
1976	4.7	638.3	3000.0	372.0	18.0	6696.0
1977	4.2	690.5	2900.1	471.0	23.4	11021.4
1978	4.1	634.2	2600.2	421.0	26.8	11282.8
1979	4.0	875.0	3500.0	629.0	32.6	20505.4
1980	4.0	950.0	3800.0	634.0	47.3	29988.2
1981	4.5	755.6	3400.2	749.0	42.1	31532.9
1982	2.3	608.7	1400.0	1063.0	46.7	49642.1
1983	2.7	814.8	2200.0	1003.0	43.1	43229.3
1984	3.4	705.9	2400.1	1201.0	58.2	69898.2
1985	5.4	722.2	3899.9	1140.6	51.2	58398.7
1986	5.0	600.0	3000.0	1298.9	52.4	68062.4
1987	3.7	837.8	3099.9	1450.0	71.0	102950.0
1988	4.5	977.8	44000.1	1347.9	67.1	90444.1
1989	4.5	577.8	2600.1	1248.7	66.7	83288.3
1990	3.2	531.3	1700.2	1300.0	47.7	62010.0

Notes: ^a = all data are in nominal values, mt = metric tons, m = metres and K = Kina.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.9: continued – PNG, 1961–1990

Year	Marine products ^a			Forestry products ^a		
	Volumes mt10 ³	Prices K/mt	Values K10 ³	Volumes m ³ 10 ³	Prices K/m ³	Values K10 ³
1961	0.2	2500.0	500.0	11.0	45.5	500.5
1962	0.2	3500.0	700.0	43.0	28.8	1238.4
1963	0.4	2250.0	900.0	55.6	27.0	1501.2
1964	0.3	3000.0	900.0	46.3	30.5	1412.2
1965	0.2	5000.0	1000.0	73.7	22.8	1680.4
1966	0.4	2000.0	800.0	105.0	21.9	2299.5
1967	0.8	1875.0	1500.0	123.3	21.9	2700.3
1968	0.5	1600.0	800.0	157.2	17.8	2798.2
1969	0.2	6500.0	1300.0	117.7	20.4	2401.1
1970	1.5	1733.3	2600.0	211.3	17.5	3697.8
1971	9.5	547.4	5200.3	434.5	16.8	7299.6
1972	15.2	322.4	4900.5	460.5	16.3	7506.2
1973	12.5	352.0	4400.0	455.9	18.4	8388.6
1974	38.3	362.9	13899.1	686.9	24.5	16829.1
1975	31.4	321.7	10100.4	418.3	26.3	11001.3
1976	32.1	529.6	17000.2	407.8	34.6	14109.9
1977	25.0	337.3	8432.5	503.0	33.6	16900.8
1978	46.7	537.5	25101.3	484.0	33.5	16214.0
1979	28.4	732.4	20800.2	674.0	41.5	27971.0
1980	35.7	888.0	31701.6	634.0	47.3	29988.2
1981	31.2	878.2	27399.8	749.0	42.1	31532.9
1982	3.9	2128.2	8300.0	1063.0	46.7	49642.1
1983	2.6	3500.0	9100.0	1003.0	43.1	43229.3
1984	2.9	3448.3	10000.1	1201.0	58.2	69898.2
1985	13.5	896.3	12100.1	1140.6	51.2	58398.7
1986	1.7	4647.1	7900.1	1298.9	52.4	68062.4
1987	1.4	7857.1	10999.9	1450.0	71.0	102950.0
1988	1.0	7500.0	7500.0	1347.9	67.1	90444.1
1989	1.2	6750.0	8100.0	1348.7	66.7	89958.3
1990	1.3	6307.7	8200.1	1300.0	47.7	62010.0

Notes: ^a = all data are in nominal values, mt = metric tons, m = metres and K = Kina.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.9: continued – PNG, 1961–1990

Year	Tea ^a			Palm oil ^a		
	Volumes mt10 ³	Prices K/mt	Values K10 ³	Volumes mt10 ³	Prices K/mt	Values K10 ³
1961	na	na	na	na	na	na
1962	na	na	na	na	na	na
1963	0.02	1500.0	30.0	na	na	na
1964	0.03	666.7	20.0	na	na	na
1965	0.02	550.0	11.0	na	na	na
1966	0.03	1000.0	30.0	na	na	na
1967	0.04	1000.0	40.0	na	na	na
1968	0.2	1500.0	300.0	na	na	na
1969	0.3	2333.3	700.0	na	na	na
1970	0.7	1571.4	1100.0	na	na	na
1971	1.2	1250.0	1500.0	6.2	80.6	499.7
1972	1.8	1111.1	2000.0	5.8	86.2	500.0
1973	2.8	928.6	2600.1	8.7	310.3	2699.6
1974	4.0	1000.0	4000.0	18.4	369.6	6800.6
1975	4.5	888.9	4000.1	27.6	246.4	6800.6
1976	5.6	910.7	5099.9	27.3	249.1	6800.4
1977	6.2	1580.6	9799.7	25.5	337.3	8601.2
1978	7.0	1114.3	7800.1	33.5	313.4	10498.9
1979	7.0	1142.9	8000.3	30.9	466.0	14399.4
1980	7.9	1075.9	8499.6	37.3	321.7	11999.4
1981	7.0	1014.3	7100.1	44.0	322.7	14198.8
1982	6.5	1030.8	6700.2	76.7	282.9	21698.4
1983	7.2	1444.4	10399.7	77.9	304.2	23697.2
1984	7.3	2342.5	17100.3	129.9	582.8	75705.7
1985	6.6	1742.4	11499.8	123.8	497.6	61602.9
1986	5.3	1415.1	7500.0	129.0	219.4	28302.6
1987	5.6	1000.0	5600.0	97.3	245.6	23896.9
1988	5.8	1086.2	6300.0	102.6	320.7	32903.8
1989	5.8	1051.7	6099.9	135.5	282.7	38305.9
1990	6.5	1030.8	6700.2	160.0	204.4	32704.0

Notes: ^a = all data are in nominal values, mt = metric tons, and K = Kina, na = not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.9: continued – PNG, 1961–1990

Year	Copper ^a			Gold ^a		
	Volumes mt10 ³	Prices K/mt	Values K10 ³	Volumes Kg10 ³	Prices K/Kg	Values K10 ³
1961	na	na	na	na	na	na
1962	na	na	na	na	na	na
1963	na	na	na	na	na	na
1964	na	na	na	na	na	na
1965	na	na	na	na	na	na
1966	na	na	na	na	na	na
1967	na	na	na	na	na	na
1968	na	na	na	na	na	na
1969	na	na	na	na	na	na
1970	na	na	na	na	na	na
1971	102.3	218.0	22301.4	na	na	na
1972	400.1	314.2	125711.4	na	na	na
1973	700.3	445.4	311913.6	na	na	na
1974	623.7	379.5	236694.2	na	na	na
1975	566.7	352.0	199478.4	na	na	na
1976	605.8	232.4	140764.7	2.2	909.1	2000.0
1977	614.8	180.5	110971.4	22.9	3690.0	84501.0
1978	640.9	191.3	122604.2	23.4	4440.2	103900.7
1979	586.5	313.6	183926.4	20.3	8064.0	163699.2
1980	494.4	281.8	139321.9	14.5	11924.1	172899.5
1981	563.3	238.9	134572.4	17.6	9028.4	158899.8
1982	608.8	201.7	122795.0	19.1	8994.8	171800.7
1983	632.1	254.7	160995.9	19.1	10518.3	200899.5
1984	550.8	246.0	135496.8	19.4	9732.0	188800.8
1985	560.0	293.2	164192.0	32.0	9962.5	318800.0
1986	589.4	264.7	156014.2	36.5	10917.8	398499.7
1987	669.7	420.9	281876.7	34.6	12222.5	422898.5
1988	760.2	587.9	446921.6	35.4	11443.5	405099.9
1989	681.2	506.3	344891.6	31.3	10124.6	316900.0
1990	694.8	502.6	349206.5	33.4	11503.0	384200.2

Notes: ^a = all data are in nominal values, mt = metric tons, Kg = Kilograms, K = Kina and na = not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.10: Commodity export values, quantities and prices for SI, 1961–1990

Year	Copra ^a			Cocoa ^a		
	Volumes mt10 ³	Prices SI\$/mt	Values SI\$10 ³	Volumes mt10 ³	Prices SI\$/mt	Values SI\$10 ³
1961	24.7	128.7	3178.9	0.01	400.0	4.0
1962	22.8	123.7	2820.4	0.02	400.0	8.0
1963	23.5	142.1	3339.4	0.04	325.0	13.0
1964	23.8	147.9	3520.0	0.06	316.7	19.0
1965	24.9	178.3	4439.7	0.08	237.5	19.0
1966	20.7	146.4	3030.5	0.07	314.3	22.0
1967	24.8	146.4	3630.7	0.06	366.7	22.0
1968	17.5	207.4	3629.5	0.12	433.3	52.0
1969	23.8	145.8	3470.0	0.09	566.7	51.0
1970	21.4	169.6	3629.4	0.09	555.6	50.0
1971	26.7	143.4	3828.9	0.14	357.1	50.0
1972	20.9	87.1	1820.4	0.08	375.0	30.0
1973	15.5	181.3	2810.2	0.09	555.6	50.0
1974	21.8	413.3	9009.9	0.11	636.4	70.0
1975	27.5	169.4	4658.5	0.16	687.5	110.0
1976	23.0	157.8	3629.4	0.13	1538.5	200.0
1977	26.9	297.0	7989.3	0.16	3437.5	550.0
1978	32.2	317.1	10210.6	0.24	2500.0	600.0
1979	31.6	508.5	16068.6	0.29	2241.4	650.0
1980	31.7	331.9	10521.2	0.37	1729.7	640.0
1981	31.8	253.2	8051.8	0.59	1508.5	890.0
1982	34.0	237.7	8081.8	0.62	1483.9	920.0
1983	25.5	328.2	8369.1	1.24	1822.6	2260.0
1984	42.0	766.7	32201.4	1.41	2390.1	3370.0
1985	43.6	532.1	23199.6	1.75	2862.9	5010.0
1986	32.4	183.6	5948.6	2.04	3171.6	6470.0
1987	27.9	298.6	8330.9	2.70	3407.4	9200.0
1988	27.1	577.9	15661.1	2.62	2843.5	7450.0
1989	32.9	637.4	20970.5	3.25	2461.5	8000.0
1990	31.9	342.9	10938.5	3.51	3148.1	11049.8

Notes: ^a = all data are in nominal values, mt = metric tons, and SI\$ = Solomon Islands dollar.
Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.10: continued – SI, 1961–1990

Year	Marine products ^a			Forestry products ^a		
	Volumes mt10 ³	Prices SI\$/mt	Values SI\$10 ³	Volumes m ³ 10 ³	Prices SI\$/m ³	Values SI\$10 ³
1961	0.4	350.0	140.0	40.0	3.3	132.0
1962	0.3	230.0	69.0	100.0	2.1	210.0
1963	0.2	195.0	39.0	10.0	18.0	180.0
1964	0.3	169.0	50.7	20.0	19.0	380.0
1965	0.2	135.0	27.0	20.0	12.5	250.0
1966	0.2	130.0	26.0	30.0	15.0	450.0
1967	0.4	137.5	55.0	80.0	13.5	1080.0
1968	0.3	146.7	44.0	130.0	10.9	1417.0
1969	0.6	136.7	82.0	210.0	11.8	2478.0
1970	0.8	162.5	130.0	230.0	12.4	2852.0
1971	4.7	280.9	1320.2	260.0	12.6	3276.0
1972	12.7	289.0	3670.3	240.0	11.3	2712.0
1973	5.6	296.4	1659.8	240.0	15.8	3792.0
1974	9.5	400.0	3800.0	220.0	19.5	4290.0
1975	3.2	567.4	1815.7	240.0	13.0	3120.0
1976	13.9	561.8	7809.0	240.0	26.0	6240.0
1977	11.0	769.1	8460.1	250.0	31.6	7900.0
1978	11.5	671.3	7720.0	270.0	26.4	7128.0
1979	24.7	696.8	17211.0	270.0	58.8	15876.0
1980	23.5	1000.4	23509.4	265.0	60.2	15953.0
1981	25.0	934.4	23360.0	322.0	49.9	16067.8
1982	16.9	846.1	14299.1	340.0	67.2	22848.0
1983	32.8	936.9	30730.3	343.0	58.2	19962.6
1984	34.7	849.9	29491.5	398.0	75.5	30049.0
1985	28.9	1136.3	32839.1	334.0	74.1	24749.4
1986	41.5	1304.3	54128.5	440.0	81.2	35728.0
1987	28.6	1996.8	57108.5	287.0	129.5	37166.5
1988	37.1	2233.2	82851.7	266.0	149.6	39793.6
1989	30.1	2351.8	70789.2	265.0	155.9	41313.5
1990	21.0	2833.3	59499.3	398.0	152.8	60814.4

Notes: ^a = all data are in nominal values, mt = metric tons, SI\$ = Solomon Islands dollar, and m= metres.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.10: continued – SI, 1961–1990

Year	Gold ^a			Fish ^a		
	Volumes ^a Kg10 ³	Prices SI\$/mt	Values SI\$10 ³	Volumes mt10 ³	Prices SI\$/mt	Values SI\$10 ³
1961	0.002	1000.0	2.0	na	na	na
1962	0.014	1071.4	15.0	na	na	na
1963	0.008	1000.0	8.0	na	na	na
1964	0.003	1333.3	4.0	na	na	na
1965	0.010	1000.0	10.0	na	na	na
1966	0.011	818.2	9.0	na	na	na
1967	0.021	952.4	20.0	na	na	na
1968	0.020	1000.0	20.0	na	na	na
1969	0.013	923.1	12.0	na	na	na
1970	0.009	1111.1	10.0	na	na	na
1971	0.014	714.3	10.0	4.2	295.2	1239.8
1972	0.016	1250.0	20.0	12.1	295.9	3580.4
1973	0.030	2000.0	60.0	5.1	302.0	1540.2
1974	0.027	2592.6	70.0	9.2	404.3	3719.6
1975	0.025	3200.0	80.0	4.7	591.5	2780.1
1976	0.024	2500.0	60.0	12.9	572.9	7390.4
1977	0.014	4285.7	60.0	10.6	781.1	8279.7
1978	0.022	4090.9	90.0	11.2	674.1	7549.9
1979	0.023	7391.3	170.0	24.3	696.7	16929.8
1980	0.037	16216.2	600.0	23.1	1003.5	23180.9
1981	0.042	14761.9	620.0	24.5	896.3	21959.4
1982	0.037	11351.4	420.0	16.5	846.7	13970.6
1983	0.050	10000.0	500.0	32.3	935.0	30200.5
1984	0.061	11803.3	720.0	34.1	844.6	28800.9
1985	0.073	10958.9	800.0	28.4	1125.4	31961.4
1986	0.117	18974.4	2220.0	40.8	1297.3	52929.8
1987	0.074	28378.4	2100.0	28.1	1942.3	54578.6
1988	0.043	35116.3	1510.0	36.5	2147.9	78398.4
1989	0.040	27750.0	1110.0	29.6	2205.7	65288.7
1990	0.047	25531.9	1200.0	20.6	2582.0	53189.2

Notes: ^a = all data are in nominal values, mt = metric tons, Kg = Kilograms, SI\$ = Solomon Islands dollar and na = not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.10: continued – SI, 1961–1990

Year	Palm oil & kernel ^a		
	Volumes mt10 ³	Prices SI\$/mt	Values SI\$10 ³
1961	na	na	na
1962	na	na	na
1963	na	na	na
1964	na	na	na
1965	na	na	na
1966	na	na	na
1967	na	na	na
1968	na	na	na
1969	na	na	na
1970	na	na	na
1971	na	na	na
1972	na	na	na
1973	na	na	na
1974	na	na	na
1975	na	na	na
1976	3.8	318.4	1209.9
1977	6.4	496.9	3180.2
1978	12.4	408.9	5070.4
1979	14.8	492.6	7290.5
1980	18.2	386.8	7039.8
1981	19.8	379.8	7520.0
1982	22.0	329.1	7240.2
1983	24.4	360.7	8801.1
1984	25.1	688.8	17288.9
1985	22.7	605.7	13749.4
1986	17.7	340.1	6019.8
1987	14.0	545.0	7630.0
1988	16.6	843.4	14000.4
1989	17.1	1175.4	20099.3
1990	28.9	665.4	19230.1

Notes: ^a = all data are in nominal values, mt = metric tons, SI\$ = Solomon Islands dollar and na = not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.11: Commodity export values, quantities and prices for Vanuatu, 1961–1990

Year	Copra ^a			Cocoa ^a		
	Volumes mt10 ³	Prices V/mt	Values V10 ³	Volumes mt10 ³	Prices V/mt	Values V10 ³
1961	32.4	9290.1	300999.2	0.6	29833.3	17900.0
1962	31.5	9365.1	295000.7	0.7	26571.4	18600.0
1963	35.6	11039.3	393000.0	0.8	31750.0	25400.0
1964	37.7	13793.1	520000.0	0.4	33250.0	13300.0
1965	28.7	16480.8	473000.0	0.5	23200.0	11600.0
1966	34.5	12898.6	445000.0	0.7	37428.6	26200.0
1967	42.4	13443.4	570000.0	0.7	45571.4	31900.0
1968	34.3	16239.1	557000.0	1.0	53600.0	53600.0
1969	37.0	14351.4	531000.0	0.6	65333.3	37800.0
1970	31.2	15480.8	483000.0	0.8	49000.0	39200.0
1971	34.0	12588.2	428000.0	0.6	31333.3	18800.0
1972	18.3	7486.3	137000.0	0.3	43000.0	12900.0
1973	22.2	15945.9	354000.0	0.8	61875.0	49500.0
1974	35.7	42493.0	1517000.0	0.5	98800.0	49400.0
1975	27.1	12472.3	338000.0	0.6	65166.7	39100.0
1976	34.2	15233.9	521000.0	0.7	95000.0	66500.0
1977	43.9	25216.4	1107000.0	0.9	188555.6	169700.0
1978	44.9	25902.0	1163000.0	1.1	171181.8	188300.0
1979	39.8	37814.1	1505000.0	0.6	158500.0	95100.0
1980	26.7	22172.3	592000.0	0.7	133714.3	93600.0
1981	47.1	22738.9	1071000.0	0.9	130000.0	117000.0
1982	35.1	20227.9	710000.0	0.6	94833.3	56900.0
1983	38.5	33974.0	1308000.0	1.2	152166.7	182600.0
1984	46.7	58543.9	2734000.0	0.8	168750.0	135000.0
1985	34.9	39885.4	1392000.0	0.8	166250.0	133000.0
1986	42.3	10898.3	461000.0	1.2	163333.3	196000.0
1987	31.9	22539.2	719000.0	1.2	172500.0	207000.0
1988	31.7	30063.1	953000.0	0.8	146250.0	117000.0
1989	23.6	31779.7	750000.0	1.6	108750.0	174000.0
1990	37.3	16166.2	603000.0	2.0	124000.0	248000.0

Notes: ^a = all data are in nominal values, mt = metric tons, and V = Vatu.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.11: continued – Vanuatu, 1961–1990

Year	Coffee ^a			Fish ^a		
	Volumes mt10 ³	Prices V/mt	Values V10 ³	Volumes mt10 ³	Prices V/mt	Values V10 ³
1961	207.0	38647.3	8000.0	3.7	25189.2	93200.0
1962	105.0	38095.2	4000.0	4.3	27209.3	117000.0
1963	217.0	27649.8	6000.0	3.0	25666.7	77000.0
1964	170.0	56470.6	9600.0	2.9	26448.3	76700.0
1965	133.0	40601.5	5400.0	3.4	28882.4	98200.0
1966	177.0	49152.5	8700.0	6.6	36242.4	239200.0
1967	219.0	50684.9	11100.0	6.0	33983.3	203900.0
1968	121.0	50413.2	6100.0	6.6	36318.2	239700.0
1969	84.0	61904.8	5200.0	8.0	38787.5	310300.0
1970	91.0	71428.6	6500.0	9.2	50717.4	466600.0
1971	74.0	64864.9	4800.0	13.4	48597.0	651200.0
1972	71.0	63380.3	4500.0	15.6	57596.2	898500.0
1973	2.0	50000.0	100.0	15.1	58860.9	888800.0
1974	26.0	96153.8,	2500.0	9.8	65020.4	637200.0
1975	36.0	72222.2	2600.0	5.2	49615.4	258000.0
1976	25.0	256000.0	6400.0	6.1	85131.1	519300.0
1977	51.0	307843.1	15700.0	10.0	106080.0	1060800.0
1978	22.0	181818.2	4000.0	9.2	105652.2	972000.0
1979	116.0	208620.7	24200.0	7.7	107922.1	831000.0
1980	54.0	137037.0	7400.0	8.3	127228.9	1056000.0
1981	61.0	136065.6	8300.0	4.8	172083.3	826000.0
1982	7.0	357142.9	2500.0	3.9	176666.7	689000.0
1983	33.0	160606.1	5300.0	4.5	176666.7	795000.0
1984	60.0	220000.0	13200.0	4.0	177500.0	710000.0
1985	87.0	241379.3	21000.0	4.1	248048.8	1017000.0
1986	22.0	318181.8	7000.0	2.5	307200.0	768000.0
1987	44.0	204545.5	9000.0	0.5	508000.0	254000.0
1988	19.0	210526.3	4000.0	0.7	494285.7	346000.0
1989	28.0	154000.0	5500.0	0.5	1446000.0	723000.0
1990	37.0	189189.2	7000.0	0.2	1355000.0	271000.0

Notes: ^a = all data are in nominal values, mt = metric tons, and V = Vatu.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.11: continued – Vanuatu, 1961–1990

Year	Beef ^a			Timber products ^a		
	Volumes mt10 ³	Prices V/mt	Values V10 ³	Volumes mt10 ³	Prices V/mt	Values V10 ³
1961	na	na	na	na	na	na
1962	na	na	na	na	na	na
1963	na	na	na	na	na	na
1964	0.1	43000.0	4300.0	na	na	na
1965	0.2	77500.0	15500.0	na	na	na
1966	0.2	77500.0	15500.0	na	na	na
1967	0.3	65333.3	19600.0	na	na	na
1968	0.3	54666.7	16400.0	na	na	na
1969	0.3	70333.3	21100.0	na	na	na
1970	0.4	72000.0	28800.0	na	na	na
1971	0.5	72600.0	36300.0	na	na	na
1972	0.7	76142.9	53300.0	na	na	na
1973	0.9	81222.2	73100.0	na	na	na
1974	0.5	114200.0	57100.0	na	na	na
1975	0.6	105333.3	63200.0	na	na	na
1976	0.5	140200.0	70100.0	na	na	na
1977	0.5	150400.0	75200.0	na	na	na
1978	0.9	166666.7	150000.0	3.9	8974.4	35000.0
1979	0.8	173750.0	139000.0	3.6	13055.6	47000.0
1980	0.4	187000.0	74800.0	0.1	10000.0	1000.0
1981	0.8	199875.0	159900.0	0.7	30000.0	21000.0
1982	0.8	230000.0	184000.0	0.7	32857.1	23000.0
1983	1.1	174909.1	192400.0	3.9	7948.7	31000.0
1984	0.7	202857.1	142000.0	19.2	7656.3	147000.0
1985	0.8	232500.0	186000.0	17.4	7816.1	136000.0
1986	0.6	248333.3	149000.0	7.9	7974.7	63000.0
1987	1.1	229090.9	252000.0	19.3	10777.2	208000.0
1988	1.0	243000.0	243000.0	7.0	15142.9	106000.0
1989	1.0	262000.0	262000.0	12.6	16190.5	204000.0
1990	1.2	306666.7	368000.0	1.9	47894.7	91000.0

Notes: ^a = all data are in nominal values, mt = metric tons, V = Vatu, and na= not available.

Sources: Various, as described in section 5.3 of Chapter 5.

Appendix 5.12: Specific commodity descriptions

Because the total number of individual commodities covered was large (31 commodities in all the four Melanesian countries), for demonstrative purposes, only one is graphed from each country in terms of three market variables (quantities, prices and values). These graphs are presented in Appendix Figures 5.12.1a, b and c, representing sugar quantities, prices and values from Fiji; 5.12.2a, b and c for coffee quantities, prices and values from PNG; 5.12.3a, b and c for copra quantities, prices and values from SI; and lastly, 5.12.4a, b and c for cocoa quantities, prices and values from Vanuatu.

The three market variables for sugar exports from Fiji show an expanding trend through time, albeit with a great deal of fluctuations. The variability in volumes of sugar exports was higher than the variability of the sugar export prices or the values (Appendix Figure 5.12.1a, b and c). It can be seen that the supplies of sugar declined drastically immediately after 1970, the time of political independence of Fiji. Over the whole period, the volume fluctuations had occurred more frequently than the prices and values while price and value fluctuations were more intensive than volume fluctuations during the 1970s and 1980s.

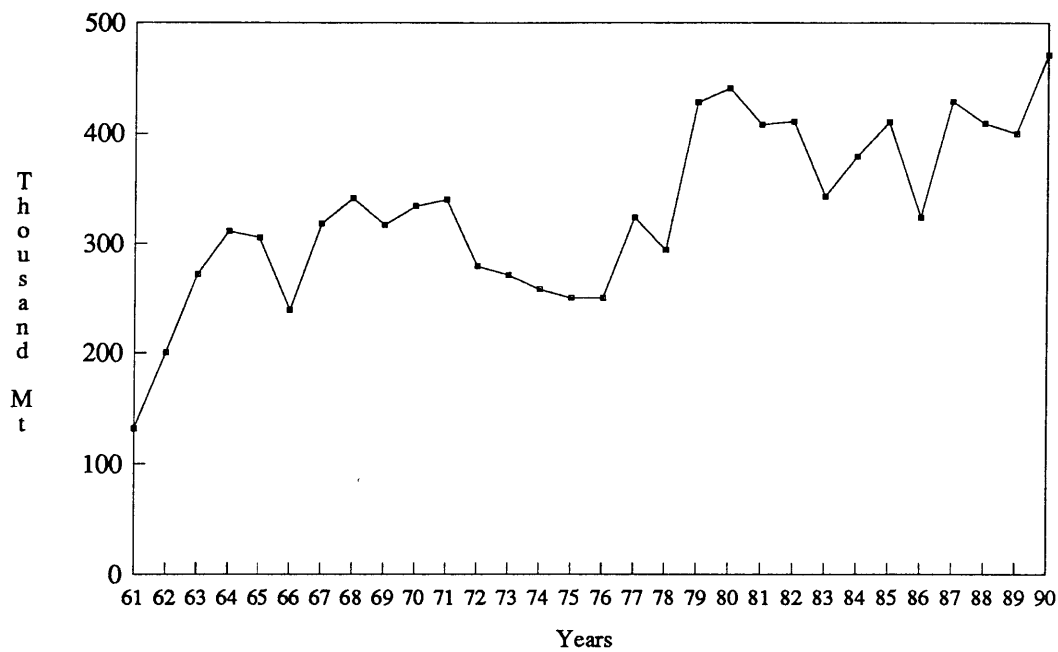
Coffee data in PNG, shown in Appendix Figures 5.12.2a, b, and c, reveal that fluctuations in the three market variables were less severe, in both magnitudes and frequency, during the 1960s than they were in the 1970s and 1980s. These differences are most marked from 1975, after the political independence of PNG. As compared with coffee price and value fluctuations, the volume fluctuations appear smaller in magnitudes though it is also observed that they occurred more frequently. The trends of coffee prices and values were particularly bad during the early and late 1970s and 1980s.

Copra exports from SI appear to have suffered major fluctuations during the past three decades. Appendix Figures 5.12.3a, b and c show that the copra volume fluctuations have been quite frequent and severe, especially during the 1970s and 1980s. Fluctuations in copra prices and values started to increase from the 1960s and became quite sharp during the 1970s and 1980s. Towards end of 1970s and in the mid to late 1980s, the trends of copra volumes, prices and values deteriorated appreciably.

The trends for cocoa volumes, prices and values from Vanuatu show a similar picture (Appendix Figures 5.12.4a, b and c). These three market variables have been variable throughout the past three decades. Over the whole period, cocoa volume fluctuations were quite frequent and unstable. The price and value fluctuations were more severe in the 1970s and 1980s than they were in the 1960s.

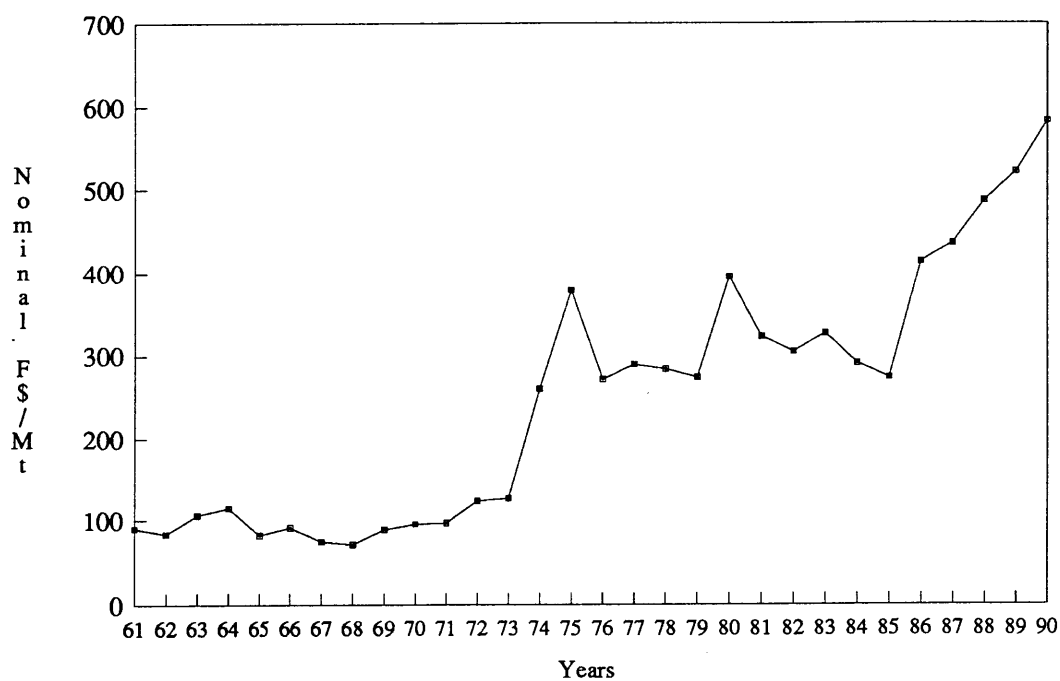
Finding the sources of the primary export commodity fluctuations forms the topic of Chapter 9. In overall terms, it seems that there have been severe fluctuations in the volume, price and value trends of the above described primary export commodities from the selected SPINs. It generally appears that there occurred larger world price fluctuations of export commodities in the 1970s than they did in the 1960s. In turn, commodity price fluctuations of the 1980s appeared to be more severe than in 1970s. Actually, as Maizels (1994) suggested, these price fluctuations (mostly declining) resulted in sharp deterioration in the commodity terms of trade in the 1980s. The consequences of this deterioration were massive losses in export earnings by LDCs.

Appendix Figure 5.1a: Sugar export volumes (nominal quantities in mt), Fiji, 1961–1990



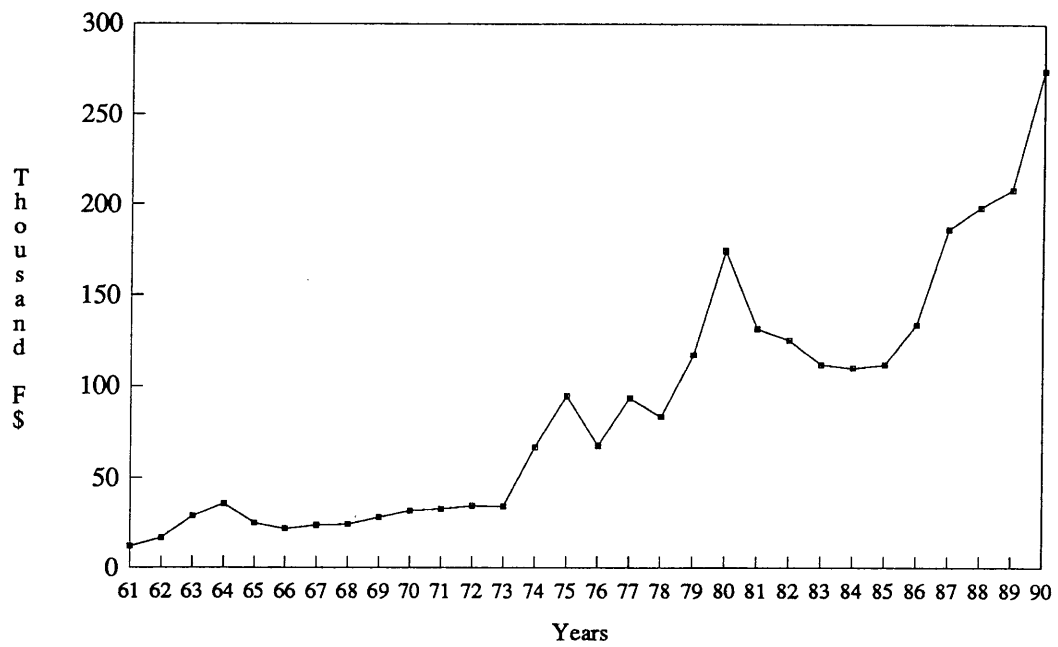
Source: Appendix 5.8.

Appendix Figure 5.1b: Sugar export prices (nominal F\$/mt), Fiji, 1961–1990



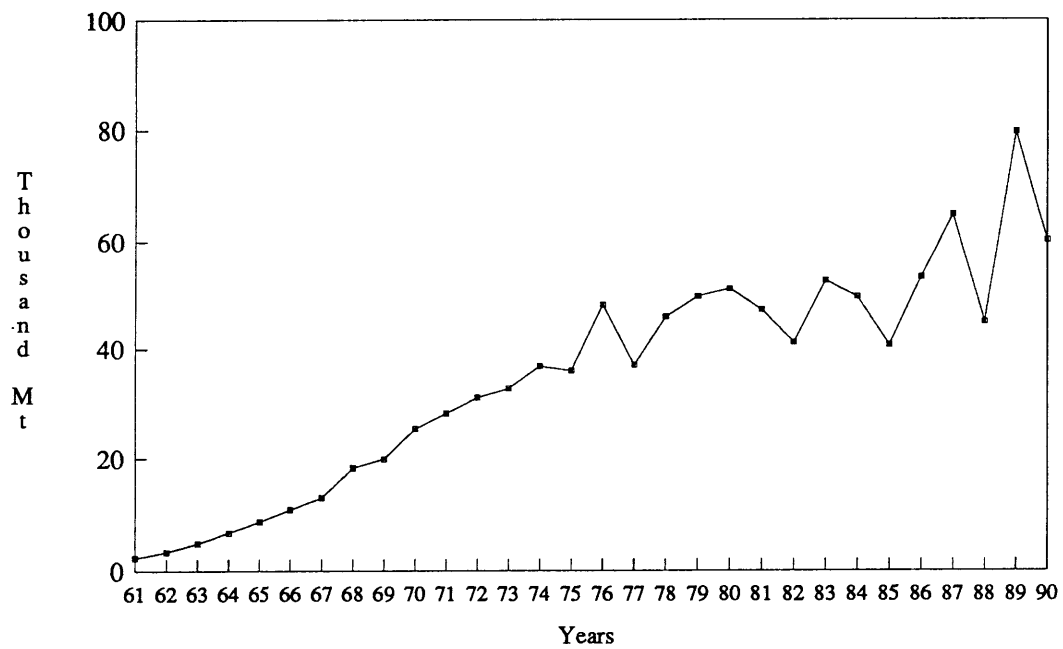
Source: Appendix 5.8.

Appendix Figure 5.1c: Sugar export values (nominal Fiji\$), Fiji, 1961–1990



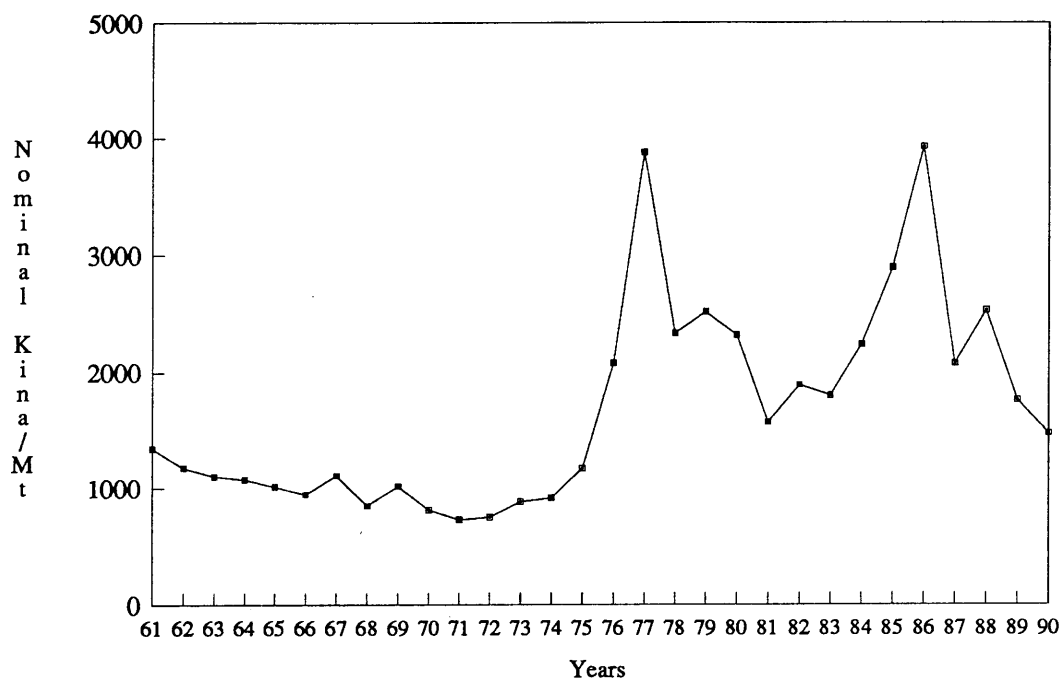
Source: Appendix 5.8.

Appendix Figure 5.2a: Coffee export volumes (nominal quantities in mt), PNG, 1961–1990



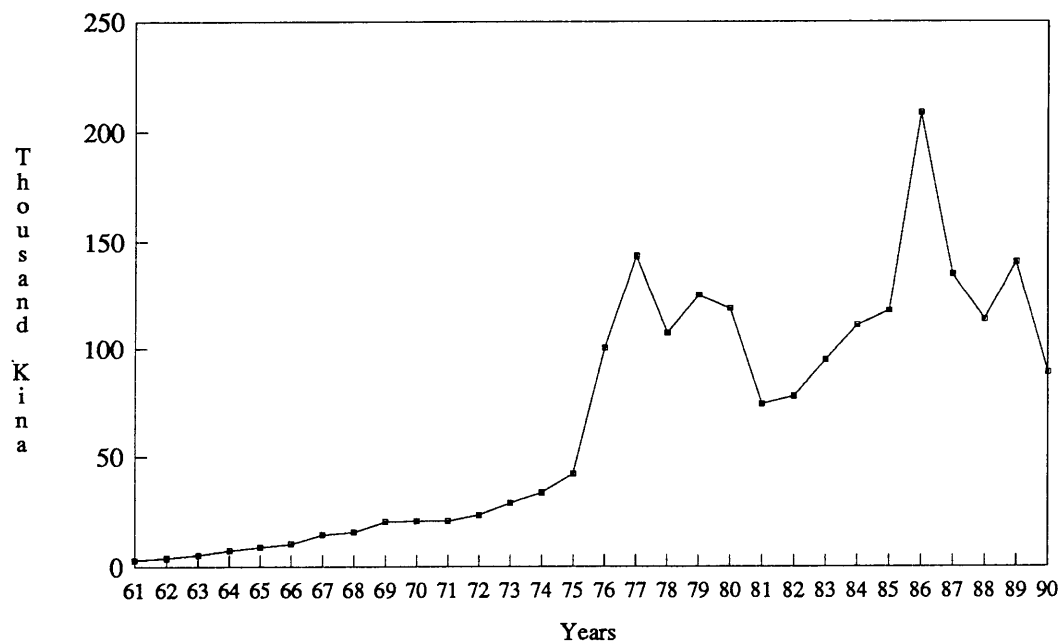
Source: Appendix 5.9.

Appendix Figure 5.2b: Coffee export prices (nominal K/mt), PNG, 1961–1990



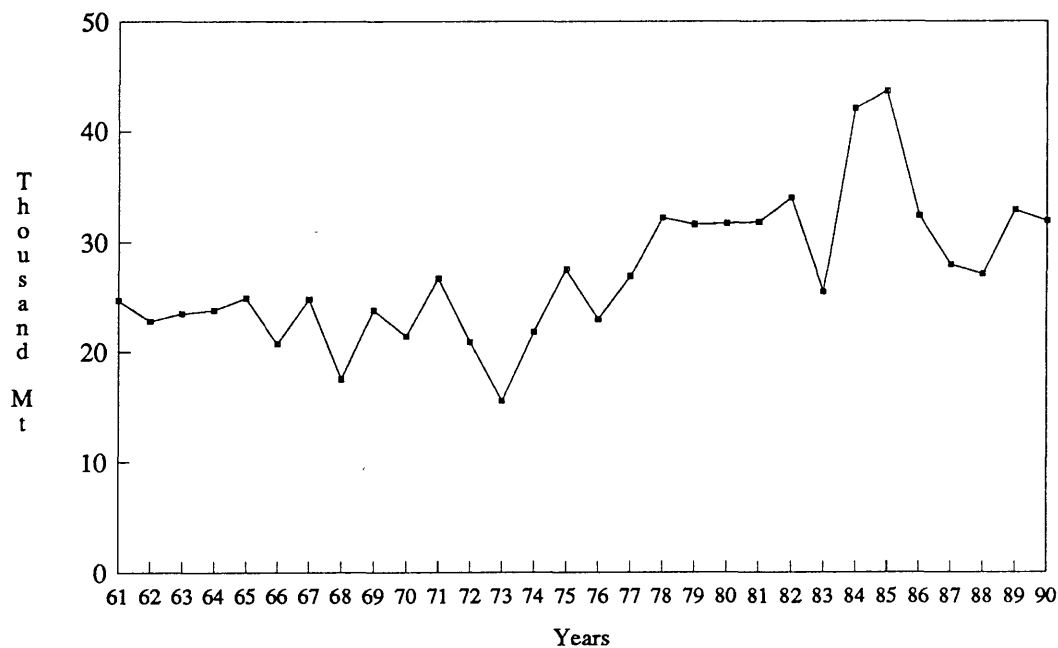
Source: Appendix 5.9.

Appendix Figure 5.2c: Coffee export values (nominal Kina), PNG, 1961–1990



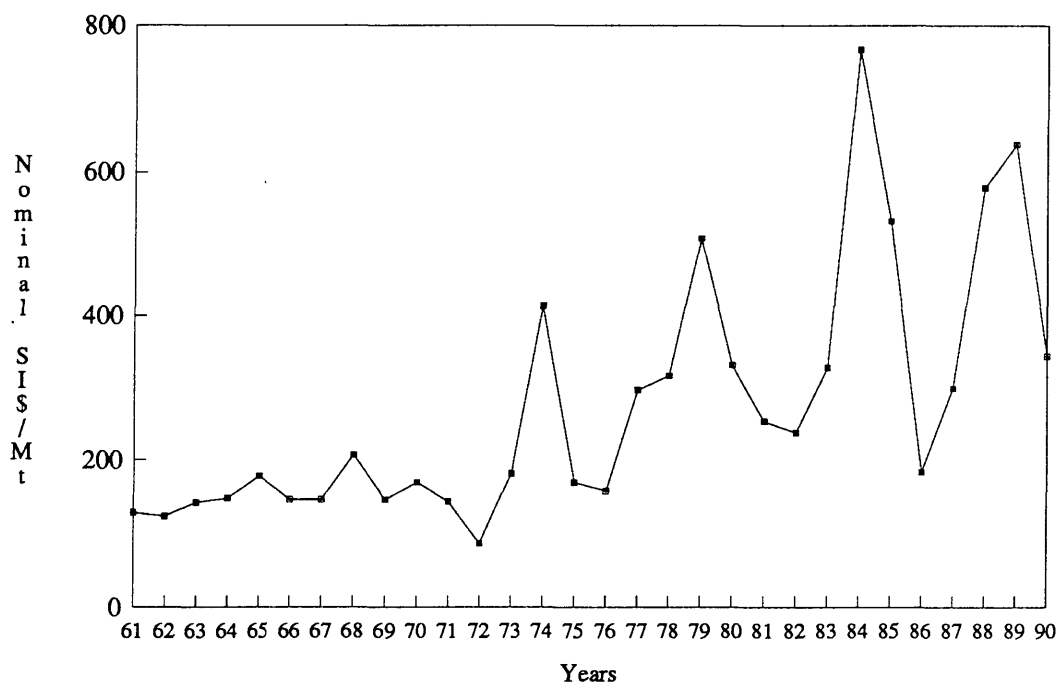
Source: Appendix 5.9.

Appendix Figure 5.3a: Copra export volumes (nominal quantities in mt), SI, 1961–1990



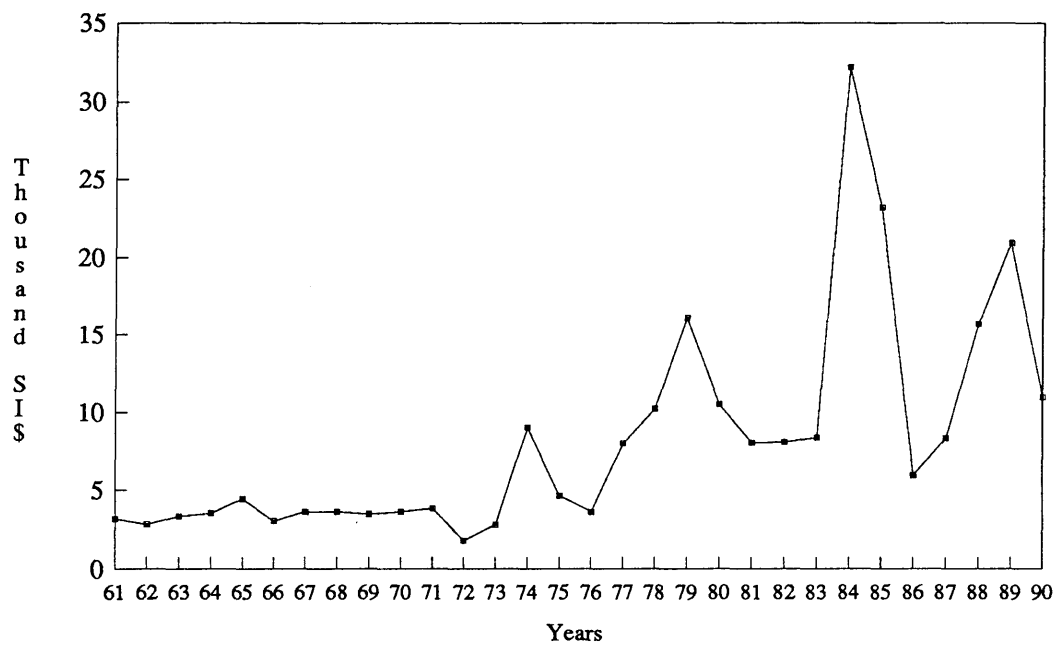
Source: Appendix 5.10.

Appendix Figure 5.3b: Copra export prices (nominal SI\$/mt), SI, 1961–1990



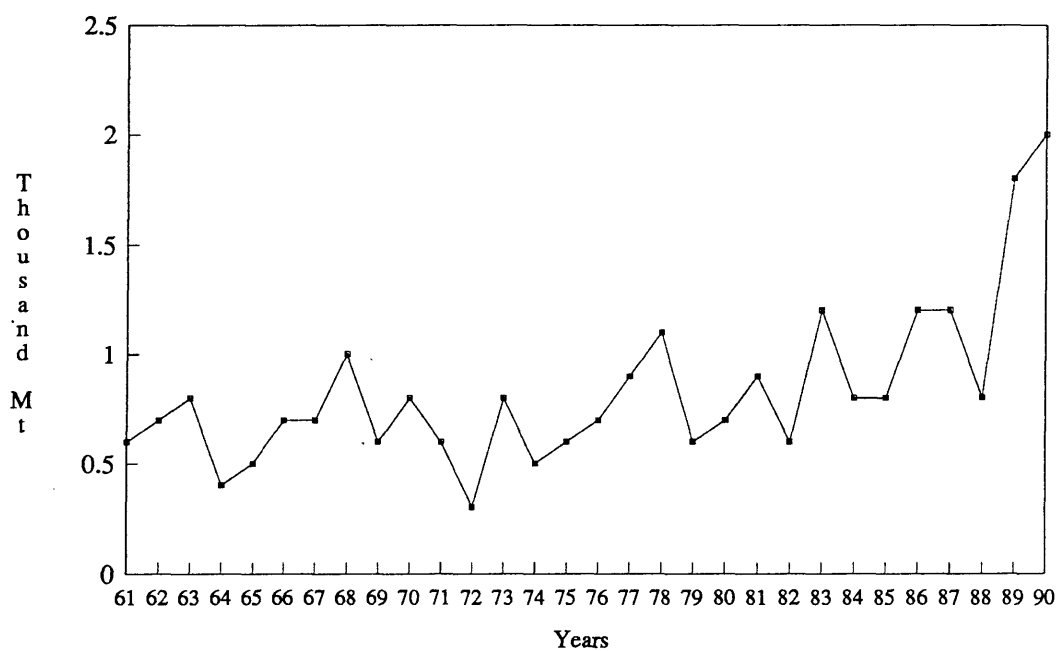
Source: Appendix 5.10.

Appendix Figure 5.3c: Copra export values (nominal SI\$), SI, 1961–1990



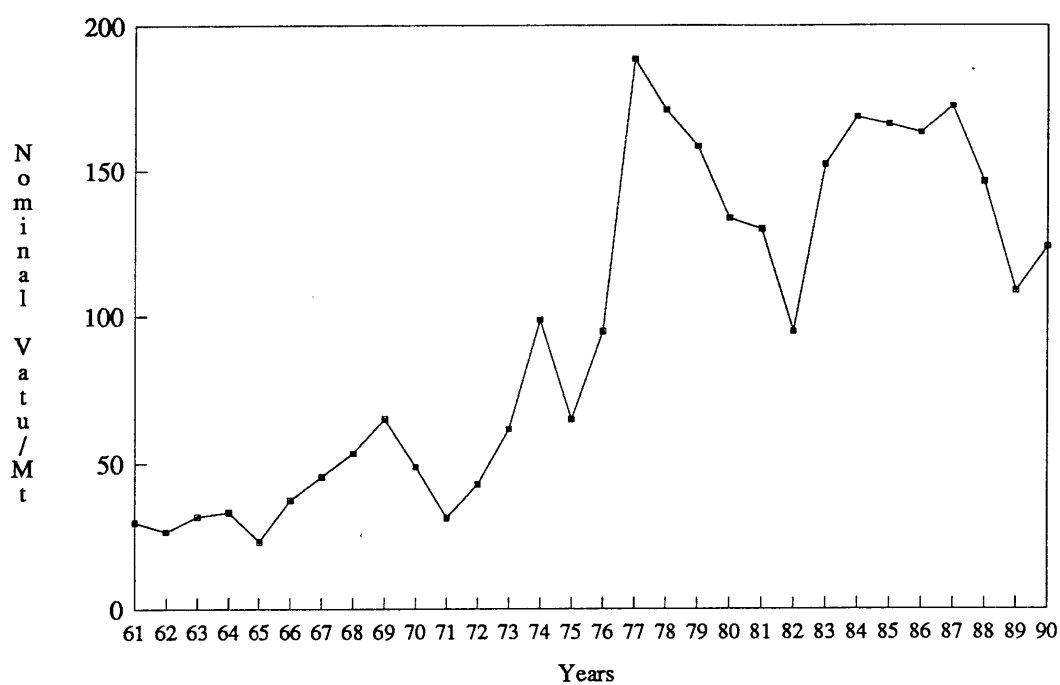
Source: Appendix 5.10.

Appendix Figure 5.4a: Cocoa export volumes (nominal quantities in mt), Vanuatu, 1961–1990



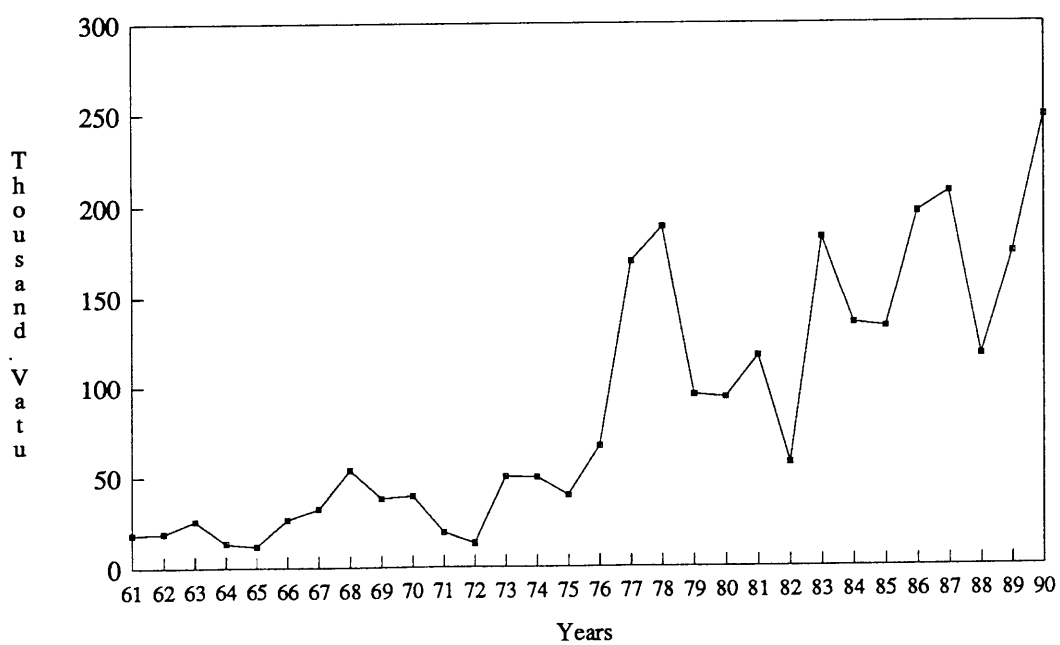
Source: Appendix 5.11.

Appendix Figure 5.4b: Cocoa export prices (nominal vatu/mt), Vanuatu, 1961–1990



Source: Appendix 5.11.

Appendix Figure 5.4c: Cocoa export values (nominal vatu), Vanuatu, 1961–1990



Source: Appendix 5.11.

Appendix 6.1: Percentage share (decade averages) of total exports in GDP for Melanesian countries

The selected SPINs

Period	Fiji	PNG	Solomon Islands	Vanuatu
1960s	32	17	23	na
1970s	25	35	36	na
1980s	26	37	45	24

Note: na = not available at the time this study was conducted.

Sources: Computed from Appendix 6.3.

Appendix 6.2a: Percentage share (5-year averages) of major commodity sectors in total exports for Fiji

Period	Percentage share of:				
	Agriculture	Minerals	Forestry products	Marine products	Other
1961–65	69	7	1	na	23
1966–70	62	6	1	na	31
1971–75	61	6	1	na	32
1976–80	61	4	1	3	31
1981–85	50	7	1	5	37
1985–90	44	13	3	6	34

Note: na = not available at the time this study was conducted.

Sources: Computed from Appendix 6.4a.

Appendix 6.2b: Percentage share (5-year averages) of major commodity sectors in total exports for PNG

Percentage share of:

Period	Agriculture	Minerals	Forestry products	Marine products	Other
1961–65	73	3	3	2	19
1966–70	72	1	4	2	21
1971–75	33	49	4	3	11
1976–80	42	42	3	4	9
1981–85	33	50	7	2	8
1985–90	23	62	7	1	7

Sources: Computed from Appendix 6.4b.

Appendix 6.2c: Percentage share (5-year averages) of major commodity sectors in total exports for SI

Solomon Islands				
Period	Agriculture	Forestry products	Marine products	Other
1961–65	87	5	1	7
1966–70	65	27	1	7
1971–75	37	31	23	9
1976–80	36	27	31	6
1981–85	34	29	33	4
1985–90	22	28	43	7

Sources: Computed from Appendix 6.4c.

Appendix 6.2d: Percentage share (5-year averages) of major commodity sectors in total exports for Vanuatu

Period	Percentage share of:			
	Agriculture	Forestry products	Marine products	Other
1961–65	70	na	na	30
1966–70	56	na	na	44
1971–75	42	na	na	58
1976–80	51	1	22	26
1981–85	53	2	27	18
1985–90	54	6	23	17

Note: na = not available at the time this study was conducted.
Sources: Computed from Appendix 6.4d.

Appendix 6.3: Percentage share of exports in GDP for selected SPINs, 1960–93

Year	Selected SPINs			
	Fiji	PNG	Solomon Islands	Vanuatu
1960	35.23	na	25.00	na
1961	27.54	15.74	24.71	na
1962	30.42	15.26	20.00	na
1963	37.74	16.16	22.22	na
1964	41.24	17.66	22.06	na
1965	31.92	18.08	25.23	na
1966	28.50	15.72	18.03	na
1967	28.63	15.63	22.62	na
1968	29.89	18.04	22.06	na
1969	29.65	19.65	25.17	na
1970	32.52	17.48	25.08	na
1971	29.13	17.09	29.68	na
1972	25.09	28.60	28.76	na
1973	22.01	45.76	26.73	na
1974	27.49	43.40	35.94	na
1975	25.30	33.46	23.13	na
1976	19.65	40.74	32.88	na
1977	23.24	38.28	40.25	na
1978	20.99	32.83	38.39	na
1979	25.22	38.74	52.57	34.77
1980	31.06	37.29	50.94	31.62
1981	25.47	30.91	40.94	32.66
1982	24.04	30.05	35.66	23.31
1983	21.44	32.04	40.68	28.98
1984	21.97	36.02	53.02	35.62
1985	20.64	38.55	44.12	25.95
1986	21.36	38.84	45.90	15.12
1987	26.61	39.71	43.60	14.50
1988	28.97	40.63	46.48	13.77
1989	33.91	36.88	44.99	15.66
1990	35.02	36.49	41.70	12.30
1991	29.82	38.56	44.79	na
1992	28.33	41.80	50.45	na
1993	26.36	48.80	na	na

Note: na = not available at the time this computation was done.

Sources: Computed from IMF (various issues), NCDS (1992a b c d), Government reports (various issues).

Appendix 6.4a: Percentage share of major commodity sectors in total exports for Fiji, 1960–90

Percentage share of:					
Year	Agriculture	Minerals	Forestry products	Marine products	Other
1960	70	6	–	–	24
1961	62	9	–	–	29
1962	63	8	–	–	29
1963	74	7	–	–	19
1964	78	5	1	–	16
1965	68	7	1	–	24
1966	64	8	1	–	27
1967	63	7	1	–	29
1968	60	7	1	–	32
1969	61	6	1	–	32
1970	60	5	–	–	35
1971	60	4	–	–	36
1972	57	6	–	–	37
1973	55	8	1	–	36
1974	64	7	1	–	28
1975	71	6	–	–	23
1976	60	6	1	1	32
1977	63	4	–	2	31
1978	58	3	1	5	33
1979	63	3	1	6	27
1980	63	4	1	3	29
1981	55	4	1	6	34
1982	51	6	1	3	39
1983	51	7	1	6	35
1984	48	7	2	5	38
1985	46	8	1	4	41
1986	47	12	1	5	35
1987	53	13	3	6	25
1988	48	18	4	9	21
1989	35	11	2	6	46
1990	38	10	2	5	45

Note: – = less than 1%.

Sources: Computed from IMF (various issues), NCDS (1992a), Fiji Government (various reports).

Appendix 6.4b: Percentage share of major commodity sectors in total exports for PNG, 1960–90

Percentage share of:					
Year	Agriculture	Minerals	Forestry products	Marine products	Other
1960	67	4	2	1	26
1961	68	4	2	2	24
1962	77	4	4	2	13
1963	76	3	4	2	15
1964	81	3	3	2	11
1965	68	2	3	2	25
1966	74	2	5	2	17
1967	83	1	5	3	8
1968	74	1	4	1	20
1969	66	1	3	1	29
1970	64	1	4	3	28
1971	48	22	7	5	18
1972	29	49	4	3	15
1973	27	59	2	1	11
1974	29	53	4	3	11
1975	31	60	3	3	3
1976	40	33	3	4	20
1977	53	36	3	4	4
1978	45	45	3	5	2
1979	39	51	4	3	3
1980	33	45	4	5	13
1981	29	52	6	5	8
1982	29	52	9	1	9
1983	31	53	6	1	9
1984	44	39	8	1	8
1985	34	52	6	1	7
1986	32	55	7	1	5
1987	23	63	9	1	4
1988	19	68	7	1	5
1989	24	59	8	1	8
1990	16	67	6	1	10

Sources: Computed from IMF (various issues), NCDS (1992b), PNG Government (various reports).

Appendix 6.4c: Percentage share of major commodity sectors in total exports for SI, 1960–90

Percentage share of:				
Year	Agriculture	Forestry products	Marine products	Other
1960	84	4	1	11
1961	83	3	4	10
1962	87	6	2	5
1963	90	5	1	4
1964	87	9	1	3
1965	92	5	1	2
1966	81	12	1	6
1967	72	21	1	6
1968	66	25	1	8
1969	54	38	1	7
1970	52	40	2	6
1971	43	36	14	7
1972	20	30	40	10
1973	30	40	17	13
1974	50	23	21	6
1975	40	26	25	9
1976	25	31	38	6
1977	39	27	28	6
1978	48	22	23	7
1979	40	27	29	4
1980	30	26	39	5
1981	29	28	39	4
1982	29	40	25	6
1983	27	28	43	2
1984	44	25	25	6
1985	40	24	32	4
1986	16	31	47	6
1987	19	29	44	8
1988	22	23	48	7
1989	28	24	41	7
1990	23	34	33	10

Sources: Computed from IMF (various issues), NCDS (1992c), SI Government (various reports).

Appendix 6.4d: Percentage share of major commodity sectors in total exports for Vanuatu, 1960–90

Year	Percentage share of:			
	Agriculture	Forestry products	Marine products	Other
1960	78	na	na	22
1961	77	na	na	23
1962	64	na	na	36
1963	73	na	na	27
1964	67	na	na	33
1965	62	na	na	38
1966	53	na	na	47
1967	59	na	na	41
1968	61	na	na	39
1969	59	na	na	41
1970	48	na	na	52
1971	38	na	na	62
1972	17	na	na	83
1973	32	na	na	68
1974	68	na	na	32
1975	55	na	na	45
1976	51	na	na	49
1977	54	na	na	46
1978	56	1	36	7
1979	62	2	29	7
1980	33	–	45	22
1981	48	1	29	22
1982	43	1	31	25
1983	57	1	27	15
1984	65	3	15	17
1985	54	4	32	10
1986	44	3	42	11
1987	61	11	13	15
1988	64	5	17	14
1989	46	8	28	18
1990	56	4	12	28

Notes: na = not available at the time this study was conducted. – = less than 1%.

Sources: Computed from IMF (various issues), NCDS (1992d), Vanuatu Government (1984), AIDAB (1994).

Appendix 6.5: Impulse responses for selected SPINs

Year	Responses from export shocks	
	Exports	GDP
FIJI		
VAR in Levels		
1	0.1294	0.0000
2	0.0669	-0.0114
3	0.0297	-0.0179
4	0.0078	-0.0215
5	-0.0050	-0.0233
8	-0.0188	-0.0240
10	-0.0202	-0.0231
13	-0.0195	-0.0213
15	-0.0186	-0.0201
20	-0.0160	-0.0172
VAR in 1st Differences		
1	0.1725	0.0504
2	0.0149	0.0227
3	0.0073	0.0111
4	0.0036	0.0054
5	0.0017	0.0026
8	0.0002	0.0003
10	0.0001	0.0001
13	0.0000	0.0000
15	0.0000	0.0000
20	0.0000	0.0000

Note: Impulse responses to one-standard deviation shock in exports.

Appendix 6.5: continued (impulse responses)

Year	Responses from export shocks	
	Exports	GDP
PNG		
VAR in Levels		
1	0.1329	0.0000
2	0.1205	0.0280
3	0.1118	0.0447
4	0.1053	0.0545
5	0.1003	0.0596
8	0.0898	0.0630
10	0.0845	0.0612
13	0.0775	0.0571
15	0.0733	0.0542
20	0.0638	0.0473
VAR in 1st Differences		
1	0.1937	0.0591
2	0.0707	0.0592
3	-0.0087	0.0124
4	-0.0170	-0.0063
5	-0.0051	-0.0049
8	0.0003	0.0004
10	-0.0001	-0.0001
13	0.0000	0.0000
15	-0.0000	-0.0000
20	0.0000	0.0000
ECMs		
1	0.1216	0.0000
2	0.0872	0.0401
3	-0.0553	0.0045
4	-0.0681	-0.0350
5	0.0176	-0.0114
8	-0.0187	-0.0102
10	0.0121	0.0065
13	0.0036	-0.0014
15	-0.0022	0.0009
20	-0.0012	-0.0007

Note: Impulse responses to one-standard deviation shock in exports.

Appendix 6.5: continued (impulse responses)

Year	Responses from export shocks	
	Exports	GDP
SOLOMON ISLANDS		
VAR in Levels		
1	0.2103	0.0856
2	0.1169	0.0807
3	0.1065	0.0788
4	0.1036	0.0772
5	0.1014	0.0756
8	0.0954	0.0711
10	0.0915	0.0682
13	0.0861	0.0642
15	0.0826	0.0616
20	0.0745	0.0556
VAR in 1st Differences		
1	0.2322	0.0802
2	-0.0634	0.0056
3	0.0343	0.0068
4	-0.0125	-0.0007
5	0.0056	0.0008
8	-0.0004	0.0000
10	-0.0001	-0.0000
13	0.0000	-0.0571
15	0.0000	0.0000
20	0.0000	0.0000
ECMs		
1	0.1469	0.0000
2	-0.0703	-0.0106
3	0.0273	0.0021
4	-0.0118	-0.0014
5	0.0048	0.0005
8	-0.0004	-0.0001
10	-0.0001	-0.0000
13	0.0000	0.0000
15	0.0000	0.0000
20	-0.0000	-0.0000

Notes: Impulse responses to one-standard deviation shock in exports.

Appendix 7.1: Sample instruction program for unit roots and cointegration testing on SHAZAM, Fiji

```

file 33 fij.pm
sample 1 33
read(33) Pd WGDP WCPI GDP EXP EXR
print Pd WGDP WCPI GDP EXP EXR
genr LWGDP = log(WGDP)
genr LWCPI = log(WCPI)
genr LGDP = log(GDP)
genr LEXP = log(EXP)
genr LEXR = log(EXR)
print LWGDP LWCPI LGDP LEXP LEXR
genr DLWGDP = LWGDP - lag(LWGDP)
genr DLWCPI = LWCPI - lag(LWCPI)
genr DLGDP = LGDP - lag(LGDP)
genr DLEXP = LEXP - lag(LEXP)
genr DLEXR = LEXR - lag(LEXR)
print DLWGDP DLWCPI DLGDP DLEXP DLEXR

```

***** UNIT ROOTS TESTS IN LOG LEVELS *****

***** ADF Unit Roots in Log Levels *****

```

coint WGDP/type = df log max
coint WCPI/type = df log max
coint GDP/type = df log max
coint EXP/type = df log max
coint EXR/type = df log max

```

***** PP Unit Roots in Log Levels *****

```

coint WGDP/type = pp log nlag=1 max
coint WGDP/type = pp log nlag=2 max
coint WGDP/type = pp log max
coint WCPI/type = pp log nlag=1 max
coint WCPI/type = pp log nlag=2 max
coint WCPI/type = pp log max
coint GDP/type = pp log nlag=1 max
coint GDP/type = pp log nlag=2 max
coint GDP/type = pp log max
coint EXP/type = pp log nlag=1 max
coint EXP/type = pp log nlag=2 max
coint EXP/type = pp log max
coint EXR/type = pp log max
coint EXR/type = pp log nlag=1 max
coint EXR/type = pp log nlag=2 max

```


Appendix 7.1: continued (unit roots and cointegration tests)

***** PC Unit Roots in Log Levels *****

***** PC for LWGDP *****

```

genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
?ols LWGDP ao/noco
gen1 rss1 = $sse
?ols LWGDP Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
?ols LWGDP Pd1/noco
gen1 rssa = $sse
?ols LWGDP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5

```

***** PC for LWCPI *****

```

genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
?ols LWCPI ao/noco
gen1 rss1 = $sse
?ols LWCPI Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
?ols LWCPI Pd1/noco
gen1 rssa = $sse
?ols LWCPI Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5

```

Appendix 7.1: continued (unit roots and cointegration tests)

***** PC for LGDP *****

```

genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
?ols LGDP ao/noco
gen1 rss1 = $sse
?ols LGDP Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
?ols LGDP Pd1/noco
gen1 rssa = $sse
?ols LGDP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5

```

***** PC for LEXP *****

```

genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
?ols LEXP ao/noco
gen1 rss1 = $sse
?ols LEXP Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
?ols LEXP Pd1/noco
gen1 rssa = $sse
?ols LEXP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5

```

***** PC for LEXR *****

```

genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5

```

Appendix 7.1: continued (unit roots and cointegration tests)

```

print Pd1 Pd2 Pd3 Pd4 Pd5
?ols LEXR ao/noco
gen1 rss1 = $sse
?ols LEXR Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
?ols LEXR Pd1/noco
gen1 rssa = $sse
?ols LEXR Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5

```

***** COINTEGRATION TESTS *****

**** ADF coint in log forms for LEXP LWGDP LWCPI LGDP LEXR ***

```
coint LEXP LWGDP LWCPI LGDP LEXR/type=resd max
```

*** PP coint in log forms for LEXP LWGDP LWCPI LGDP LEXR ****

```

coint LEXP LWGDP LWCPI LGDP LEXR/type=resp nlag=1
coint LEXP LWGDP LWCPI LGDP LEXR/type=resp nlag=2
coint LEXP LWGDP LWCPI LGDP LEXR/type=resp max

```

**** POC coint in log forms for LEXP LWGDP LWCPI LGDP LEXR ***

***** in Log levels *****

```

genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
ols LEXP LWGDP LWCPI LGDP LEXR
gen1 rss1a=$sse
?ols LEXP LWGDP LWCPI LGDP LEXR Pd1 Pd2 Pd3
gen1 rss2a=$sse
gen1 j2poca=(rss1a-rss2a)/rss2a
ols LEXP LWGDP LWCPI LGDP LEXR Pd1
gen1 rss1b=$sse
?ols LEXP LWGDP LWCPI LGDP LEXR Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rss2b=$sse
gen1 j2pocb=(rss1b-rss2b)/rss2b
print j2poca
print j2pocb

```

Appendix 7.1: continued (unit roots and cointegration tests)

***** ADF coint in log forms for LEXP LWGDP LWCPI *****

coint LEXP LWGDP LWCPI/type=resd max

***** PP coint in log forms for LEXP LWGDP LWCPI *****

coint LEXP LWGDP LWCPI/type=resp nlag=1
 coint LEXP LWGDP LWCPI/type=resp nlag=2
 coint LEXP LWGDP LWCPI/type=resp max

***** POC coint in log forms for LEXP LWGDP LWCPI *****

***** in Log levels *****

```

genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
ols LEXP LWGDP LWCPI
gen1 rss1a=$sse
?ols LEXP LWGDP LWCPI Pd1 Pd2 Pd3
gen1 rss2a=$sse
gen1 j2poca=(rss1a-rss2a)/rss2a
ols LEXP LWGDP LWCPI Pd1
gen1 rss1b=$sse
?ols LEXP LWGDP LWCPI Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rss2b=$sse
gen1 j2pocb=(rss1b-rss2b)/rss2b
print j2poca
print j2pocb

```

***** ADF coint in log forms for LEXP LGDP LEXR *****

coint LEXP LGDP LEXR/type=resd max

***** PP coint in log forms for LEXP LGDP LEXR *****

coint LEXP LGDP LEXR/type=resp nlag=1
 coint LEXP LGDP LEXR/type=resp nlag=2
 coint LEXP LGDP LEXR/type=resp max

Appendix 7.1: continued (unit roots and cointegration tests)

***** POC point in log forms for LEXP LGDP LEXR *****

***** in Log levels *****

```

genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
ols LEXP LGDP LEXR
gen1 rss1a=$sse
?ols LEXP LGDP LEXR Pd1 Pd2 Pd3
gen1 rss2a=$sse
gen1 j2poca=(rss1a-rss2a)/rss2a
ols LEXP LGDP LEXR Pd1
gen1 rss1b=$sse
?ols LEXP LGDP LEXR Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rss2b=$sse
gen1 j2pocb=(rss1b-rss2b)/rss2b
print j2poca
print j2pocb

```

***** ADF coint in log forms for LEXP LWGDP *****

coint LEXP LWGDP/type=resd max

***** PP coint in log forms for LEXP LWGDP *****

```

coint LEXP LWGDP/type=resp nlag=1
coint LEXP LWGDP/type=resp nlag=2
coint LEXP LWGDP/type=resp max

```

***** POC coint in log forms for LEXP LWGDP *****

***** in Log levels *****

```

genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
ols LEXP LWGDP
gen1 rss1a=$sse
?ols LEXP LWGDP Pd1 Pd2 Pd3
gen1 rss2a=$sse
gen1 j2poca=(rss1a-rss2a)/rss2a
ols LEXP WGD Pd1

```

Appendix 7.1: continued (unit roots and cointegration tests)

```

gen1 rss1b=$sse
?ols LEXP LWGDP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rss2b=$sse
gen1 j2pocb=(rss1b-rss2b)/rss2b
print j2poca
print j2pocb

```

***** ADF coint in log forms for LEXP LWCPI *****

```

coint LEXP LWCPI/type=resd max

```

***** PP coint in log forms for LEXP LWCPI *****

```

coint LEXP LWCPI/type=resp nlag=1
coint LEXP LWCPI/type=resp nlag=2
coint LEXP LWCPI/type=resp max

```

***** POC coint in log forms for LEXP LWCPI *****

***** in Log levels *****

```

genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
ols LEXP LWCPI
gen1 rss1a=$sse
?ols LEXP LWCPI Pd1 Pd2 Pd3
gen1 rss2a=$sse
gen1 j2poca=(rss1a-rss2a)/rss2a
ols LEXP LWCPI Pd1
gen1 rss1b=$sse
?ols LEXP LWCPI Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rss2b=$sse
gen1 j2pocb=(rss1b-rss2b)/rss2b
print j2poca
print j2pocb

```

***** ADF coint in log forms for LEXP LGDP *****

```

coint LEXP LGDP/type=resd max

```

Appendix 7.1: continued (unit roots and cointegration tests)

***** PP point in log forms for LEX LGDP *****

```
coint LEXP LGDP/type=resp nlag=1
coint LEXP LGDP/type=resp nlag=2
coint LEXP LGDP/type=resp max
```

***** POC point in log forms for LEXP LGDP *****

***** in Log levels *****

```
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
ols LEXP LGDP
gen1 rss1a=$sse
?ols LEXP LGDP Pd1 Pd2 Pd3
gen1 rss2a=$sse
gen1 j2poca=(rss1a-rss2a)/rss2a
ols LEXP LGDP Pd1
gen1 rss1b=$sse
?ols LEXP LGDP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rss2b=$sse
gen1 j2pocb=(rss1b-rss2b)/rss2b
print j2poca
print j2pocb
```

***** ADF point in log forms for LEXP LEXR ****

```
coint LEXP LEXR/type=resd max
```

***** PP point in log forms for LEXP LEXR *****

```
coint LEXP LEXR/type=resp nlag=1
coint LEXP LEXR/type=resp nlag=2
coint LEXP LEXR/type=resp max
```

***** POC point in log forms for LEXP LEXR *****

***** in Log levels *****

```
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
```

Appendix 7.1: continued (unit roots and cointegration tests)

```

print Pd1 Pd2 Pd3 Pd4 Pd5
ols LEXP LEXR
gen1 rss1a=$sse
?ols LEXP LEXR Pd1 Pd2 Pd3
gen1 rss2a=$sse
gen1 j2poca=(rss1a-rss2a)/rss2a
ols LEXP LEXR Pd1
gen1 rss1b=$sse
?ols LEXP LEXR Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rss2b=$sse
gen1 j2pocb=(rss1b-rss2b)/rss2b
print j2poca
print j2pocb

```

***** UNIT ROOTS TESTS IN FIRST DIFFERENCES *****

***** ADF Unit Roots in First Differences *****

```

coint WGDG/type = df log ndiff=1 max
coint WCPI/type = df log ndiff=1 max
coint GDP/type = df log ndiff=1 max
coint EXP/type = df log ndiff=1 max
coint EXR/type = df log ndiff=1 max

```

***** PP Unit Roots in First Differences *****

```

coint WGDG/type = pp log ndiff=1 nlag=1 max
coint WGDG/type = pp log ndiff=1 nlag=2 max
coint WGDG/type = pp log ndiff=1 max
coint WCPI/type = pp log ndiff=1 nlag=1 max
coint WCPI/type = pp log ndiff=1 nlag=2 max
coint WCPI/type = pp log ndiff=1 max
coint GDP/type = pp log ndiff=1 nlag=1 max
coint GDP/type = pp log ndiff=1 nlag=2 max
coint GDP/type = pp log ndiff=1 max
coint EXP/type = pp log ndiff=1 nlag=1 max
coint EXP/type = pp log ndiff=1 nlag=2 max
coint EXP/type = pp log ndiff=1 max
coint EXR/type = pp log ndiff=1 nlag=1 max
coint EXR/type = pp log ndiff=1 nlag=2 max
coint EXR/type = pp log ndiff=1 max

```


Appendix 7.1: continued (unit roots and cointegration tests)

***** PC Unit Roots in Log First Differences *****

***** PC for LWGDP (DLWGDP) in First Difference *****

```

genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
sample 2 31
?ols DLWGDP ao/noco
gen1 rss1 = $sse
sample 2 31
?ols DLWGDP Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
sample 2 31
?ols DLWGDP Pd1/noco
gen1 rssa = $sse
sample 2 31
?ols DLWGDP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5

```

***** PC for LWCPI (DLWCPI) in First Difference *****

```

genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
sample 2 31
?ols DLWCPI ao/noco
gen1 rss1 = $sse
sample 2 31
?ols DLWCPI Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
sample 2 31
?ols DLWCPI Pd1/noco
gen1 rssa = $sse
sample 2 31

```

Appendix 7.1: continued (unit roots and cointegration tests)

```
?ols DLWCPI Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5
```

***** PC for LGDP (DLGDP) in First Difference *****

```
genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
sample 2 31
?ols DLGDP ao/noco
gen1 rss1 = $sse
sample 2 31
?ols DLGDP Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
sample 2 31
?ols DLGDP Pd1/noco
gen1 rssa = $sse
sample 2 31
?ols DLGDP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5
```

***** PC for LEXP (DLEXP) in First Difference *****

```
genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
sample 2 31
?ols DLEXP ao/noco
gen1 rss1 = $sse
sample 2 31
?ols DLEXP Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
sample 2 31
?ols DLEXP Pd1/noco
gen1 rssa = $sse
sample 2 31
```

Appendix 7.1: continued (unit roots and cointegration tests)

```
?ols DLEXP Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5
```

***** PC for LEXR (DLEXR) in First Difference *****

```
genr ao = (1)
genr Pd1=Pd
genr Pd2=Pd**2
genr Pd3=Pd**3
genr Pd4=Pd**4
genr Pd5=Pd**5
print Pd1 Pd2 Pd3 Pd4 Pd5
sample 2 31
?ols DLEXR ao/noco
gen1 rss1 = $sse
sample 2 31
?ols DLEXR Pd1 Pd2 Pd3
gen1 rss2 = $sse
gen1 j2pc3 = (rss1-rss2)/rss2
sample 2 31
?ols DLEXR Pd1/noco
gen1 rssa = $sse
sample 2 31
?ols DLEXR Pd1 Pd2 Pd3 Pd4 Pd5
gen1 rssb = $sse
gen1 j2pc5 = (rssa-rssb)/rssb
print j2pc3 j2pc5
```

```
stop
```

Appendix 7.2: Causality, FEDA and IRA sample instruction programs based on VAR models and ECMs on RATS for PNG's CERV analysis

*** The VAR-based causality, FEDA and IRA procedure ****

```

*
* no 1 WGDG
* 2 WCPI
* 3 GDP
* 4 EXPT
* 5 EXR
bma global 1000
release 1000
cal 1961 1 1
all 0 1993:1
open data a:\png1.prn
open output a:\causal.out
* print
data(org=obs) 1961:1 1993:1 WGDG WCPI GDP EXPT EXR
set LWGDG = log(WGDG(t))
set LWCPI = log(WCPI(t))
set LGDP = log(GDP(t))
set LEXPT = log(EXPT(t))
set LEXR = log(EXR(t))
*
set LWGDG = LWGDG(t)
set LWCPI = LWCPI(t)
set LGDP = LGDP(t)
set LEXPT = LEXPT(t)
set LEXR = LEXR(t)
statistics
*
set trend 1961:1 1993:1 = t
set t2 = t**2
set t3 = t**3
set t4 = t3(t)*t
set t5 = t4(t)*t
*
set DLWGDG = LWGDG(t)-LWGDG(t-1)
set DLWCPI = LWCPI(t)-LWCPI(t-1)
set DLGDP = LGDP(t)-LGDP(t-1)
set DLEXPT = LEXPT(t)-LEXPT(t-1)
set DLEXR = LEXR(t)-LEXR(t-1)

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** LAG LENGTH TESTS *****

*** VAR MODELS: Lag length in Levels for LEXPT ---> LWGDP LWCPI LGDP LEXR
CMOM

CONSTANT LEXPT{0 to 4} LWGDP{0 to 4} LWCPI{0 to 4} LGDP{0 to 4} \$
LEXR{0 to 4}

DO MAXLAG=1,4

LINREG(CMOM,NOPRINT) LEXPT

CONSTANT LEXPT{1 to maxlag} LWGDP{1 to maxlag} LWCPI{1 to maxlag} \$
LGDP{1 to maxlag} LEXR{1 to maxlag}

EVAL AKAIKE=(RSS+ 2.0 *nreg*SEESQ)/nobs

EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs

IF MAXLAG==1

DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'

DISPLAY @5 ##### MAXLAG @20 ###.#### AKAIKE @35 ###.#### SCHWARZ

END DO

*

*

** Lag length test for LEXPT ---> LWGDP LWCPI

CMOM

CONSTANT LEXPT{0 to 4} LWGDP{0 to 4} LWCPI{0 to 4}

DO MAXLAG=1,4

LINREG(CMOM,NOPRINT) LEXPT

CONSTANT LEXPT{1 to maxlag} LWGDP{1 to maxlag} LWCPI{1 to maxlag}

EVAL AKAIKE=(RSS+ 2.0 *nreg*SEESQ)/nobs

EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs

IF MAXLAG==1

DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'

DISPLAY @5 ##### MAXLAG @20 ###.#### AKAIKE @35 ###.#### SCHWARZ

END DO

*

*

** Lag length test for LEXPT ---> LWGDP

CMOM

CONSTANT LEXPT{0 to 4} LWGDP{0 to 4}

DO MAXLAG=1,4

LINREG(CMOM,NOPRINT) LEXPT

CONSTANT LEXPT{1 to maxlag} LWGDP{1 to maxlag}

EVAL AKAIKE=(RSS+ 2.0 *nreg*SEESQ)/nobs

EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs

IF MAXLAG==1

DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'

DISPLAY @5 ##### MAXLAG @20 ###.#### AKAIKE @35 ###.#### SCHWARZ

END DO

*

** Lag length test for LEXPT ---> LWCPI

CMOM

CONSTANT LEXPT{0 to 4} LWCPI{0 to 4}

DO MAXLAG=1,4

LINREG(CMOM,NOPRINT) LEXPT

CONSTANT LEXPT{1 to maxlag} LWCPI{1 to maxlag}

EVAL AKAIKE=(RSS+ 2.0 *nreg*SEESQ)/nobs

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
IF MAXLAG==1
  DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
  DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
END DO

```

```

** VAR MODELS: Lag length in Levels for LEXPT ---> lgdp lexr
CMOM
# CONSTANT lext{0 to 4} lgdp{0 to 4} lexr{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) lext
  # CONSTANT lext{1 to maxlag} lgdp{1 to maxlag} lexr{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO

```

*

*

```

** Lag length test for LEXPT ---> LGDP
CMOM
# CONSTANT LEXPT{0 to 4} LGDP{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) LEXPT
  # CONSTANT LEXPT{1 to maxlag} LGDP{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO

```

*

*

```

** Lag length test for LEXPT ---> LEXR
CMOM
# CONSTANT LEXPT{0 to 4} LEXR{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) LEXPT
  # CONSTANT LEXPT{1 to maxlag} LEXR{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

***** VAR MODELS: Lag length tests in 1st Differences *****
*
** Lag length test for DLEXPT ---> DLWGDP DLWCPI DLGDP DLEXR
CMOM
# CONSTANT DLEXPT{0 to 4} DLWGDP{0 to 4} DLWCPI{0 to 4} DLGDP{0 to 4} $
DLEXR{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) DLEXPT
  # CONSTANT DLEXPT{1 to maxlag} DLWGDP{1 to maxlag} DLWCPI{1 to maxlag} $
DLGDP{1 to maxlag} DLEXR{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO
*
*
** Lag length test for DLEXPT ---> DLWGDP DLWCPI
CMOM
# CONSTANT DLEXPT{0 to 4} DLWGDP{0 to 4} DLWCPI{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) DLEXPT
  # CONSTANT DLEXPT{1 to maxlag} DLWGDP{1 to maxlag} DLWCPI{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO
*
*
** Lag length test for DLEXPT ---> DLWGDP
CMOM
# CONSTANT DLEXPT{0 to 4} DLWGDP{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) DLEXPT
  # CONSTANT DLEXPT{1 to maxlag} DLWGDP{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO

** Lag length test for DLEXPT ---> DLWCPI
CMOM
# CONSTANT DLEXPT{0 to 4} DLWCPI{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) DLEXPT
  # CONSTANT DLEXPT{1 to maxlag} DLWCPI{1 to maxlag}

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
IF MAXLAG==1
  DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
  DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
END DO
*
*
** VAR MODELS: Lag length test for DLEXPT ---> dlgdp dlexr
CMOM
# CONSTANT dlexpt{0 to 4} dlgdp{0 to 4} dlexr{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) dlexpt
  # CONSTANT dlexpt{1 to maxlag} dlgdp{1 to maxlag} dlexr{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO

** Lag length test for DLEXPT ---> DLGDP
CMOM
# CONSTANT DLEXPT{0 to 4} DLGDP{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) DLEXPT
  # CONSTANT DLEXPT{1 to maxlag} DLGDP{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO
*
*
** Lag length test for DLEXPT ---> DLEXR
CMOM
# CONSTANT DLEXPT{0 to 4} DLEXR{0 to 4}
DO MAXLAG=1,4
  LINREG(CMOM,NOPRINT) DLEXPT
  # CONSTANT DLEXPT{1 to maxlag} DLEXR{1 to maxlag}
  EVAL AKAIKE =(RSS+ 2.0 *nreg*SEESQ)/nobs
  EVAL SCHWARZ=(RSS+LOG(nobs)*nreg*SEESQ)/nobs
  IF MAXLAG==1
    DISPLAY @4 'LAGS' @20 'AKAIKE' @35 'SCHWARZ'
    DISPLAY @5 ##### MAXLAG @20 ###.##### AKAIKE @35 ###.##### SCHWARZ
  END DO

```


Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** CAUSALITY TESTS IN VAR MODELS *****

***** In Levels *****

* HO1: External and domestic factors ---- x --- > CERV (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LWGDP{1 to 1} LWCPI{1 to 1} LGDP{1 to 1} LEXR{1 to 1} \$
LEXPT{1 to 1}

exclude

LWGDP{1 to 1} LWCPI{1 to 1} LGDP{1 to 1} LEXR{1 to 1}

*

* HO1: External and domestic factors ---- x --- > CERV (Lag 2)

*

linreg LEXPT 1963:1 1993:1

constant LWGDP{1 to 2} LWCPI{1 to 2} LGDP{1 to 2} LEXR{1 to 2} \$
LEXPT{1 to 2}

exclude

LWGDP{1 to 2} LWCPI{1 to 2} LGDP{1 to 2} LEXR{1 to 2}

* HO2: External factors ----- x ----- > CERV (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LWGDP{1 to 1} LWCPI{1 to 1} LEXPT{1 to 1}

exclude

LWGDP{1 to 1} LWCPI{1 to 1}

*

* HO2: External factors ----- x ----- > CERV (Lag 3)

*

linreg LEXPT 1964:1 1993:1

constant LWGDP{1 to 3} LWCPI{1 to 3} LEXPT{1 to 3}

exclude

LWGDP{1 to 3} LWCPI{1 to 3}

*

*

* HO3: World GDP ----- x ----- > CERV (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LWGDP{1 to 1} LEXPT{1 to 1}

exclude

LWGDP{1 to 1}

* HO3: World GDP ----- x ----- > CERV (Lag 3)

*

linreg LEXPT 1964:1 1993:1

constant LWGDP{1 to 3} LEXPT{1 to 3}

exclude

LWGDP{1 to 3}

*

*

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

* HO4: World CPI ----- x ----- > CERV (Lag 1)
linreg LEXPT 1962:1 1993:1
# constant LWCP1{1 to 1} LEXPT{1 to 1}
exclude
# LWCP1{1 to 1}
*
* HO4: World CPI ----- x ----- > CERV (Lag 3)
linreg LEXPT 1964:1 1993:1
# constant LWCP1{1 to 3} LEXPT{1 to 3}
exclude
# LWCP1{1 to 3}
*
*
* HO5: Domestic factors ----- x ----- > CERV (Lag 1)
*
linreg LEXPT 1962:1 1993:1
# constant LGDP{1 to 1} LEXR{1 to 1} LEXPT{1 to 1}
exclude
# LGDP{1 to 1} LEXR{1 to 1}
*
* HO5: Domestic factors ----- x ----- > CERV (Lag 3)
*
linreg LEXPT 1964:1 1993:1
# constant LGDP{1 to 3} LEXR{1 to 3} LEXPT{1 to 3}
exclude
# LGDP{1 to 3} LEXR{1 to 3}

* HO6: Domestic GDP ----- x ----- > CERV (Lag 1)
*
linreg LEXPT 1962:1 1993:1
# constant LGDP{1 to 1} LEXPT{1 to 1}
exclude
# LGDP{1 to 1}
*
* HO6: Domestic GDP ----- x ----- > CERV (Lag 3)
*
linreg LEXPT 1964:1 1993:1
# constant LGDP{1 to 3} LEXPT{1 to 3}
exclude
# LGDP{1 to 3}

* HO6: Domestic GDP ----- x ----- > CERV (Lag 4)
*
linreg LEXPT 1965:1 1993:1
# constant LGDP{1 to 4} LEXPT{1 to 4}
exclude
# LGDP{1 to 4}
*

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

* HO7: Domestic EXPT ----- x ----- > GDP (Lag 1)

*

linreg LGDP 1962:1 1993:1

constant LEXPT{1 to 1} LGDP{1 to 1}

exclude

LEXPT{1 to 1}

*

* HO7: Domestic EXPT ----- x ----- > GDP (Lag 3)

*

linreg LGDP 1964:1 1993:1

constant LEXPT{1 to 3} LGDP{1 to 3}

exclude

LEXPT{1 to 3}

*

* HO7: Domestic EXPT ----- x ----- > GDP (Lag 4)

*

linreg LGDP 1965:1 1993:1

constant LEXPT{1 to 4} LGDP{1 to 4}

exclude

LEXPT{1 to 4}

*

* HO8a: Domestic EXR ----- x ----- > CERV (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LEXR{1 to 1} LEXPT{1 to 1}

exclude

LEXR{1 to 1}

*

* HO8a: Domestic EXR ----- x ----- > CERV (Lag 3)

*

linreg LEXPT 1964:1 1993:1

constant LEXR{1 to 3} LEXPT{1 to 3}

exclude

LEXR{1 to 3}

* HO8b: Domestic EXPT ----- x ----- > EXR (Lag 1)

*

linreg LEXR 1962:1 1993:1

constant LEXPT{1 to 1} LEXR{1 to 1}

exclude

LEXPT{1 to 1}

* HO8b: Domestic EXPT ----- x ----- > EXR (Lag 3)

*

linreg LEXR 1964:1 1993:1

constant LEXPT{1 to 3} LEXR{1 to 3}

exclude

LEXPT{1 to 3}

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** In 1st Differences *****

* HO9: External and domestic factors ----- x ---- > CERV (Lag 1)

*

linreg DLEXPT 1963:1 1993:1

constant DLWGDG{1 to 1} DLWCPI{1 to 1} DLGDP{1 to 1} DLEXR{1 to 1} \$
DLEXPT{1 to 1}

exclude

DLWGDG{1 to 1} DLWCPI{1 to 1} DLGDP{1 to 1} DLEXR{1 to 1}

*

* HO9: External and domestic factors ----- x ---- > CERV (Lag 2)

*

linreg DLEXPT 1964:1 1993:1

constant DLWGDG{1 to 2} DLWCPI{1 to 2} DLGDP{1 to 2} DLEXR{1 to 2} \$
DLEXPT{1 to 2}

exclude

DLWGDG{1 to 2} DLWCPI{1 to 2} DLGDP{1 to 2} DLEXR{1 to 2}

*

*

* HO10: External factors ----- x ----- > CERV (Lag 1)

*

linreg DLEXPT 1963:1 1993:1

constant DLWGDG{1 to 1} DLWCPI{1 to 1} DLEXPT{1 to 1}

exclude

DLWGDG{1 to 1} DLWCPI{1 to 1}

*

* HO10: External factors ----- x ----- > CERV (Lag 2)

*

linreg DLEXPT 1964:1 1993:1

constant DLWGDG{1 to 2} DLWCPI{1 to 2} DLEXPT{1 to 2}

exclude

DLWGDG{1 to 2} DLWCPI{1 to 2}

*

*

* HO11: World GDP ----- x ----- > CERV (Lag 1)

*

linreg DLEXPT 1963:1 1993:1

constant DLWGDG{1 to 1} DLEXPT{1 to 1}

exclude

DLWGDG{1 to 1}

* HO11: World GDP ----- x ----- > CERV (Lag 2)

*

linreg DLEXPT 1964:1 1993:1

constant DLWGDG{1 to 2} DLEXPT{1 to 2}

exclude

DLWGDG{1 to 2}

*

*

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

* HO12: World CPI ----- x ----- > CERV (Lag 1)
linreg DLEXPT 1963:1 1993:1
# constant DLWCPI{1 to 1} DLEXPT{1 to 1}
exclude
# DLWCPI{1 to 1}
*
* HO12: World CPI ----- x ----- > CERV (Lag 2)
linreg DLEXPT 1964:1 1993:1
# constant DLWCPI{1 to 2} DLEXPT{1 to 2}
exclude
# DLWCPI{1 to 2}
*
*
* HO13: Domestic factors ----- x ----- > CERV (lag 1)
*
linreg DLEXPT 1963:1 1993:1
# constant DLGDP{1 to 1} DLEXR{1 to 1} DLEXPT{1 to 1}
exclude
# DLGDP{1 to 1} DLEXR{1 to 1}
*
* HO13: Domestic factors ----- x ----- > CERV (lag 2)
*
linreg DLEXPT 1964:1 1993:1
# constant DLGDP{1 to 2} DLEXR{1 to 2} DLEXPT{1 to 2}
exclude
# DLGDP{1 to 2} DLEXR{1 to 2}
*
*
* HO14: Domestic GDP ----- x ----- > CERV (Lag 1)
*
linreg DLEXPT 1963:1 1993:1
# constant DLGDP{1 to 1} DLEXPT{1 to 1}
exclude
# DLGDP{1 to 1}
*
* HO14: Domestic GDP ----- x ----- > CERV (Lag 2)
*
linreg DLEXPT 1964:1 1993:1
# constant DLGDP{1 to 2} DLEXPT{1 to 2}
exclude
# DLGDP{1 to 2}

* HO15: Domestic EXPT ----- x ----- > GDP (Lag 1)
*
linreg DLGDP 1963:1 1993:1
# constant DLEXPT{1 to 1} DLGDP{1 to 1}
exclude
# DLEXPT{1 to 1}

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

* HO15: Domestic EXPT ----- x ----- > GDP (Lag 2)
*
linreg DLGDP 1964:1 1993:1
# constant DLEXPT{1 to 2} DLGDP{1 to 2}
exclude
# DLEXPT{1 to 2}
*
*
** HO16a: Domestic EXR ----- x ----- > CERV (Lag 1)
*
linreg DLEXPT 1963:1 1993:1
# constant DLEXR{1 to 1} DLEXPT{1 to 1}
exclude
# DLEXR{1 to 1}
*
* HO16a: Domestic EXR ----- x ----- > CERV (Lag 2)
*
linreg DLEXPT 1964:1 1993:1
# constant DLEXR{1 to 2} DLEXPT{1 to 2}
exclude
# DLEXR{1 to 2}
*
** HO16b: Domestic EXPT ----- x ----- > EXR (Lag 1)
*
linreg DLEXR 1963:1 1993:1
# constant DLEXPT{1 to 1} DLEXR{1 to 1}
exclude
# DLEXPT{1 to 1}
*
* HO16b: Domestic EXPT ----- x ----- > CERV (Lag 2)
*
linreg DLEXR 1964:1 1993:1
# constant DLEXPT{1 to 2} DLEXR{1 to 2}
exclude
# DLEXPT{1 to 2}

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** FEDA and IRA in Levels *****

*

system 1 to 5

variables LWGDP LWCPI LGDP LEXR LEXPT

lags 1 to 1

determ constant

end(system)

estimate(outsigma=v) 1962:1 1993:1

list ieqn = 1 2 3 4 5

errors(impulses) 5 30 v

cards ieqn 0 0 ieqn

*

*

***** FEDA and IRA in 1st Differences *****

*

system 1 to 5

variables DLWGDP DLWCPI DLGDP DLEXR DLEXPT

lags 1 to 1

determ constant

end(system)

estimate(outsigma=v) 1963:1 1993:1

list ieqn = 1 2 3 4 5

errors(impulses) 5 30 v

cards ieqn 0 0 ieqn

end

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** The ECMs–based causality, FedA and Ira procedure *****

*

* no 1 WGDG

* 2 WCPI

* 3 GDP

* 4 EXPT

* 5 EXR

bma global 1000

release 1000

cal 1961 1 1

all 0 1993:1

open data a:\png1.prn

open output a:\causal.out

* print

data(org=obs) 1961:1 1993:1 WGDG WCPI GDP EXPT EXR

set LWGDG = log(WGDG(t))

set LWCPI = log(WCPI(t))

set LGDP = log(GDP(t))

set LEXPT = log(EXPT(t))

set LEXR = log(EXR(t))

set LWGDG = LWGDG(t)

set LWCPI = LWCPI(t)

set LGDP = LGDP(t)

set LEXPT = LEXPT(t)

set LEXR = LEXR(t)

statistics

set trend 1961:1 1993:1 = t

set t2 = t**2

set t3 = t**3

set t4 = t3(t)*t

set t5 = t4(t)*t

*

set DLWGDG = LWGDG(t)–LWGDG(t–1)

set DLWCPI = LWCPI(t)–LWCPI(t–1)

set DLGDP = LGDP(t)–LGDP(t–1)

set DLEXPT = LEXPT(t)–LEXPT(t–1)

set DLEXR = LEXR(t)–LEXR(t–1)

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** OLS Regressions in Log Levels *****

* HO1a: CERV -- on --> External and domestic factors (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LWGDP{1 to 1} LWCPI{1 to 1} LGDP{1 to 1} LEXR{1 to 1} \$
LEXPT{1 to 1}

*

* HO1b: CERV -- on --> External and domestic factors (Lag 2)

*

linreg LEXPT 1963:1 1993:1

constant LWGDP{1 to 2} LWCPI{1 to 2} LGDP{1 to 2} LEXR{1 to 2} \$
LEXPT{1 to 2}

*

*

* HO2a: CERV ----- on ----- > External factors (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LWGDP{1 to 1} LWCPI{1 to 1} LEXPT{1 to 1}

*

* HO2b: CERV ----- on ----- > External factors (Lag 2)

*

linreg LEXPT 1963:1 1993:1

constant LWGDP{1 to 2} LWCPI{1 to 2} LEXPT{1 to 2}

*

*

* HO3a: CERV ----- on ----- > World GDP (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LWGDP{1 to 1} LEXPT{1 to 1}

* HO3b: CERV ----- on ----- > World GDP (Lag 2)

*

linreg LEXPT 1963:1 1993:1

constant LWGDP{1 to 2} LEXPT{1 to 2}

*

*

* HO4a: CERV ----- on ----- > World CPI (Lag 1)

linreg LEXPT 1962:1 1993:1

constant LWCPI{1 to 1} LEXPT{1 to 1}

*

*

* HO4b: CERV ----- on ----- > World CPI (Lag 2)

linreg LEXPT 1963:1 1993:1

constant LWCPI{1 to 2} LEXPT{1 to 2}

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

* HO5a: CERV ----- on ----- > Domestic factors (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LGDP{1 to 1} LEXR{1 to 1} LEXPT{1 to 1}

*

* HO5b: CERV ----- on ----- > Domestic factors (Lag 2)

*

linreg LEXPT 1963:1 1993:1

constant LGDP{1 to 2} LEXR{1 to 2} LEXPT{1 to 2}

*

*

* HO6a: CERV ----- on ----- > Domestic GDP (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LGDP{1 to 1} LEXPT{1 to 1}

*

* HO6b: CERV ----- on ----- > Domestic GDP (Lag 2)

*

linreg LEXPT 1963:1 1993:1

constant LGDP{1 to 2} LEXPT{1 to 2}

*

*

* HO7a: CERV ----- on ----- > Domestic EXR (Lag 1)

*

linreg LEXPT 1962:1 1993:1

constant LEXR{1 to 1} LEXPT{1 to 1}

*

* HO7b: CERV ----- on ----- > Domestic EXR (Lag 2)

*

linreg LEXPT 1963:1 1993:1

constant LEXR{1 to 2} LEXPT{1 to 2}

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** ECM Causality – In 1st Differences *****

*** Note that rvi = disequilibrium error *****

```

* HO1a: External and domestic factors --- x --> CERV (Lag 1)
*
set rv1 = (LEXPT(t-1) - 0.803*LGDP(t-1) + 1.102*LCPI(t-1) + 0.374*LGDP(t-1) $
+ 0.508*LEXR(t-1))
linreg DLEXPT 1963:1 1993:1
# constant rv1 DLGDP{1 to 1} DLCPI{1 to 1} DLGDP{1 to 1} DLEXR{1 to 1} $
DLEXPT{1 to 1}
exclude
# DLGDP{1 to 1} DLCPI{1 to 1} DLGDP{1 to 1} DLEXR{1 to 1} rv1
*
* HO1b: External and domestic factors ----- x ----> CERV (Lag 2)
*
set rv2 = (LEXPT(t-1) + 2.279*LGDP(t-1) + 0.300*LCPI(t-1) - 1.290*LGDP(t-1) $
+ 0.618*LEXR(t-1))
linreg DLEXPT 1964:1 1993:1
# constant rv2 DLGDP{1 to 2} DLCPI{1 to 2} DLGDP{1 to 2} DLEXR{1 to 2} $
DLEXPT{1 to 2}
exclude
# DLGDP{1 to 2} DLCPI{1 to 2} DLGDP{1 to 2} DLEXR{1 to 2} rv2
*
*
* HO2a: External factors ----- x -----> CERV (Lag 1)
*
set rv3 = (LEXPT(t-1) - 0.447*LGDP(t-1) + 0.983*LCPI(t-1))
linreg DLEXPT 1963:1 1993:1
# constant rv3 DLGDP{1 to 1} DLCPI{1 to 1} DLEXPT{1 to 1}
exclude
# DLGDP{1 to 1} DLCPI{1 to 1} rv3
*
* HO2b: External factors ----- x -----> CERV (Lag 2)
*
set rv4 = (LEXPT(t-1) + 0.208*LGDP(t-1) + 0.504*LCPI(t-1))
linreg DLEXPT 1964:1 1993:1
# constant rv4 DLGDP{1 to 2} DLCPI{1 to 2} DLEXPT{1 to 2}
exclude
# DLGDP{1 to 2} DLCPI{1 to 2} rv4
*
*
* HO3a: World GDP ----- x -----> CERV (Lag 1)
*
set rv5 = (LEXPT(t-1) - 0.124*LGDP(t-1))
linreg DLEXPT 1963:1 1993:1
# constant rv5 DLGDP{1 to 1} DLEXPT{1 to 1}
exclude
# DLGDP{1 to 1} rv5

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

* HO3b: World GDP ----- x ----- > CERV (Lag 2)
*
set rv6 = (LEXPT(t-1) + 1.527*LGDP(t-1))
linreg DLEXPT 1964:1 1993:1
# constant rv6 DLGDP{1 to 2} DLEXPT{1 to 2}
exclude
# DLGDP{1 to 2} rv6
*
*
* HO4a: World CPI ----- x ----- > CERV (Lag 1)
set rv7 = (LEXPT(t-1) + 0.598*LCPI(t-1))
linreg DLEXPT 1963:1 1993:1
# constant rv7 DLCPI{1 to 1} DLEXPT{1 to 1}
exclude
# DLCPI{1 to 1} rv7
*
* HO4b: World CPI ----- x ----- > CERV (Lag 2)
*
set rv8 = (LEXPT(t-1) - 0.117*LCPI(t-1))
linreg DLEXPT 1964:1 1993:1
# constant rv8 DLCPI{1 to 2} DLEXPT{1 to 2}
exclude
# DLCPI{1 to 2} rv8
*
*
* HO5a: Domestic factors ----- x ----- > CERV (lag 1)
*
set rv9 = (LEXPT(t-1) + 0.046*LGDP(t-1) - 0.514*LEXR(t-1))
linreg DLEXPT 1963:1 1993:1
# constant rv9 DLGDP{1 to 1} DLEXR{1 to 1} DLEXPT{1 to 1}
exclude
# DLGDP{1 to 1} DLEXR{1 to 1} rv9
*
* HO5b: Domestic factors ----- x ----- > CERV (lag 2)
*
set rv10 = (LEXPT(t-1) - 1.201*LGDP(t-1) - 0.869*LEXR(t-1))
linreg DLEXPT 1964:1 1993:1
# constant rv10 DLGDP{1 to 2} DLEXR{1 to 2} DLEXPT{1 to 2}
exclude
# DLGDP{1 to 2} DLEXR{1 to 2} rv10
*
*
* HO6a: Domestic GDP ----- x ----- > CERV (Lag 1)
*
set rv11 = (LEXPT(t-1) - 0.089*LGDP(t-1))
linreg DLEXPT 1963:1 1993:1
# constant rv11 DLGDP{1 to 1} DLEXPT{1 to 1}
exclude
# DLGDP{1 to 1} rv11

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

```

* HO6b: Domestic GDP ----- x ----- > CERV (Lag 2)
*
set rv12 = (LEXPT(t-1) - 0.994*LGDP(t-1))
linreg DLEXPT 1964:1 1993:1
# constant rv12 DLGDP{1 to 2} DLEXPT{1 to 2}
exclude
# DLGDP{1 to 2} rv12
*
*
** HO7a: Domestic EXR ----- x ----- > CERV (Lag 1)
*
set rv13 = (LEXPT(t-1) - 0.499*LEXR(t-1))
linreg DLEXPT 1963:1 1993:1
# constant rv13 DLEXR{1 to 1} DLEXPT{1 to 1}
exclude
# DLEXR{1 to 1} rv13
*
* HO7b: Domestic EXR ----- x ----- > CERV (Lag 2)
*
set rv14 = (LEXPT(t-1) + 0.080*LEXR(t-1))
linreg DLEXPT 1964:1 1993:1
# constant rv14 DLEXR{1 to 2} DLEXPT{1 to 2}
exclude
# DLEXR{1 to 2} rv14
*
*
* HO8a: External and domestic factors --- x -- > CERV (Lag 1)
*
linreg DLEXPT 1963:1 1993:1
# constant rv3 rv9 DLWGDP{1 to 1} DLWCPI{1 to 1} DLGDP{1 to 1} DLEXR{1 to 1} $
DLEXPT{1 to 1}
exclude
# DLWGDP{1 to 1} DLWCPI{1 to 1} DLGDP{1 to 1} DLEXR{1 to 1} rv3 rv9
*
* HO8b: External and domestic factors ----- x ---- > CERV (Lag 2)
*
linreg DLEXPT 1964:1 1993:1
# constant rv4 rv10 DLWGDP{1 to 2} DLWCPI{1 to 2} DLGDP{1 to 2} DLEXR{1 to 2} $
DLEXPT{1 to 2}
exclude
# DLWGDP{1 to 2} DLWCPI{1 to 2} DLGDP{1 to 2} DLEXR{1 to 2} rv4 rv10

```

Appendix 7.2: continued (causality, FEDA and IRA – PNG)

***** ECM-based FEDA and IRA in 1st Differences *****

*

system 1 to 5

variables DLWGDP DLWCPI DLGDP DLEXR DLEXPT

lags 1 to 1

determ constant rv3 rv9

end(system)

estimate(outsigma=v) 1963:1 1993:1

list ieqn = 1 2 3 4 5

errors(impulses) 5 30 v

cards ieqn 0 0 ieqn

*

end

*

system 1 to 5

variables DLWGDP DLWCPI DLGDP DLEXR DLEXPT

lags 1 to 2

determ constant rv2

end(system)

estimate(outsigma=v) 1964:1 1993:1

list ieqn = 1 2 3 4 5

errors(impulses) 5 30 v

cards ieqn 0 0 ieqn

end

*

end

Appendix 7.3: Impulse responses of the difference of exports (CERV) for selected SPINs

Period	Export decomposition in %				
	WGDP	WCPI	GDP	EXR	EXP
FIJI					
VARL					
1	0.0000	0.0000	0.0000	0.0000	0.1026
2	-0.0062	-0.0130	-0.0105	-0.0011	0.0242
3	-0.0088	-0.0147	-0.0135	-0.0019	-0.0066
4	-0.0069	-0.0124	-0.0149	-0.0020	-0.0131
5	-0.0056	-0.0075	-0.0128	-0.0017	-0.0113
8	-0.0061	-0.0044	-0.0114	-0.0008	-0.0062
10	-0.0066	-0.0047	-0.0088	-0.0007	-0.0065
13	-0.0069	-0.0047	-0.0081	-0.0010	-0.0069
15	-0.0069	-0.0045	-0.0076	-0.0012	-0.0067
20	-0.0069	-0.0040	-0.0065	-0.0017	-0.0061
VARD					
1	0.0000	0.0000	0.0000	0.0000	0.1106
2	0.0125	-0.0166	-0.0015	0.0003	-0.0068
3	0.0064	0.0091	-0.0089	0.0002	-0.0159
4	0.0051	0.0011	-0.0057	0.0008	0.0062
5	0.0002	0.0024	-0.0015	0.0005	-0.0000
8	-0.0000	-0.0003	-0.0003	0.0001	-0.0001
10	-0.0000	-0.0000	-0.0001	0.0000	-0.0001
13	-0.0000	-0.0000	-0.0000	0.0000	-0.0000
15	-0.0000	-0.0000	-0.0000	0.0000	-0.0000
20	-0.0000	-0.0000	-0.0000	0.0000	-0.0000
ECMs					
1	0.0000	0.0000	0.0000	0.0000	0.0997
2	0.0030	-0.0003	0.0045	-0.0023	0.0104
3	0.0023	0.0004	0.0034	-0.0019	-0.0090
4	0.0014	0.0003	-0.0025	0.0004	0.0029
5	0.0003	-0.0012	-0.0006	0.0004	0.0023
8	0.0000	0.0000	-0.0000	0.0000	0.0001
10	0.0000	0.0000	0.0000	0.0000	0.0000
13	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: VARL is VAR in levels, VARD is VAR in differences, and ECMs are error correction models. Impulse responses to one-standard deviation shock in exports.

Appendix 7.3: continued (impulse responses)

Period	Export decomposition in %				
	WGDP	WCPI	GDP	EXR	EXP
PNG					
VARL					
1	0.0000	0.0000	0.0000	0.0000	0.1020
2	0.0115	0.0390	0.0341	-0.0131	0.1162
3	0.0181	0.0580	0.0509	-0.0154	0.1146
4	0.0213	0.0450	0.0556	-0.0116	0.1047
5	0.0222	0.0418	0.0556	-0.0114	0.0909
8	0.0185	0.0324	0.0373	-0.0110	0.0485
10	0.0149	0.0253	0.0246	-0.0063	0.0286
13	0.0111	0.0115	0.0126	-0.0010	0.0130
15	0.0097	0.0086	0.0088	-0.0006	0.0092
20	0.0089	0.0042	0.0071	-0.0014	0.0092
VARD					
1	0.0000	0.0000	0.0000	0.0000	0.1081
2	0.0330	0.0510	0.0310	-0.0154	0.0916
3	0.0310	0.0370	0.0276	-0.0145	0.0327
4	0.0193	0.0181	0.0168	-0.0066	0.0025
5	0.0082	-0.0013	0.0074	0.0003	-0.0068
8	0.0001	0.0003	0.0004	0.0001	0.0012
10	0.0001	0.0003	0.0003	-0.0002	0.0003
13	-0.0000	-0.0001	-0.0001	0.0000	-0.0001
15	0.0000	0.0000	0.0000	-0.0000	0.0000
20	-0.0000	-0.0000	-0.0000	0.0000	-0.0000
ECMs					
1	0.0000	0.0000	0.0000	0.0000	0.0796
2	0.0215	0.0188	0.0292	-0.0109	0.0691
3	0.0123	0.0103	0.0261	-0.0051	0.0030
4	0.0088	-0.0098	-0.0102	0.0044	-0.0514
5	-0.0045	0.0062	-0.0105	0.0020	-0.0072
8	-0.0022	-0.0038	-0.0065	0.0025	-0.0148
10	-0.0011	-0.0032	0.0002	0.0011	0.0043
13	0.0010	0.0017	0.0003	-0.0007	0.0026
15	0.0001	0.0012	-0.0002	-0.0004	0.0014
20	-0.0001	0.0000	0.0002	0.0001	0.0001

Notes: VARL is VAR in levels, VARD is VAR in differences, and ECMs are error correction models. Impulse responses to one-standard deviation shock in exports.

Appendix 7.3: continued (impulse responses)

Export decomposition in %					
Period	WGDP	WCPI	GDP	EXR	EXP
SOLOMON ISLANDS					
VARL					
1	0.0000	0.0000	0.0000	0.0000	0.1056
2	0.0263	0.0209	0.0091	-0.0182	0.0113
3	0.0295	0.0213	0.0198	-0.0207	0.0271
4	0.0266	0.0253	0.0301	-0.0231	0.0431
5	0.0225	0.0246	0.0290	-0.0220	0.0511
8	0.0107	0.0126	0.0260	-0.0210	0.0425
10	0.0069	0.0064	0.0226	-0.0149	0.0291
13	0.0052	0.0031	0.0123	-0.0076	0.0158
15	0.0051	0.0028	0.0091	-0.0051	0.0118
20	0.0044	0.0026	0.0060	-0.0020	0.0078
VARD					
1	0.0000	0.0000	0.0000	0.0000	0.1368
2	0.0106	-0.0063	-0.0050	-0.0070	-0.0714
3	0.0055	0.0120	0.0167	-0.0050	0.0469
4	-0.0039	-0.0093	0.0135	-0.0058	0.0002
5	-0.0034	-0.0034	-0.0110	-0.0020	-0.0056
8	-0.0002	-0.0001	0.0042	-0.0006	0.0003
10	-0.0001	-0.0002	0.0021	-0.0003	-0.0001
13	-0.0000	-0.0001	0.0000	-0.0001	-0.0000
15	-0.0000	-0.0000	0.0000	-0.0000	-0.0000
20	-0.0000	-0.0000	0.0000	-0.0000	-0.0000
ECMs					
1	0.0000	0.0000	0.0000	0.0000	0.1215
2	0.0107	-0.0015	0.0068	-0.0091	-0.0371
3	0.0047	0.0113	0.0149	-0.0078	0.0065
4	-0.0035	-0.0028	0.0105	-0.0028	0.0070
5	-0.0034	-0.0043	-0.0035	0.0001	-0.0086
8	0.0002	0.0003	0.0001	-0.0000	0.0003
10	-0.0000	0.0000	0.0000	-0.0000	0.0000
13	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: VARL is VAR in levels, VARD is VAR in differences, and ECMs are error correction models. Impulse responses to one-standard deviation shock in exports.