

Regression Number: 6
Regression Name: Re-estimated Bretton Woods Formula for Members Representing Developing Countries

Quota Review: Eleventh

$$Q = (0.00558 Y - 0.0663 R + 0.04689 P + 0.314 VC) \times (1 + C/Y)$$

(6.41) (-5.67) (7.33) (5.65)

where Q is the proposed (actual) quota; Y is GDP in a recent year (1994); R is average monthly reserves in a recent year (1994); P and C are annual average current payments and receipts, respectively, over a recent five-year period (1990-94); VC is the variability of current receipt, defined as one standard deviation from a five-year moving average over a recent 13-year period (1982-1994); t-ratios are given in parentheses.

Sample size:	128	R-squared	0.849
Description of sample:	All Developing Countries	Adjusted R-squared	0.845
		S.E. of Regression	380.39
Estimation method:	NLS	SSR (from estimation)	17,942,140

Relative Contributions of Variables in the Estimated Formula
(In percent)

Y	27.6
R	-26.4
P	51.2
VC	25.8
C/Y	<u>21.7</u>
Total:	100.0

Table I.6. Results of Regression Equation No. 6
(Countries ranked by actual quota under the Eleventh General Review)

	Actual	Estimated	Adjusted	Actual	Adjusted	'Residuals'		<i>Memo Item:</i>	
	Quota	Quota	Estimated	Quota	Estimated	Columns		Calculated Quotas Based on	
	Amount	Amount 1/	Quota	Shares	Quota	(1)-(3)	(4)-(5)	Existing 5-Formula System	Shares
	(In millions of SDRs)			(In percent)				(in mill SDRs)	(In percent)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Saudi Arabia	6,985.5	5,390.4	5,716.9	3.295	2.696	1,268.60	0.60	7,159.1	1.310
China	4,687.2	4,289.2	4,549.0	2.211	2.145	138.22	0.07	9,042.6	1.660
India	4,158.2	1,940.4	2,058.0	1.961	0.971	2,100.24	0.99	4,156.0	0.760
Brazil	3,036.1	3,121.0	3,310.0	1.432	1.561	-273.93	-0.13	7,479.9	1.370
Venezuela	2,659.1	1,558.3	1,652.7	1.254	0.779	1,006.39	0.47	2,853.6	0.520
Mexico	2,585.8	4,595.5	4,873.8	1.220	2.299	-2,288.00	-1.08	7,246.7	1.330
Argentina	2,117.1	1,687.4	1,789.6	0.998	0.844	327.48	0.15	3,487.7	0.640
Indonesia	2,079.3	2,618.2	2,776.8	0.981	1.310	-697.48	-0.33	4,318.0	0.790
South Africa	1,868.5	1,848.0	1,959.9	0.881	0.924	-91.41	-0.04	2,429.2	0.450
Nigeria	1,753.2	1,594.5	1,691.1	0.827	0.798	62.12	0.03	2,246.8	0.410
Iran	1,497.2	2,128.1	2,257.0	0.706	1.064	-759.84	-0.36	3,095.9	0.570
Malaysia	1,486.6	1,884.7	1,998.9	0.701	0.943	-512.28	-0.24	5,608.4	1.030
Kuwait	1,381.1	1,901.7	2,016.9	0.651	0.951	-635.76	-0.30	2,832.9	0.520
Algeria	1,254.7	1,194.0	1,266.3	0.592	0.597	-11.63	-0.01	1,811.0	0.330
Iraq	1,188.4	1,218.4	1,292.2	0.560	0.609	-103.83	-0.05	1,810.1	0.330
Libya	1,123.7	973.0	1,031.9	0.530	0.487	91.81	0.04	1,720.9	0.320
Thailand	1,081.9	1,776.3	1,883.9	0.510	0.889	-802.00	-0.38	4,701.3	0.860
Pakistan	1,033.7	759.4	805.4	0.488	0.380	228.29	0.11	1,131.9	0.210
Turkey	964.0	1,962.8	2,081.7	0.455	0.982	-1,117.65	-0.53	2,905.9	0.530
Egypt	943.7	571.9	606.6	0.445	0.286	337.11	0.16	2,054.5	0.380
Philippines	879.9	1,057.0	1,121.1	0.415	0.529	-241.15	-0.11	1,852.2	0.340
Chile	856.1	317.3	336.5	0.404	0.159	519.62	0.25	1,398.3	0.260
Colombia	774.0	506.7	537.4	0.365	0.253	236.59	0.11	1,324.3	0.240
Peru	638.4	315.0	334.1	0.301	0.158	304.30	0.14	858.3	0.160
United Arab Emirates	611.7	1,110.4	1,177.6	0.288	0.555	-565.90	-0.27	2,176.5	0.400
Morocco	588.2	444.5	471.5	0.277	0.222	116.75	0.06	919.4	0.170
Bangladesh	533.3	184.7	195.9	0.252	0.092	337.45	0.16	484.4	0.090
Congo, Dem. Republic of	533.0	224.0	237.5	0.251	0.112	295.46	0.14	301.1	0.060
Zambia	489.1	130.1	138.0	0.231	0.065	351.09	0.17	183.3	0.030
Sri Lanka	413.4	194.0	205.8	0.195	0.097	207.61	0.10	426.6	0.080
Ghana	369.0	93.0	98.6	0.174	0.047	270.37	0.13	155.5	0.030
Zimbabwe	353.4	152.8	162.1	0.167	0.076	191.34	0.09	234.1	0.040
Trinidad and Tobago	335.6	237.5	251.9	0.158	0.119	83.74	0.04	320.4	0.060
Vietnam	329.1	224.2	237.7	0.155	0.112	91.38	0.04	345.7	0.060
Cote d'Ivoire	325.2	347.6	368.6	0.153	0.174	-43.40	-0.02	379.0	0.070
Sudan	315.1	147.7	156.6	0.149	0.074	158.49	0.07	198.5	0.040
Uruguay	306.5	175.0	185.6	0.145	0.088	120.90	0.06	302.7	0.060
Ecuador	302.3	293.7	311.5	0.143	0.147	-9.18	0.00	517.2	0.090
Syrian Arab Republic	293.6	511.7	542.7	0.138	0.256	-249.08	-0.12	723.7	0.130
Tunisia	286.5	452.6	480.1	0.135	0.226	-193.56	-0.09	621.4	0.110

Table I.6. Results of Regression Equation No. 6
(Countries ranked by actual quota under the Eleventh General Review)

	Actual	Estimated	Adjusted	Actual	Adjusted	'Residuals'		<i>Memo Item:</i>	
	Quota	Quota	Estimated	Quota	Estimated	Columns		Calculated Quotas Based on	
	Amount	Amount 1/	Quota	Shares	Quota	(1)-(3)	(4)-(5)	Existing 5-Formula System	Shares
	(In millions of SDRs)			(In percent)				(in mili SDRs)	(In percent)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Angola	286.3	482.0	511.2	0.135	0.241	-224.91	-0.11	516.1	0.090
Jamaica	273.5	203.1	215.4	0.129	0.102	58.13	0.03	280.5	0.050
Kenya	271.4	171.9	182.3	0.128	0.086	89.08	0.04	273.7	0.050
Qatar	263.8	341.4	362.0	0.124	0.171	-98.24	-0.05	509.2	0.090
Myanmar	258.4	358.9	380.7	0.122	0.180	-122.25	-0.06	628.4	0.120
Yemen, Republic of	243.5	321.0	340.4	0.115	0.161	-96.93	-0.05	421.6	0.080
Dominican Republic	218.9	267.5	283.8	0.103	0.134	-64.85	-0.03	370.0	0.070
Brunei Darussalam	215.2	423.6	449.2	0.101	0.212	-234.04	-0.11	553.7	0.100
Guatemala	210.2	146.3	155.2	0.099	0.073	55.05	0.03	259.9	0.050
Panama	206.6	245.1	260.0	0.097	0.123	-53.39	-0.03	372.0	0.070
Lebanon	203.0	70.7	75.0	0.096	0.035	128.00	0.06	436.0	0.080
Tanzania	198.9	100.5	106.6	0.094	0.050	92.31	0.04	142.8	0.030
Oman	194.0	577.9	612.9	0.091	0.289	-418.91	-0.20	833.6	0.150
Cameroon	185.7	228.6	242.5	0.088	0.114	-56.77	-0.03	285.3	0.050
Uganda	180.5	53.8	57.0	0.085	0.027	123.50	0.06	86.5	0.020
Bolivia	171.5	96.7	102.5	0.081	0.048	68.97	0.03	155.4	0.030
El Salvador	171.3	111.2	117.9	0.081	0.056	53.37	0.03	192.5	0.040
Jordan	170.5	253.3	268.7	0.080	0.127	-98.17	-0.05	434.1	0.080
Costa Rica	164.1	166.5	176.6	0.077	0.083	-12.46	-0.01	282.4	0.050
Afghanistan, Islamic State of	161.9	32.4	34.3	0.076	0.016	127.58	0.06	54.2	0.010
Senegal	161.8	138.0	146.4	0.076	0.069	15.40	0.01	158.8	0.030
Gabon	154.3	306.8	325.4	0.073	0.153	-171.06	-0.08	383.3	0.070
Cyprus	139.6	165.9	176.0	0.066	0.083	-36.40	-0.02	330.5	0.060
Namibia	136.5	157.4	166.9	0.064	0.079	-30.43	-0.01	190.9	0.030
Bahrain	135.0	445.8	472.8	0.064	0.223	-337.81	-0.16	589.0	0.110
Ethiopia	133.7	68.5	72.7	0.063	0.034	61.05	0.03	131.9	0.020
Papua New Guinea	131.6	185.5	196.7	0.062	0.093	-65.12	-0.03	232.5	0.040
Bahamas, The	130.3	145.3	154.1	0.061	0.073	-23.80	-0.01	190.5	0.030
Nicaragua	130.0	68.7	72.8	0.061	0.034	57.17	0.03	85.1	0.020
Honduras	129.5	98.7	104.7	0.061	0.049	24.78	0.01	138.7	0.030
Liberia	129.2	27.2	28.8	0.061	0.014	100.40	0.05	33.8	0.010
Madagascar	122.2	58.9	62.4	0.058	0.029	59.79	0.03	75.4	0.010
Mozambique	113.6	53.3	56.5	0.054	0.027	57.09	0.03	76.9	0.010
Guinea	107.1	78.0	82.7	0.051	0.039	24.43	0.01	104.8	0.020
Sierra Leone	103.7	19.3	20.4	0.049	0.010	83.27	0.04	27.8	0.010
Malta	102.0	84.2	89.3	0.048	0.042	12.72	0.01	315.3	0.060
Mauritius	101.6	104.7	111.1	0.048	0.052	-9.47	0.00	199.2	0.040
Paraguay	99.9	95.9	101.7	0.047	0.048	-1.79	0.00	197.0	0.040
Mali	93.3	40.7	43.2	0.044	0.020	50.14	0.02	69.8	0.010
Suriname	92.1	99.2	105.3	0.043	0.050	-13.15	-0.01	97.8	0.020

Table I.6. Results of Regression Equation No. 6
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	Actual	Estimated	Adjusted	Actual	Adjusted	'Residuals'		<i>Memo Item:</i>	
	Quota	Quota	Estimated	Quota	Estimated	Columns		Calculated Quotas Based on	
	Amount	Amount 1/ (In millions of SDRs)	Quota Amount 2/ (In millions of SDRs)	Shares (In percent)	Quota Shares (In percent)	(1)-(3)	(4)-(5)	Existing 5-Formula System Amount (in mill SDRs)	Shares (In percent)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Guyana	90.9	29.1	30.9	0.043	0.015	60.02	0.03	61.1	0.010
Cambodia	87.5	22.3	23.7	0.041	0.011	63.80	0.03	35.0	0.010
Congo, Republic of	84.6	204.4	216.8	0.040	0.102	-132.16	-0.06	228.0	0.040
Haiti	81.9	31.5	33.4	0.039	0.016	48.51	0.02	42.8	0.010
Somalia	81.7	14.0	14.8	0.039	0.007	66.86	0.03	17.3	0.000
Rwanda	80.1	24.4	25.9	0.038	0.012	54.18	0.03	31.4	0.010
Burundi	77.0	12.6	13.3	0.036	0.006	63.67	0.03	30.5	0.010
Togo	73.4	32.7	34.7	0.035	0.016	38.74	0.02	47.4	0.010
Nepal	71.3	32.7	34.6	0.034	0.016	36.66	0.02	100.5	0.020
Fiji	70.3	71.2	75.5	0.033	0.036	-5.23	0.00	109.8	0.020
Malawi	69.4	61.0	64.7	0.033	0.030	4.75	0.00	74.3	0.010
Barbados	67.5	81.4	86.4	0.032	0.041	-18.87	-0.01	120.2	0.020
Niger	65.8	44.7	47.4	0.031	0.022	18.40	0.01	67.4	0.010
Mauritania	64.4	44.7	47.4	0.030	0.022	16.98	0.01	52.9	0.010
Botswana	63.0	-115.1	-122.1	0.030	-0.058	185.05	0.09	358.4	0.070
Benin	61.9	46.7	49.5	0.029	0.023	12.37	0.01	73.3	0.010
Burkina Faso	60.2	35.6	37.8	0.028	0.018	22.42	0.01	64.3	0.010
Chad	56.0	28.9	30.6	0.026	0.014	25.41	0.01	42.2	0.010
Central African Republic	55.7	15.5	16.5	0.026	0.008	39.23	0.02	35.6	0.010
Lao, People's Dem. Republic	52.9	23.7	25.1	0.025	0.012	27.79	0.01	34.8	0.010
Swaziland	50.7	70.5	74.7	0.024	0.035	-24.03	-0.01	108.7	0.020
Lesotho	34.9	54.3	57.6	0.016	0.027	-22.68	-0.01	93.8	0.020
Equatorial Guinea	32.6	7.7	8.1	0.015	0.004	24.49	0.01	8.2	0.000
Gambia, The	31.1	16.7	17.7	0.015	0.008	13.38	0.01	29.2	0.010
Belize	18.8	29.6	31.4	0.009	0.015	-12.61	-0.01	39.9	0.010
Vanuatu	17.0	9.6	10.2	0.008	0.005	6.78	0.00	16.2	0.000
Djibouti	15.9	18.5	19.6	0.007	0.009	-3.71	0.00	29.1	0.010
Eritrea	15.9	11.5	12.2	0.007	0.006	3.70	0.00	30.6	0.010
St. Lucia	15.3	24.4	25.9	0.007	0.012	-10.59	0.00	33.3	0.010
Guinea-Bissau	14.2	7.4	7.8	0.007	0.004	6.37	0.00	9.9	0.000
Antigua and Barbuda	13.5	43.0	45.6	0.006	0.021	-32.07	-0.02	51.9	0.010
Grenada	11.7	11.8	12.5	0.006	0.006	-0.76	0.00	16.6	0.000
Samoa	11.6	5.8	6.2	0.005	0.003	5.44	0.00	11.6	0.000
Solomon Islands	10.4	15.9	16.9	0.005	0.008	-6.51	0.00	19.9	0.000
Cape Verde	9.6	9.4	10.0	0.005	0.005	-0.40	0.00	15.5	0.000
Comoros	8.9	5.4	5.7	0.004	0.003	3.16	0.00	10.5	0.000
St. Kitts and Nevis	8.9	8.4	8.9	0.004	0.004	-0.01	0.00	12.8	0.000
Seychelles	8.8	19.6	20.8	0.004	0.010	-11.96	-0.01	24.6	0.000
St. Vincent and the Grenadin	8.3	12.0	12.8	0.004	0.006	-4.47	0.00	16.2	0.000
Dominica	8.2	8.5	9.0	0.004	0.004	-0.83	0.00	11.2	0.000

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	Amount	Amount 1/	Quota	Shares	Quota	(1)-(3)	(4)-(5)	Existing 5-Formula System	Shares
	(In millions of SDRs)			(In percent)				(in mill SDRs)	(in percent)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Maldives	8.2	18.7	19.8	0.004	0.009	-11.64	-0.01	23.9	0.000
Sao Tome and Principe	7.4	2.3	2.5	0.003	0.001	4.93	0.00	3.2	0.000
Tonga	6.9	5.5	5.9	0.003	0.003	1.04	0.00	10.0	0.000
Bhutan	6.3	3.2	3.4	0.003	0.002	2.87	0.00	14.4	0.000
Kiribati	5.6	-18.9	-20.1	0.003	-0.009	25.69	0.01	13.6	0.000
Micronesia, Fed. States of	5.1	7.6	8.0	0.002	0.004	-2.91	0.00	13.1	0.000
Marshall Islands	3.5	6.2	6.6	0.002	0.003	-3.05	0.00	7.8	0.000
Palau, Republic of	3.1	2.7	2.9	0.001	0.001	0.23	0.00	5.7	0.000
Total	61,922.5	58,386.1	61,922.5	29.205	29.205	0.00	0.00	104,840.4	19.220
Memo: Sum of squared residuals						18,418,074.08	4.10		

1/ Based on the "estimate" generated by the regression equation.

2/ Based on the estimated quotas shown in Col. (2) but adjusted so that their total equals the total of actual quotas.