

Regression Number: 34
Regression Name: Members with Quota Shares of Equal to or Less Than 1.0 Percent
 Re-estimated Bretton Woods Formula with Financial Market Accessibility Times Current Payments as an Additional Variable

Quota Review: Eleventh

$$Q = (0.00604 Y - 0.01397 R - 0.03077 P + 0.30412 VC + 0.01561 FMP) \times (1 + C/Y)$$

(8.01) (-3.61) (-6.48) (10.7) (7.63)

where Q is the actual quota; Y is GDP in a recent year (1994); R is average monthly reserves in a recent year (1994); P and C are the annual average current payments and receipts, respectively, over a recent five year period (1990-94); VC is the variability of current receipts, defined as one standard deviation from a five-year moving average over a recent 13-year period (1982-1994); FMP is financial market accessibility times current payments; financial market accessibility is proxied by a variable which takes values of 4 for developing countries with limited access to private financial markets, 3 for the rest of developing countries, 2 for industrial countries with easy access to borrowing and 1 for France, Germany, Japan, the United Kingdom, and the United States; t-ratios are shown in parentheses.

Sample size	163	R-squared	0.86
Description of sample	Members with actual quota shares equal to or less than 1 percent	Adjusted R-squared	0.86
		S.E. of regression	193.8
Estimation method	Nonlinear Least Squares	SSR (from estimation)	5,936,039

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

Y	30.5
R	-7.4
P	-51.4
VC	33.0
FMP	69.0
C/Y	<u>26.3</u>
Total	100.0

Table I.34. Results of Regression Equation No. 34
(Countries ranked by actual quota under the Eleventh General Review)

	Actual	Estimated	Adjusted	Actual	Adjusted	Residuals'		Memo Item:	
	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)
Argentina	2,117.1	1,777.0	2,026.2	0.998	0.956	90.93	0.04	3,487.7	0.639
Indonesia	2,079.3	2,064.6	2,354.0	0.981	1.110	-274.71	-0.13	4,318.0	0.792
Austria	1,872.3	1,731.2	1,973.9	0.883	0.931	-101.59	-0.05	6,972.5	1.278
South Africa	1,868.5	1,189.4	1,356.2	0.881	0.640	512.31	0.24	2,429.2	0.445
Nigeria	1,753.2	1,458.9	1,663.4	0.827	0.785	89.77	0.04	2,246.8	0.412
Norway	1,671.7	1,400.3	1,596.7	0.788	0.753	75.04	0.04	5,209.6	0.955
Denmark	1,642.8	1,251.1	1,426.5	0.775	0.673	216.25	0.10	5,450.0	0.999
Korea	1,633.6	2,747.8	3,133.0	0.770	1.478	-1,499.43	-0.71	9,049.7	1.659
Iran	1,497.2	1,635.5	1,864.8	0.706	0.880	-367.65	-0.17	3,095.9	0.568
Malaysia	1,486.6	1,907.6	2,175.0	0.701	1.026	-688.43	-0.33	5,608.4	1.028
Kuwait	1,381.1	1,667.5	1,901.2	0.651	0.897	-520.14	-0.25	2,832.9	0.519
Ukraine	1,372.0	1,194.3	1,361.8	0.647	0.642	10.25	0.01	2,172.1	0.398
Poland	1,369.0	1,223.1	1,394.6	0.646	0.658	-25.56	-0.01	2,657.1	0.487
Finland	1,263.8	957.0	1,091.2	0.596	0.515	172.59	0.08	3,463.0	0.635
Algeria	1,254.7	954.9	1,088.8	0.592	0.514	165.92	0.08	1,811.0	0.332
Iraq	1,188.4	1,049.7	1,196.9	0.560	0.564	-8.49	0.00	1,810.1	0.332
Libya	1,123.7	881.7	1,005.3	0.530	0.474	118.38	0.06	1,720.9	0.315
Thailand	1,081.9	1,619.9	1,847.0	0.510	0.871	-765.08	-0.36	4,701.3	0.862
Hungary	1,038.4	667.1	760.7	0.490	0.359	277.75	0.13	1,644.2	0.301
Pakistan	1,033.7	706.2	805.2	0.488	0.380	228.47	0.11	1,131.9	0.208
Romania	1,030.2	667.5	761.1	0.486	0.359	269.11	0.13	1,243.8	0.228
Turkey	964.0	1,408.1	1,605.6	0.455	0.757	-641.55	-0.30	2,905.9	0.533
Egypt	943.7	741.9	845.9	0.445	0.399	97.83	0.05	2,054.5	0.377
Israel	928.2	487.6	556.0	0.438	0.262	372.22	0.18	2,101.2	0.385
New Zealand	894.6	414.5	472.6	0.422	0.223	422.01	0.20	1,429.0	0.262
Philippines	879.9	780.8	890.2	0.415	0.420	-10.32	-0.01	1,852.2	0.340
Portugal	867.4	604.3	689.1	0.409	0.325	178.32	0.08	3,046.1	0.558
Singapore	862.5	735.5	838.6	0.407	0.396	23.89	0.01	8,339.7	1.529
Chile	856.1	459.8	524.3	0.404	0.247	331.84	0.16	1,398.3	0.256
Ireland	838.4	602.5	686.9	0.395	0.324	151.47	0.07	3,320.4	0.609
Greece	823.0	541.6	617.5	0.388	0.291	205.52	0.10	2,091.0	0.383
Czech Republic	819.3	795.8	907.4	0.386	0.428	-88.06	-0.04	1,736.0	0.318
Colombia	774.0	546.1	622.7	0.365	0.294	151.35	0.07	1,324.3	0.243
Bulgaria	640.2	591.2	674.0	0.302	0.318	-33.84	-0.02	1,046.6	0.192
Peru	638.4	371.6	423.7	0.301	0.200	214.71	0.10	858.3	0.157

Table I.34. Results of Regression Equation No. 34
(Countries ranked by actual quota under the Eleventh General Review)

	Actual	Estimated	Adjusted	Adjusted	'Residuals'		<i>Memo Item:</i>		
	Quota	Quota	Estimated	Estimated	Columns		Calculated Quotas Based on		
	Amount	Amount 1/	Quota	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)
United Arab Emirates	611.7	1,060.1	1,208.7	0.288	0.570	-597.01	-0.28	2,176.5	0.399
Morocco	588.2	504.6	575.4	0.277	0.271	12.82	0.01	919.4	0.169
Bangladesh	533.3	255.4	291.2	0.252	0.137	242.09	0.11	484.4	0.089
Congo, Dem. Republic of	533.0	194.6	221.9	0.251	0.105	311.13	0.15	301.1	0.055
Zambia	489.1	115.8	132.0	0.231	0.062	357.08	0.17	183.3	0.034
FRY (Serbia/Montenegro)	467.7	629.1	717.3	0.221	0.338	-249.60	-0.12	1,076.3	0.197
Sri Lanka	413.4	164.2	187.2	0.195	0.088	226.18	0.11	426.6	0.078
Belarus	386.4	413.0	470.9	0.182	0.222	-84.53	-0.04	648.9	0.119
Ghana	369.0	61.8	70.5	0.174	0.033	298.48	0.14	155.5	0.029
Kazakhstan	365.7	543.0	619.2	0.172	0.292	-253.48	-0.12	1,032.1	0.189
Croatia	365.1	446.0	508.5	0.172	0.240	-143.42	-0.07	860.9	0.158
Slovak Republic	357.5	375.1	427.7	0.169	0.202	-70.24	-0.03	748.1	0.137
Zimbabwe	353.4	143.7	163.8	0.167	0.077	189.59	0.09	234.1	0.043
Trinidad and Tobago	335.6	180.0	205.3	0.158	0.097	130.33	0.06	320.4	0.059
Vietnam	329.1	214.2	244.2	0.155	0.115	84.90	0.04	345.7	0.063
Cote d'Ivoire	325.2	198.5	226.4	0.153	0.107	98.83	0.05	379.0	0.069
Sudan	315.1	135.0	154.0	0.149	0.073	161.15	0.08	198.5	0.036
Uruguay	306.5	142.5	162.5	0.145	0.077	144.03	0.07	302.7	0.055
Ecuador	302.3	243.2	277.3	0.143	0.131	25.03	0.01	517.2	0.095
Syrian Arab Republic	293.6	438.6	500.0	0.138	0.236	-206.44	-0.10	723.7	0.133
Tunisia	286.5	280.6	319.9	0.135	0.151	-33.39	-0.02	621.4	0.114
Angola	286.3	314.0	358.0	0.135	0.169	-71.68	-0.03	516.1	0.095
Luxembourg	279.1	401.8	458.2	0.132	0.216	-179.09	-0.08	1,587.8	0.291
Uzbekistan	275.6	232.3	264.8	0.130	0.125	10.76	0.01	495.4	0.091
Jamaica	273.5	128.1	146.1	0.129	0.069	127.41	0.06	280.5	0.051
Kenya	271.4	163.8	186.7	0.128	0.088	84.68	0.04	273.7	0.050
Qatar	263.8	268.6	306.3	0.124	0.144	-42.48	-0.02	509.2	0.093
Myanmar	258.4	368.3	420.0	0.122	0.198	-161.55	-0.08	628.4	0.115
Yemen, Republic of	243.5	255.2	291.0	0.115	0.137	-47.45	-0.02	421.6	0.077
Slovenia	231.7	387.3	441.6	0.109	0.208	-209.91	-0.10	776.9	0.142
Dominican Republic	218.9	178.8	203.9	0.103	0.096	15.03	0.01	370.0	0.068
Brunei Darussalam	215.2	361.5	412.2	0.101	0.194	-196.99	-0.09	553.7	0.102
Guatemala	210.2	115.9	132.1	0.099	0.062	78.08	0.04	259.9	0.048
Panama	206.6	176.1	200.8	0.097	0.095	5.82	0.00	372.0	0.068
Lebanon	203.0	125.8	143.5	0.096	0.068	59.52	0.03	436.0	0.080

Table I.34. Results of Regression Equation No. 34
(Countries ranked by actual quota under the Eleventh General Review)

	Actual	Estimated	Adjusted	Actual	Adjusted	'Residuals'		Memo Item:	
	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)
Tanzania	198.9	90.1	102.7	0.094	0.048	96.22	0.05	142.8	0.026
Oman	194.0	431.8	492.3	0.091	0.232	-298.31	-0.14	833.6	0.153
Cameroon	185.7	188.7	215.2	0.088	0.101	-29.49	-0.01	285.3	0.052
Uganda	180.5	54.7	62.4	0.085	0.029	118.11	0.06	86.5	0.016
Bolivia	171.5	94.5	107.8	0.081	0.051	63.72	0.03	155.4	0.028
El Salvador	171.3	113.6	129.6	0.081	0.061	41.75	0.02	192.5	0.035
Jordan	170.5	264.2	301.3	0.080	0.142	-130.76	-0.06	434.1	0.080
Bosnia-Herzegovina	169.1	207.5	236.6	0.080	0.112	-67.50	-0.03	392.5	0.072
Costa Rica	164.1	118.2	134.8	0.077	0.064	29.29	0.01	282.4	0.052
Afghanistan, Islamic State of	161.9	26.3	30.0	0.076	0.014	131.90	0.06	54.2	0.010
Senegal	161.8	111.0	126.6	0.076	0.060	35.21	0.02	158.8	0.029
Azerbaijan	160.9	162.8	185.6	0.076	0.088	-24.67	-0.01	251.2	0.046
Gabon	154.3	264.6	301.7	0.073	0.142	-147.39	-0.07	383.3	0.070
Georgia	150.3	59.4	67.8	0.071	0.032	82.54	0.04	108.4	0.020
Lithuania	144.2	170.4	194.3	0.068	0.092	-50.13	-0.02	326.3	0.060
Cyprus	139.6	129.9	148.1	0.066	0.070	-8.49	0.00	330.5	0.061
Namibia	136.5	133.6	152.3	0.064	0.072	-15.79	-0.01	190.9	0.035
Bahrain	135.0	305.5	348.4	0.064	0.164	-213.36	-0.10	589.0	0.108
Ethiopia	133.7	76.1	86.8	0.063	0.041	46.92	0.02	131.9	0.024
Papua New Guinea	131.6	116.0	132.3	0.062	0.062	-0.72	0.00	232.4	0.043
Bahamas, The	130.3	93.7	106.9	0.061	0.050	23.43	0.01	190.5	0.035
Nicaragua	130.0	57.3	65.3	0.061	0.031	64.71	0.03	85.1	0.016
Honduras	129.5	88.3	100.6	0.061	0.047	28.86	0.01	138.7	0.025
Liberia	129.2	22.3	25.4	0.061	0.012	103.77	0.05	33.8	0.006
Latvia	126.8	128.0	146.0	0.060	0.069	-19.17	-0.01	253.1	0.046
Moldova	123.2	94.2	107.4	0.058	0.051	15.78	0.01	163.5	0.030
Madagascar	122.2	50.1	57.1	0.058	0.027	65.06	0.03	75.4	0.014
Iceland	117.6	51.5	58.7	0.055	0.028	58.93	0.03	197.3	0.036
Mozambique	113.6	46.3	52.8	0.054	0.025	60.80	0.03	76.9	0.014
Guinea	107.1	50.7	57.9	0.051	0.027	49.25	0.02	104.8	0.019
Sierra Leone	103.7	13.8	15.7	0.049	0.007	87.96	0.04	27.8	0.005
Malta	102.0	86.9	99.1	0.048	0.047	2.90	0.00	315.3	0.058
Mauritius	101.6	74.0	84.4	0.048	0.040	17.18	0.01	199.2	0.037
Paraguay	99.9	111.6	127.2	0.047	0.060	-27.32	-0.01	197.0	0.036
Mali	93.3	27.6	31.4	0.044	0.015	61.87	0.03	69.8	0.013

Table I.34. Results of Regression Equation No. 34
(Countries ranked by actual quota under the Eleventh General Review)

	Actual	Estimated	Adjusted	Actual	Adjusted	'Residuals'		Memo Item:	
	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)	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)
Suriname	92.1	65.8	75.1	0.043	0.035	17.02	0.01	97.8	0.018
Armenia	92.0	63.0	71.9	0.043	0.034	20.13	0.01	101.8	0.019
Guyana	90.9	35.3	40.3	0.043	0.019	50.62	0.02	61.1	0.011
Kyrgyz Republic	88.8	88.0	100.3	0.042	0.047	-11.51	-0.01	143.3	0.026
Cambodia	87.5	23.1	26.4	0.041	0.012	61.15	0.03	34.9	0.006
Tajikistan	87.0	145.5	165.9	0.041	0.078	-78.94	-0.04	225.4	0.041
Congo, Republic of	84.6	170.0	193.8	0.040	0.091	-109.20	-0.05	228.0	0.042
Haiti	81.9	28.4	32.3	0.039	0.015	49.56	0.02	42.8	0.008
Somalia	81.7	11.4	13.0	0.039	0.006	68.72	0.03	17.3	0.003
Rwanda	80.1	20.5	23.4	0.038	0.011	56.75	0.03	31.4	0.006
Burundi	77.0	16.1	18.4	0.036	0.009	58.65	0.03	30.5	0.006
Turkmenistan	75.2	132.8	151.4	0.035	0.071	-76.22	-0.04	272.1	0.050
Togo	73.4	21.5	24.5	0.035	0.012	48.90	0.02	47.4	0.009
Nepal	71.3	49.9	56.9	0.034	0.027	14.43	0.01	100.5	0.018
Fiji	70.3	50.3	57.3	0.033	0.027	12.97	0.01	109.7	0.020
Malawi	69.4	50.3	57.4	0.033	0.027	12.00	0.01	74.3	0.014
Macedonia, FYR	68.9	71.2	81.2	0.032	0.038	-12.34	-0.01	144.4	0.026
Barbados	67.5	60.5	69.0	0.032	0.033	-1.52	0.00	120.1	0.022
Niger	65.8	41.1	46.8	0.031	0.022	18.98	0.01	67.3	0.012
Estonia	65.2	81.3	92.6	0.031	0.044	-27.45	-0.01	167.1	0.031
Mauritania	64.4	36.8	41.9	0.030	0.020	22.46	0.01	52.9	0.010
Botswana	63.0	60.7	69.3	0.030	0.033	-6.27	0.00	358.4	0.066
Benin	61.9	44.3	50.5	0.029	0.024	11.36	0.01	73.3	0.013
Burkina Faso	60.2	37.0	42.2	0.028	0.020	17.98	0.01	64.3	0.012
Chad	56.0	26.2	29.9	0.026	0.014	26.08	0.01	42.2	0.008
Central African Republic	55.7	18.7	21.4	0.026	0.010	34.33	0.02	35.6	0.007
Lao, People's Dem. Republi	52.9	21.9	25.0	0.025	0.012	27.88	0.01	34.8	0.006
Mongolia	51.1	46.9	53.5	0.024	0.025	-2.38	0.00	85.8	0.016
Swaziland	50.7	45.5	51.9	0.024	0.024	-1.19	0.00	108.7	0.020
Albania	48.7	43.7	49.9	0.023	0.024	-1.16	0.00	86.4	0.016
Lesotho	34.9	57.2	65.2	0.016	0.031	-30.30	-0.01	93.8	0.017
Equatorial Guinea	32.6	5.9	6.7	0.015	0.003	25.88	0.01	8.2	0.001
Gambia, The	31.1	18.4	20.9	0.015	0.010	10.15	0.01	29.2	0.005
Belize	18.8	26.0	29.7	0.009	0.014	-10.88	-0.01	39.9	0.007
San Marino	17.0	24.6	28.0	0.008	0.013	-10.99	-0.01	90.8	0.017

Table I.34. Results of Regression Equation No. 34
(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)
Vanuatu	17.0	9.8	11.2	0.008	0.005	5.81	0.00	16.2	0.003
Djibouti	15.9	17.7	20.2	0.007	0.010	-4.33	0.00	29.1	0.005
Eritrea	15.9	12.1	13.8	0.007	0.007	2.07	0.00	30.6	0.006
St. Lucia	15.3	13.7	15.7	0.007	0.007	-0.37	0.00	33.3	0.006
Guinea-Bissau	14.2	6.3	7.2	0.007	0.003	7.01	0.00	9.9	0.002
Antigua and Barbuda	13.5	22.4	25.6	0.006	0.012	-12.05	-0.01	51.9	0.010
Grenada	11.7	8.0	9.1	0.006	0.004	2.62	0.00	16.6	0.003
Samoa	11.6	6.7	7.7	0.005	0.004	3.93	0.00	11.6	0.002
Solomon Islands	10.4	13.7	15.6	0.005	0.007	-5.17	0.00	19.9	0.004
Cape Verde	9.6	9.2	10.5	0.005	0.005	-0.94	0.00	15.5	0.003
Comoros	8.9	6.0	6.8	0.004	0.003	2.10	0.00	10.4	0.002
St. Kitts and Nevis	8.9	5.0	5.7	0.004	0.003	3.21	0.00	12.8	0.002
Seychelles	8.8	11.4	13.0	0.004	0.006	-4.18	0.00	24.6	0.005
St. Vincent and the Grenadin	8.3	7.8	8.9	0.004	0.004	-0.61	0.00	16.2	0.003
Dominica	8.2	7.1	8.1	0.004	0.004	0.06	0.00	11.2	0.002
Maldives	8.2	15.6	17.8	0.004	0.008	-9.55	-0.01	23.9	0.004
Sao Tome and Principe	7.4	2.0	2.3	0.003	0.001	5.08	0.00	3.2	0.001
Tonga	6.9	5.8	6.6	0.003	0.003	0.26	0.00	10.0	0.002
Bhutan	6.3	6.6	7.5	0.003	0.004	-1.18	0.00	14.4	0.003
Kiribati	5.6	-1.3	-1.5	0.003	-0.001	7.13	0.00	13.6	0.002
Micronesia, Fed. States of	5.1	7.4	8.4	0.002	0.004	-3.32	0.00	13.1	0.002
Marshall Islands	3.5	5.2	6.0	0.002	0.003	-2.49	0.00	7.8	0.001
Palau, Republic of	3.1	3.1	3.6	0.001	0.002	-0.46	0.00	5.7	0.001
Total	61,692.8	54,106.7	61,692.8	29.1	29.1	0.0	0.0	138,110.3	25.3
Memo: Sum of squared residuals						7,049,548	1.57		

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.