

**Regression Number:** 33  
**Regression Name:** Members with Quota Shares of Equal to or Less Than 1.0 Percent  
 Re-estimated Bretton Woods Formula with Real Effective Exchange Rate Variability Times Current Receipts as an Additional Variable

**Quota Review:** Eleventh

$$Q = ( 0.00655 Y - 0.00841 R + 0.03310 P + 0.40804 VC - 0.03488 VREC ) \times ( 1 + C/Y )$$

(7.56)      (-1.91)      (2.68)      (13.4)      (-3.03)

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); VREC is the real effective exchange rate variability times current receipts where the variability of real effective exchange rate is defined in terms of the deviation of real effective exchange rate from a five-year moving average over a recent 13-year period (1982-94); t-ratios are given in parentheses.

Sample size	163	R-squared	0.83
Description of sample	Members with actual quota shares equal to or less than 1 percent	Adjusted R-squared	0.82
		S.E. of regression	220.4
Estimation method	Nonlinear Least Squares	SSR (from estimation)	7,674,028

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

Y	34.7
R	-4.7
P	58.1
VC	46.6
VREC	-60.7
C/Y	<u>26.1</u>
Total	100.0

**Table I.33. Results of Regression Equation No. 33**  
(Countries ranked by actual quota under the Eleventh General Review)

	Actual	Estimated	Adjusted	Actual	Adjusted	'Residuals'		<i>Memo Item:</i>	
	Quota	Quota	Estimated	Quota	Quota	Columns		Calculated Quotas Based on	
	Amount	Amount 1/	Quota	Shares	Shares	(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	1,816.0	2,176.9	0.998	1.027	-59.78	-0.03	3,487.7	0.639
Indonesia	2,079.3	1,832.2	2,196.2	0.981	1.036	-116.95	-0.06	4,318.0	0.792
Austria	1,872.3	1,980.9	2,374.6	0.883	1.120	-502.26	-0.24	6,972.5	1.278
South Africa	1,868.5	757.9	908.5	0.881	0.429	959.95	0.45	2,429.2	0.445
Nigeria	1,753.2	1,247.6	1,495.5	0.827	0.705	257.74	0.12	2,246.8	0.412
Norway	1,671.7	1,588.9	1,904.7	0.788	0.898	-232.97	-0.11	5,209.6	0.955
Denmark	1,642.8	1,200.5	1,439.1	0.775	0.679	203.72	0.10	5,450.0	0.999
Korea	1,633.6	3,094.8	3,709.8	0.770	1.750	-2,076.16	-0.98	9,049.7	1.659
Iran	1,497.2	1,496.1	1,793.4	0.706	0.846	-296.23	-0.14	3,095.9	0.568
Malaysia	1,486.6	1,377.9	1,651.7	0.701	0.779	-165.09	-0.08	5,608.4	1.028
Kuwait	1,381.1	1,831.2	2,195.1	0.651	1.035	-814.04	-0.38	2,832.9	0.519
Ukraine	1,372.0	1,173.6	1,406.8	0.647	0.664	-34.83	-0.02	2,172.1	0.398
Poland	1,369.0	933.9	1,119.5	0.646	0.528	249.53	0.12	2,657.1	0.487
Finland	1,263.8	1,217.3	1,459.2	0.596	0.688	-195.39	-0.09	3,463.0	0.635
Algeria	1,254.7	914.2	1,095.9	0.592	0.517	158.78	0.08	1,811.0	0.332
Iraq	1,188.4	1,262.7	1,513.6	0.560	0.714	-325.20	-0.15	1,810.1	0.332
Libya	1,123.7	1,105.6	1,325.3	0.530	0.625	-201.64	-0.10	1,720.9	0.315
Thailand	1,081.9	1,258.8	1,509.0	0.510	0.712	-427.10	-0.20	4,701.3	0.862
Hungary	1,038.4	549.9	659.2	0.490	0.311	379.21	0.18	1,644.2	0.301
Pakistan	1,033.7	459.8	551.2	0.488	0.260	482.53	0.23	1,131.9	0.208
Romania	1,030.2	744.7	892.7	0.486	0.421	137.52	0.07	1,243.8	0.228
Turkey	964.0	1,169.6	1,402.0	0.455	0.661	-438.04	-0.21	2,905.9	0.533
Egypt	943.7	591.3	708.7	0.445	0.334	234.96	0.11	2,054.5	0.377
Israel	928.2	707.9	848.6	0.438	0.400	79.65	0.04	2,101.2	0.385
New Zealand	894.6	511.7	613.4	0.422	0.289	281.19	0.13	1,429.0	0.262
Philippines	879.9	624.7	748.9	0.415	0.353	131.03	0.06	1,852.2	0.340
Portugal	867.4	827.8	992.3	0.409	0.468	-124.87	-0.06	3,046.1	0.558
Singapore	862.5	966.7	1,158.8	0.407	0.547	-296.32	-0.14	8,339.7	1.529
Chile	856.1	374.4	448.8	0.404	0.212	407.31	0.19	1,398.3	0.256
Ireland	838.4	628.4	753.3	0.395	0.355	85.12	0.04	3,320.4	0.609
Greece	823.0	798.8	957.5	0.388	0.452	-134.48	-0.06	2,091.0	0.383
Czech Republic	819.3	747.3	895.8	0.386	0.423	-76.53	-0.04	1,736.0	0.318
Colombia	774.0	459.8	551.2	0.365	0.260	222.79	0.11	1,324.3	0.243
Bulgaria	640.2	650.8	780.1	0.302	0.368	-139.92	-0.07	1,046.6	0.192
Peru	638.4	390.2	467.8	0.301	0.221	170.64	0.08	858.3	0.157
United Arab Emirates	611.7	841.0	1,008.2	0.288	0.475	-396.47	-0.19	2,176.5	0.399
Morocco	588.2	270.8	324.6	0.277	0.153	263.58	0.12	919.4	0.169
Bangladesh	533.3	184.0	220.6	0.252	0.104	312.70	0.15	484.4	0.089
Congo, Dem. Republic of	533.0	161.8	193.9	0.251	0.091	339.07	0.16	301.1	0.055
Zambia	489.1	90.2	108.1	0.231	0.051	381.00	0.18	183.3	0.034

**Table I.33. Results of Regression Equation No. 33**  
(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)
FRY (Serbia/Montenegro)	467.7	726.4	870.7	0.221	0.411	-403.00	-0.19	1,076.3	0.197
Sri Lanka	413.4	142.9	171.3	0.195	0.081	242.09	0.11	426.6	0.078
Belarus	386.4	396.5	475.3	0.182	0.224	-88.90	-0.04	648.9	0.119
Ghana	369.0	40.9	49.0	0.174	0.023	319.99	0.15	155.5	0.029
Kazakstan	365.7	575.0	689.3	0.172	0.325	-323.58	-0.15	1,032.1	0.189
Croatia	365.1	435.6	522.2	0.172	0.246	-157.05	-0.07	860.9	0.158
Slovak Republic	357.5	346.0	414.7	0.169	0.196	-57.24	-0.03	748.1	0.137
Zimbabwe	353.4	88.0	105.5	0.167	0.050	247.93	0.12	234.1	0.043
Trinidad and Tobago	335.6	169.9	203.6	0.158	0.096	131.99	0.06	320.4	0.059
Vietnam	329.1	139.3	167.0	0.155	0.079	162.14	0.08	345.7	0.063
Cote d'Ivoire	325.2	175.0	209.8	0.153	0.099	115.42	0.05	379.0	0.069
Sudan	315.1	135.9	162.9	0.149	0.077	152.19	0.07	198.5	0.036
Uruguay	306.5	118.4	142.0	0.145	0.067	164.52	0.08	302.7	0.055
Ecuador	302.3	237.7	285.0	0.143	0.134	17.35	0.01	517.2	0.095
Syrian Arab Republic	293.6	394.4	472.7	0.138	0.223	-179.13	-0.08	723.7	0.133
Tunisia	286.5	211.4	253.4	0.135	0.119	33.13	0.02	621.4	0.114
Angola	286.3	310.7	372.4	0.135	0.176	-86.12	-0.04	516.1	0.095
Luxembourg	279.1	353.8	424.1	0.132	0.200	-145.03	-0.07	1,587.8	0.291
Uzbekistan	275.6	237.5	284.7	0.130	0.134	-9.06	0.00	495.4	0.091
Jamaica	273.5	87.6	105.0	0.129	0.050	168.50	0.08	280.5	0.051
Kenya	271.4	101.3	121.4	0.128	0.057	149.99	0.07	273.7	0.050
Qatar	263.8	268.6	322.0	0.124	0.152	-58.16	-0.03	509.2	0.093
Myanmar	258.4	393.4	471.5	0.122	0.222	-213.14	-0.10	628.4	0.115
Yemen, Republic of	243.5	272.3	326.4	0.115	0.154	-82.93	-0.04	421.6	0.077
Slovenia	231.7	316.5	379.4	0.109	0.179	-147.73	-0.07	776.9	0.142
Dominican Republic	218.9	142.1	170.3	0.103	0.080	48.61	0.02	370.0	0.068
Brunei Darussalam	215.2	277.1	332.2	0.101	0.157	-117.01	-0.06	553.7	0.102
Guatemala	210.2	100.4	120.3	0.099	0.057	89.86	0.04	259.9	0.048
Panama	206.6	161.6	193.7	0.097	0.091	12.87	0.01	372.0	0.068
Lebanon	203.0	185.8	222.7	0.096	0.105	-19.68	-0.01	436.0	0.080
Tanzania	198.9	77.2	92.5	0.094	0.044	106.39	0.05	142.8	0.026
Oman	194.0	431.9	517.7	0.091	0.244	-323.72	-0.15	833.6	0.153
Cameroon	185.7	138.3	165.8	0.088	0.078	19.95	0.01	285.3	0.052
Uganda	180.5	50.0	59.9	0.085	0.028	120.56	0.06	86.5	0.016
Bolivia	171.5	73.7	88.4	0.081	0.042	83.14	0.04	155.4	0.028

**Table I.33. Results of Regression Equation No. 33**  
(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)
El Salvador	171.3	73.1	87.6	0.081	0.041	83.68	0.04	192.5	0.035
Jordan	170.5	160.8	192.8	0.080	0.091	-22.31	-0.01	434.1	0.080
Bosnia-Herzegovina	169.1	140.5	168.4	0.080	0.079	0.67	0.00	392.5	0.072
Costa Rica	164.1	94.0	112.6	0.077	0.053	51.48	0.02	282.4	0.052
Afghanistan, Islamic State of	161.9	31.3	37.5	0.076	0.018	124.36	0.06	54.2	0.010
Senegal	161.8	69.4	83.2	0.076	0.039	78.65	0.04	158.8	0.029
Azerbaijan	160.9	154.2	184.8	0.076	0.087	-23.93	-0.01	251.2	0.046
Gabon	154.3	202.9	243.2	0.073	0.115	-88.91	-0.04	383.3	0.070
Georgia	150.3	65.0	78.0	0.071	0.037	72.33	0.03	108.4	0.020
Lithuania	144.2	166.1	199.1	0.068	0.094	-54.89	-0.03	326.3	0.060
Cyprus	139.6	101.8	122.0	0.066	0.058	17.58	0.01	330.5	0.061
Namibia	136.5	61.3	73.4	0.064	0.035	63.06	0.03	190.9	0.035
Bahrain	135.0	311.2	373.1	0.064	0.176	-238.08	-0.11	589.0	0.108
Ethiopia	133.7	63.3	75.9	0.063	0.036	57.82	0.03	131.9	0.024
Papua New Guinea	131.6	89.1	106.8	0.062	0.050	24.77	0.01	232.4	0.043
Bahamas, The	130.3	77.6	93.0	0.061	0.044	37.34	0.02	190.5	0.035
Nicaragua	130.0	48.2	57.7	0.061	0.027	72.26	0.03	85.1	0.016
Honduras	129.5	54.3	65.1	0.061	0.031	64.43	0.03	138.7	0.025
Liberia	129.2	15.6	18.7	0.061	0.009	110.47	0.05	33.8	0.006
Latvia	126.8	126.4	151.6	0.060	0.071	-24.75	-0.01	253.1	0.046
Moldova	123.2	92.1	110.4	0.058	0.052	12.84	0.01	163.5	0.030
Madagascar	122.2	35.7	42.7	0.058	0.020	79.46	0.04	75.4	0.014
Iceland	117.6	59.2	71.0	0.055	0.033	46.62	0.02	197.3	0.036
Mozambique	113.6	35.4	42.4	0.054	0.020	71.16	0.03	76.9	0.014
Guinea	107.1	50.7	60.7	0.051	0.029	46.36	0.02	104.8	0.019
Sierra Leone	103.7	12.8	15.4	0.049	0.007	88.33	0.04	27.8	0.005
Malta	102.0	47.4	56.8	0.048	0.027	45.22	0.02	315.3	0.058
Mauritius	101.6	47.2	56.6	0.048	0.027	45.00	0.02	199.2	0.037
Paraguay	99.9	77.1	92.4	0.047	0.044	7.45	0.00	197.0	0.036
Mali	93.3	28.3	33.9	0.044	0.016	59.36	0.03	69.8	0.013
Suriname	92.1	59.9	71.8	0.043	0.034	20.27	0.01	97.8	0.018
Armenia	92.0	68.7	82.3	0.043	0.039	9.68	0.01	101.8	0.019
Guyana	90.9	15.8	18.9	0.043	0.009	71.96	0.03	61.1	0.011
Kyrgyz Republic	88.8	91.2	109.4	0.042	0.052	-20.56	-0.01	143.3	0.026
Cambodia	87.5	23.1	27.7	0.041	0.013	59.76	0.03	34.9	0.006
Tajikistan	87.0	153.5	184.0	0.041	0.087	-97.03	-0.05	225.4	0.041
Congo, Republic of	84.6	148.7	178.2	0.040	0.084	-93.61	-0.04	228.0	0.042
Haiti	81.9	26.2	31.4	0.039	0.015	50.48	0.02	42.8	0.008
Somalia	81.7	11.0	13.2	0.039	0.006	68.54	0.03	17.3	0.003
Rwanda	80.1	18.7	22.4	0.038	0.011	57.74	0.03	31.4	0.006

**Table I.33. Results of Regression Equation No. 33**  
*(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/ (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)
Burundi	77.0	15.7	18.8	0.036	0.009	58.23	0.03	30.5	0.006
Turkmenistan	75.2	131.6	157.8	0.035	0.074	-82.56	-0.04	272.1	0.050
Togo	73.4	20.4	24.5	0.035	0.012	48.91	0.02	47.4	0.009
Nepal	71.3	36.2	43.4	0.034	0.020	27.86	0.01	100.5	0.018
Fiji	70.3	42.6	51.1	0.033	0.024	19.24	0.01	109.7	0.020
Malawi	69.4	39.8	47.7	0.033	0.022	21.70	0.01	74.3	0.014
Macedonia, FYR	68.9	60.7	72.8	0.032	0.034	-3.87	0.00	144.4	0.026
Barbados	67.5	53.3	63.9	0.032	0.030	3.57	0.00	120.1	0.022
Niger	65.8	34.5	41.3	0.031	0.019	24.46	0.01	67.3	0.012
Estonia	65.2	82.6	99.0	0.031	0.047	-33.78	-0.02	167.1	0.031
Mauritania	64.4	23.8	28.6	0.030	0.013	35.82	0.02	52.9	0.010
Botswana	63.0	54.4	65.2	0.030	0.031	-2.16	0.00	358.4	0.066
Benin	61.9	33.7	40.4	0.029	0.019	21.54	0.01	73.3	0.013
Burkina Faso	60.2	26.6	31.9	0.028	0.015	28.28	0.01	64.3	0.012
Chad	56.0	21.8	26.2	0.026	0.012	29.82	0.01	42.2	0.008
Central African Republic	55.7	16.0	19.2	0.026	0.009	36.47	0.02	35.6	0.007
Lao, People's Dem. Republi	52.9	18.2	21.9	0.025	0.010	31.03	0.02	34.8	0.006
Mongolia	51.1	54.0	64.8	0.024	0.031	-13.67	-0.01	85.8	0.016
Swaziland	50.7	34.1	40.8	0.024	0.019	9.88	0.01	108.7	0.020
Albania	48.7	53.2	63.7	0.023	0.030	-15.02	-0.01	86.4	0.016
Lesotho	34.9	40.2	48.1	0.016	0.023	-13.23	-0.01	93.8	0.017
Equatorial Guinea	32.6	4.8	5.7	0.015	0.003	26.87	0.01	8.2	0.001
Gambia, The	31.1	11.1	13.3	0.015	0.006	17.77	0.01	29.2	0.005
Belize	18.8	19.3	23.1	0.009	0.011	-4.31	0.00	39.9	0.007
San Marino	17.0	27.8	33.4	0.008	0.016	-16.37	-0.01	90.8	0.017
Vanuatu	17.0	7.0	8.4	0.008	0.004	8.61	0.00	16.2	0.003
Djibouti	15.9	14.0	16.7	0.007	0.008	-0.84	0.00	29.1	0.005
Eritrea	15.9	11.7	14.0	0.007	0.007	1.91	0.00	30.6	0.006
St. Lucia	15.3	9.5	11.4	0.007	0.005	3.93	0.00	33.3	0.006
Guinea-Bissau	14.2	6.0	7.2	0.007	0.003	6.97	0.00	9.9	0.002
Antigua and Barbuda	13.5	13.2	15.8	0.006	0.007	-2.27	0.00	51.9	0.010
Grenada	11.7	7.1	8.5	0.006	0.004	3.19	0.00	16.6	0.003
Samoa	11.6	4.5	5.4	0.005	0.003	6.22	0.00	11.6	0.002
Solomon Islands	10.4	9.7	11.7	0.005	0.005	-1.26	0.00	19.9	0.004
Cape Verde	9.6	6.0	7.2	0.005	0.003	2.44	0.00	15.5	0.003

**Table I.33. Results of Regression Equation No. 33**  
*(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)
Comoros	8.9	3.9	4.7	0.004	0.002	4.20	0.00	10.4	0.002
St. Kitts and Nevis	8.9	3.7	4.4	0.004	0.002	4.47	0.00	12.8	0.002
Seychelles	8.8	8.6	10.3	0.004	0.005	-1.52	0.00	24.6	0.005
St. Vincent and the Grenadin	8.3	7.1	8.5	0.004	0.004	-0.22	0.00	16.2	0.003
Dominica	8.2	3.8	4.5	0.004	0.002	3.67	0.00	11.2	0.002
Maldives	8.2	7.1	8.5	0.004	0.004	-0.33	0.00	23.9	0.004
Sao Tome and Principe	7.4	2.0	2.4	0.003	0.001	5.03	0.00	3.2	0.001
Tonga	6.9	4.0	4.8	0.003	0.002	2.14	0.00	10.0	0.002
Bhutan	6.3	5.0	6.0	0.003	0.003	0.34	0.00	14.4	0.003
Kiribati	5.6	-0.5	-0.6	0.003	0.000	6.21	0.00	13.6	0.002
Micronesia, Fed. States of	5.1	5.7	6.8	0.002	0.003	-1.73	0.00	13.1	0.002
Marshall Islands	3.5	4.2	5.0	0.002	0.002	-1.53	0.00	7.8	0.001
Palau, Republic of	3.1	2.6	3.2	0.001	0.001	-0.07	0.00	5.7	0.001
Total	61,692.8	51,465.7	61,692.8	29.1	29.1	0.0	0.0	138,110.3	25.3
Memo: Sum of squared residuals						9,842,198	2.19		

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.