

## **SECTION II. REGRESSION RESULTS FOR CHOW AND WALD TESTS**

This section presents regression results used in the calculation of Chow and Wald tests (equations numbered 38 through 52), discussed in the Statistical Appendix, Part A, Section III.

**Regression Number:** 38  
**Regression Name:** Chow Test. Sixth Quota Review.

**Quota Review:** Sixth

$$Q = ( 0.00607 * Y \quad -0.05538 * R + \quad 0.02365 * P + \quad 1.09530 * VC ) \times (1 + C/Y)$$

(21.76)
(-6.83)
(4.20)
(6.06)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	122	R-squared	0.97
Description of sample	Members in the Sixth	Adjusted R-squared	0.97
	Quota Review	S.E. of regression	146.76
Estimation method	Nonlinear Least Squares	SSR (from estimation)	2,541,486

**Relative Contributions of Variables in the Estimated Formula**

(In percent)

Y	46.4
R	-20.2
P	25.1
VC	33.2
C/Y	<u>15.5</u>
Total	100.0

Regression Number: 39  
 Regression Name: Chow Test. Seventh Quota Review.

Quota Review: Seventh

$$Q = ( 0.00588 * Y - 0.07865 * R + 0.01839 * P + 0.44329 * VC ) \times ( 1 + C/Y )$$

(14.16)
(-5.96)
(5.09)
(5.81)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	122	R-squared	0.96
Description of sample	Members in the Seventh Quota Review	Adjusted R-squared	0.96
		S.E. of regression	285.11
Estimation method	Nonlinear Least Squares	SSR (from estimation)	9,592,121

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

Y	48.7
R	-28.1
P	25.6
VC	36.9
C/Y	<u>17.0</u>
Total	100.0

Regression Number: 40  
 Regression Name: Chow Test. Eighth Quota Review.

Quota Review: Eighth

$$Q = ( 0.00589 * Y - 0.04015 * R + 0.00980 * P + 0.34272 * VC ) x (1 + C/Y)$$

(16.41)
(-4.49)
(2.74)
(8.28)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	122	R-squared	0.97
Description of sample	Members in the Eighth Quota Review	Adjusted R-squared	0.97
		S.E. of regression	354.46
Estimation method	Nonlinear Least Squares	SSR (from estimation)	14,825,531

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

Y	55.0
R	-16.4
P	16.0
VC	28.4
C/Y	<u>17.1</u>
Total	100.0

Regression Number: 41  
 Regression Name: Chow Test. Ninth Quota Review.

Quota Review: Ninth

$$Q = ( 0.00378 * Y - 0.00718 * R + 0.02338 * P + 0.07592 * VC ) \times ( 1 + C/Y )$$

(19.15)
(-0.79)
(9.92)
(3.86)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	122	R-squared	0.98
Description of sample	Members in the Ninth	Adjusted R-squared	0.98
	Quota Review	S.E. of regression	385.74
Estimation method	Nonlinear Least Squares	SSR (from estimation)	17,557,676

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

Y	34.2
R	-2.3
P	41.0
VC	6.9
C/Y	<u>20.2</u>
Total	100.0

Regression Number: 42  
 Regression Name: Chow Test. Tenth Quota Review.

Quota Review: Tenth

$$Q = ( 0.00262 * Y - 0.05219 * R + 0.01858 * P + 0.25794 * VC ) x (1 + C/Y)$$

(11.05)
(-7.13)
(8.46)
(10.05)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	122	R-squared	0.97
Description of sample	Members in the Tenth	Adjusted R-squared	0.97
	Quota Review	S.E. of regression	482.57
Estimation method	Nonlinear Least Squares	SSR (from estimation)	27,479,220

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

Y	32.2
R	-24.1
P	41.4
VC	32.6
C/Y	<u>17.9</u>
Total	100.0

**Regression Number:** 43  
**Regression Name:** Chow Test. Eleventh Quota Review.

**Quota Review:** Eleventh

$$Q = ( 0.00297 * Y - 0.03738 * R + 0.00714 * P + 0.59010 * VC ) x (1 + C/Y)$$

(11.69)
(-4.99)
(2.16)
(7.30)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	122	R-squared	0.96
Description of sample	Members in the Eleventh Quota Review	Adjusted R-squared	0.96
Estimation method	Nonlinear Least Squares	S.E. of regression	802.60
		SSR (from estimation)	76,011,951

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

Y	29.7
R	-15.6
P	14.4
VC	51.8
C/Y	<u>19.7</u>
Total	100.0

Regression Number: 44  
 Regression Name: Chow Test. Sixth and Seventh Quota Reviews.  
 Quota Review: Sixth and Seventh

$$Q = ( 0.00671 * Y - 0.03075 * R + 0.02016 * P + 0.15628 * VC ) x (1 + C/Y)$$

(25.55)            (-4.31)            (6.89)            (3.55)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	244	R-squared	0.95
Description of sample	122 Members Each in the Sixth and Seventh Quota Review	Adjusted R-squared	0.95
Estimation method	Nonlinear Least Squares	S.E. of regression	256.74
		SSR (from estimation)	15,819,445
		F Statistic 1/	14.22

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

Y	58.5
R	-12.1
P	27.6
VC	10.5
C/Y	<u>15.4</u>
Total	100.0



**Regression Number:** 45  
**Regression Name:** Chow Test. Seventh and Eighth Quota Reviews.

**Quota Review:** Seventh and Eighth

$$Q = ( 0.00594 * Y - 0.05153 * R + 0.01230 * P + 0.36104 * VC ) \times (1 + C/Y)$$

(22.15)
(-7.42)
(4.83)
(10.40)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	244	R-squared	0.96
Description of sample	122 Members Each in the Seventh and Eighth Quota Review	Adjusted R-squared	0.96
Estimation method	Nonlinear Least Squares	S.E. of regression	331.23
		SSR (from estimation)	26,331,690
		F Statistic 1/	3.67

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

Y	53.8
R	-20.4
P	19.2
VC	30.4
C/Y	<u>17.0</u>
Total	100.0

**Regression Number:** 46  
**Regression Name:** Chow Test. Eighth and Ninth Quota Reviews.

**Quota Review:** Eighth and Ninth

$$Q = ( 0.00420 * Y \quad -0.01710 * R + \quad 0.02160 * P + \quad 0.11966 * VC ) x (1 + C/Y)$$

(21.44)            (-2.37)                            (9.81)                            (5.96)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	244	R-squared	0.97
Description of sample	122 Members Each in the	Adjusted R-squared	0.97
	Eighth and Ninth Quota Review	S.E. of regression	440.98
Estimation method	Nonlinear Least Squares	SSR (from estimation)	46,671,431
		F Statistic 1/	20.65

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

Y	39.1
R	-6.2
P	37.5
VC	10.6
C/Y	<u>19.0</u>
Total	100.0

**Regression Number:** 47  
**Regression Name:** Chow Test. Ninth and Tenth Quota Reviews.

**Quota Review:** Ninth and Tenth

$$Q = ( 0.00319 * Y - 0.04932 * R + 0.02236 * P + 0.17298 * VC ) x (1 + C/Y)$$

(16.12)
(-6.72)
(10.55)
(8.30)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	244	R-squared	0.96
Description of sample	122 Members Each in the Ninth and Tenth Quota Review	Adjusted R-squared	0.96
Estimation method	Nonlinear Least Squares	S.E. of regression	590.85
		SSR (from estimation)	83,785,811
		F Statistic 1/	40.27

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

Y	35.4
R	-20.1
P	46.4
VC	19.6
C/Y	<u>18.7</u>
Total	100.0

Regression Number: 48  
 Regression Name: Chow Test. Tenth and Eleventh Quota Reviews.

Quota Review: Tenth and Eleventh

$$Q = ( 0.00297 * Y - 0.04574 * R + 0.01772 * P + 0.28887 * VC ) x (1 + C/Y)$$

(15.35)
(-7.86)
(9.45)
(8.50)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	244	R-squared	0.96
Description of sample	122 Members Each in the Tenth and Eleventh Quota Review	Adjusted R-squared	0.96
		S.E. of regression	738.25
Estimation method	Nonlinear Least Squares	SSR (from estimation)	130,802,986
		F Statistic 1/	12.35

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

Y	33.1
R	-20.3
P	38.0
VC	30.5
C/Y	18.7
Total	100.0

Regression Number: 49  
 Regression Name: Chow Test. Sixth, Seventh and Eighth Quota Reviews.

Quota Review: Sixth, Seventh, and Eighth

$$Q = ( 0.00649 * Y - 0.03343 * R + 0.01010 * P + 0.27522 * VC ) x (1 + C/Y)$$

(29.30)
(-5.85)
(4.45)
(9.09)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	366	R-squared	0.96
Description of sample	122 Members Each in the 6th, 7th and 8th Quota Review	Adjusted R-squared	0.96
Estimation method	Nonlinear Least Squares	S.E. of regression	314.31
		SSR (from estimation)	35,763,097
		F Statistic 1/	22.92

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

Y	60.6
R	-13.9
P	15.7
VC	21.4
C/Y	<u>16.2</u>
Total	100.0

**Regression Number:** 50  
**Regression Name:** Chow Test. Sixth, Seventh, Eighth and Ninth Quota Reviews.

**Quota Review:** Sixth, Seventh, Eighth and Ninth

$$Q = ( 0.00472 * Y \quad -0.01066 * R + \quad 0.01871 * P + \quad 0.11378 * VC ) \times (1 + C/Y)$$

(29.19)                    (-1.93)                    (10.48)                    (6.35)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	488	R-squared	0.96
Description of sample	122 Members Each in the 6th, 7th, 8th and 9th Quota Review	Adjusted R-squared	0.96
		S.E. of regression	408.96
Estimation method	Nonlinear Least Squares	SSR (from estimation)	80,949,267
		F Statistic 1/	76.60

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

Y	44.7
R	-4.1
P	31.6
VC	9.7
C/Y	<u>18.1</u>
Total	100.0

**Regression Number:** 51  
**Regression Name:** Chow Test. Sixth, Seventh, Eighth, Ninth and Tenth Quota Reviews.

**Quota Review:** Sixth, Seventh, Eighth, Ninth and Tenth

$$Q = ( 0.00401 * Y \quad -0.03285 * R + \quad 0.01725 * P + \quad 0.16564 * VC ) x (1 + C/Y)$$

(23.97)                      (-5.98)                      (9.91)                      (9.02)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	610	R-squared	0.94
Description of sample	122 Members Each in the 6th, 7th, 8th, 9th and 10th Quota Review	Adjusted R-squared	0.94
		S.E. of regression	556.94
Estimation method	Nonlinear Least Squares	SSR (from estimation)	187,972,690
		F Statistic 1/	188.47

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

Y	44.7
R	-14.4
P	34.5
VC	17.5
C/Y	<u>17.8</u>
<b>Total</b>	<b>100.0</b>

Regression Number: 52  
 Regression Name: Chow Test. Sixth Through Eleventh Quota Reviews.

Quota Review: Sixth Through Eleventh

$$Q = ( 0.00367 * Y \quad -0.03889 * R + \quad 0.01826 * P + \quad 0.20850 * VC ) x (1 + C/Y)$$

(28.20)
(-9.42)
(14.15)
(10.95)

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 (1991-94); 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); t-ratios are given in parentheses.

Sample size	732	R-squared	0.95
Description of sample	122 Members Each in the Sixth Through Eleventh Quota Review	Adjusted R-squared	0.95
		S.E. of regression	622.94
Estimation method	Nonlinear Least Squares	SSR (from estimation)	282,503,228
		F Statistic 1/	127.58

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

Y	40.3
R	-17.1
P	37.2
VC	21.2
C/Y	<u>18.4</u>
Total	100.0