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2010 - 2009

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

التشكرات

قال عليه السلام

« من لا يشكر الناس لا يشكر الله »

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فهرس المحتوى

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فهرس الجاول

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19		(2 -1)
45	1987 (1994 -1975) PIB/ :	(3 -1)
46	1987 (1994 -1975) PIB/	(4 -1)
81		(1-2)
91		(2-2)
106		(1-3)
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161	(2004 -2001)	(1-4)
162	1994 -1990 :	(2 -4)
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166	2000 -1995 :	(8 -4)
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169	1994 -1990 :	(13 -4)
169	2008 -2001	(14 -4)
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171	2008 -2001	(18 -4)
172	2008 -2001 :	(19 -4)
172	2008 -1990	(20 -4)
174	1994 -1990	(21 -4)

174	1994 -1990	<i>(22 -4)</i>
175	2000 -1995	<i>(23 -4)</i>
175	2002- 1999 -1998 :	<i>(24 -4)</i>
176	2008 -2001	<i>(25 -4)</i>
177	2008 -2001	<i>(26-4)</i>
178	2008 -1990	<i>(27 -4)</i>
180	2008 -1990	<i>(28 -4)</i>
181	2008 -1990	<i>(29 -4)</i>
182	2008-1990	<i>(30 -4)</i>
193	(gPIB)	<i>(1-5)</i>
194		<i>(2-5)</i>
194	%5 = α ADF	<i>(3-5)</i>
194	.(Gr)	<i>(4-5)</i>
195		<i>(5-5)</i>
195	.%5 = α ADF	<i>(6-5)</i>
195	.(Gr)	<i>(7-5)</i>
196		<i>(8-5)</i>
196	.%5 = α ADF	<i>(9-5)</i>
196	(Gr)	<i>(41-4)</i>
197	.(Gr)	<i>(10-5)</i>
197		<i>(11-5)</i>
197	%5 = α ADF	<i>(12-5)</i>
198	(BcdPIB)	<i>(13-5)</i>
198		<i>(14-5)</i>
198	%5 = α ADF	<i>(15-5)</i>
199	.(TC)	<i>(16-5)</i>
199		<i>(17-5)</i>
199	.%5 = α ADF	<i>(18-5)</i>
200	.(TC)	<i>(19-5)</i>
200		<i>(20-5)</i>
200	%5 = α ADF	<i>(21-5)</i>
201	.(TC)	<i>(22-5)</i>
201		<i>(23-5)</i>

201	$\%5 = \alpha$	ADF	<i>(24-5)</i>
202	(Ph)		<i>(25-5)</i>
202	.		<i>(26-5)</i>
202	$\%5 = \alpha$	ADF	<i>(27-5)</i>
203	(Ph)		<i>(28-5)</i>
203	.		<i>(29-5)</i>
203	$\%5 = \alpha$	ADF	<i>(30-5)</i>
204	(Ph)		<i>(31-5)</i>
204	.		<i>(32-5)</i>
204	$\%5 = \alpha$	ADF	<i>(33-5)</i>
205	(TRr)		<i>(34-5)</i>
205			<i>(35-5)</i>
205	$\%5 = \alpha$	ADF	<i>(36-5)</i>
206	(TRr)		<i>(37-5)</i>
206			<i>(38-5)</i>
206	$\%5 = \alpha$	ADF	<i>(39-5)</i>
207	(TRr)		<i>(40-5)</i>
207			<i>(41-5)</i>
207	$\%5 = \alpha$	ADF	<i>(42-5)</i>
208	(INTr)	:(42-5)	<i>(43-5)</i>
208			<i>(44-5)</i>
208	$\%5 = \alpha$	ADF	<i>(45-5)</i>
209	(INTr)		<i>(46-5)</i>
209	$\%5 = \alpha$	ADF	<i>(47-5)</i>
209	(M2r)		<i>(48-5)</i>
210			<i>(49-5)</i>
210	$\%5 = \alpha$	ADF	<i>(50-5)</i>
210	(M2r)		<i>(51-5)</i>
211			<i>(52-5)</i>
211	$\%5 = \alpha$	ADF	<i>(53-5)</i>
211	(M2r)		<i>(54-5)</i>
212			<i>(55-5)</i>
212	$\%5 = \alpha$	ADF	<i>(56-5)</i>

212	.		<i>(57-5)</i>
213	$\%5 = \alpha$	ADF	<i>(58-5)</i>
213	$\%5 = \alpha$	ADF	<i>(59-5)</i>

فهرس الأشكال

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04		(1 -1)
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14	(BP)	(4-1)
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142		<i>(13 -3)</i>
143		<i>(14 -3)</i>
172	2008 -1990 :	<i>(1 -4)</i>
172	(BCDPIB) (gPIBr) VAR	<i>(1 -5)</i>

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الفصل الأول:

التوازن الخارجي وعلاقته

بالنمو الاقتصادي



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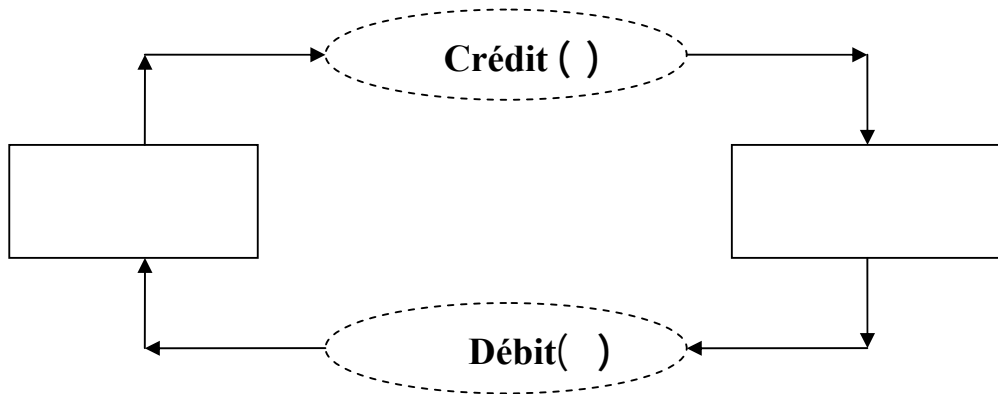
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² jean pierre delas , **économie contemporaine** , édition marketing , paris , 1992 , p 131 .

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$B = X - M \dots \dots (01)$

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B

:(X) ❖

:(M) ❖

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$M = my + M_0 \dots \dots \dots (02)$

$X = X_0 \dots \dots \dots (03)$

: X_0

: M_0

: m :

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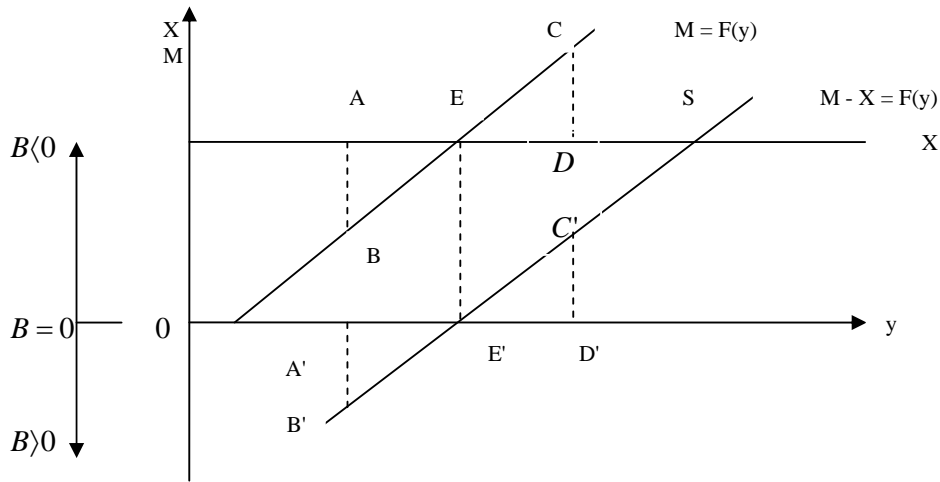
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AB

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A'B'

CD

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C'D'

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K_M

K_X

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: K_M

: K_X

E

AB

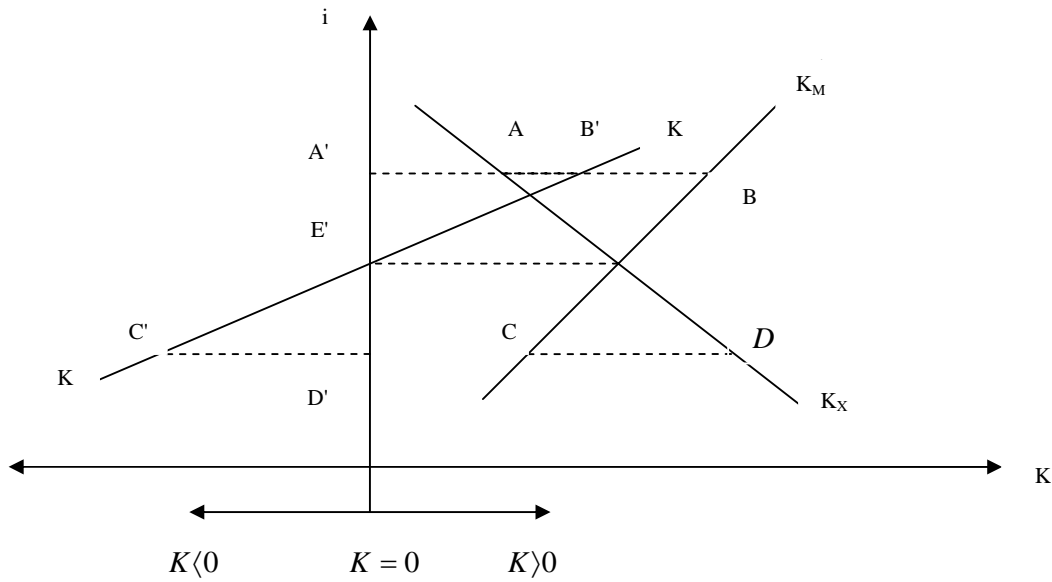
A'B'

CD

C'D'

: A',B',C' :

:(3-1)



:(BP)

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(BP)

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$$\frac{dR}{dt} = (X - M) + K = 0 \dots\dots\dots(04)$$

$$X_0 - my - M_0 + F_0 + gi = 0 \dots\dots\dots(05)$$

$$y = \frac{X_0 - M_0 + F_0}{m} + \frac{g}{m} i \dots\dots\dots(06)$$

(BP)

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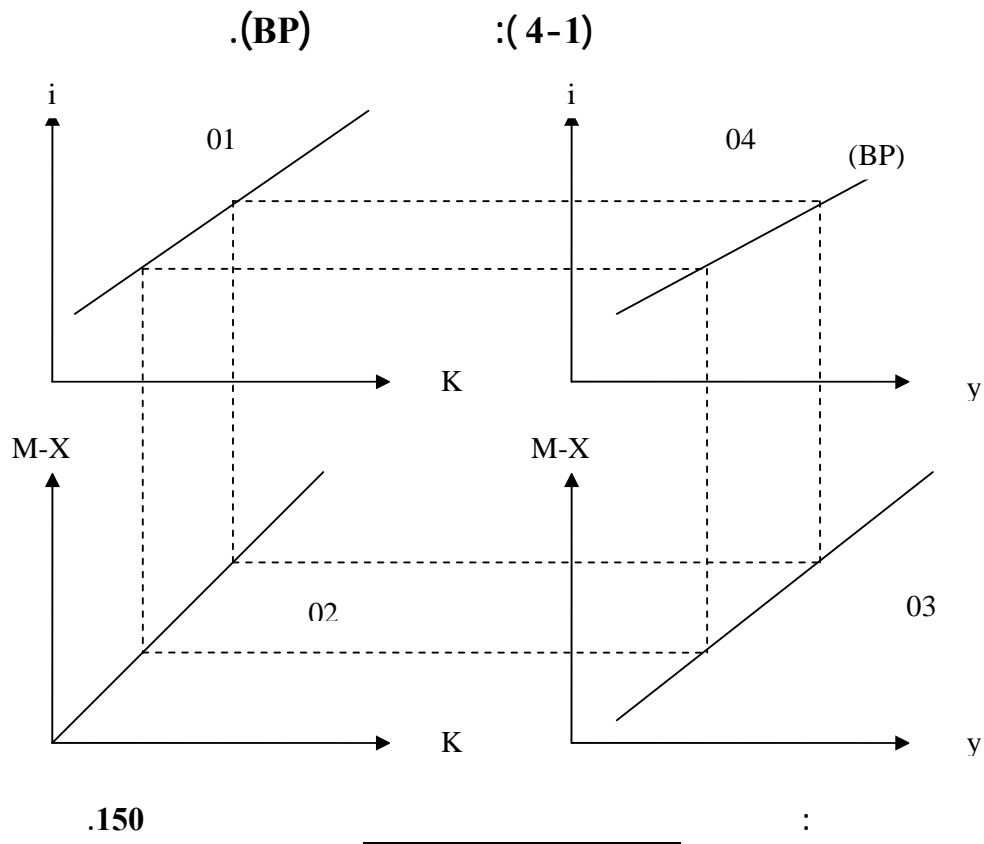
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(X-M)

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² Philippe d'arvisent , **Jean Pierre petit économie international** , édition dunob , France , 1999 ,p 39 .

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.(IS - LM - BP)

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(BP)

(IS- LM)

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$C = c(y - T) + C_0 \dots \dots \dots (07)$

: $y - T$

: c :

: T

: C_0

$I = I_0 - g i \dots \dots \dots (08).$

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: $g > 0$:

: I_0 :

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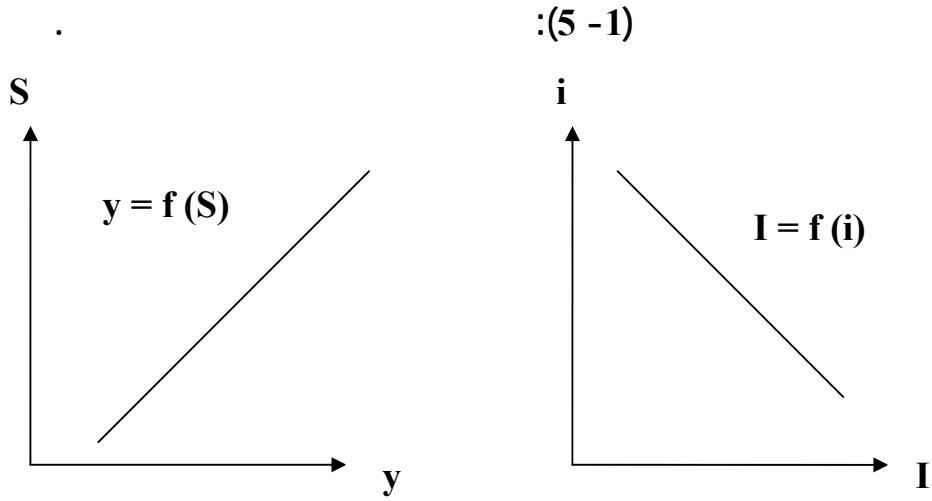
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(IS)

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(IS): $y = C + I + G + (X - M)$ (09)

(IS): $y - C = I + G + (X - M)$ (10)

$$\left. \begin{array}{l} Y_d = C + S_p \\ Y_d = y - T \end{array} \right\} \Rightarrow C + S_p = y - T \Rightarrow$$

$y - C = T + S_p$(11)

: (11) (10)

$$S_p + T = I + G + (X - M) \dots \dots \dots (12)$$

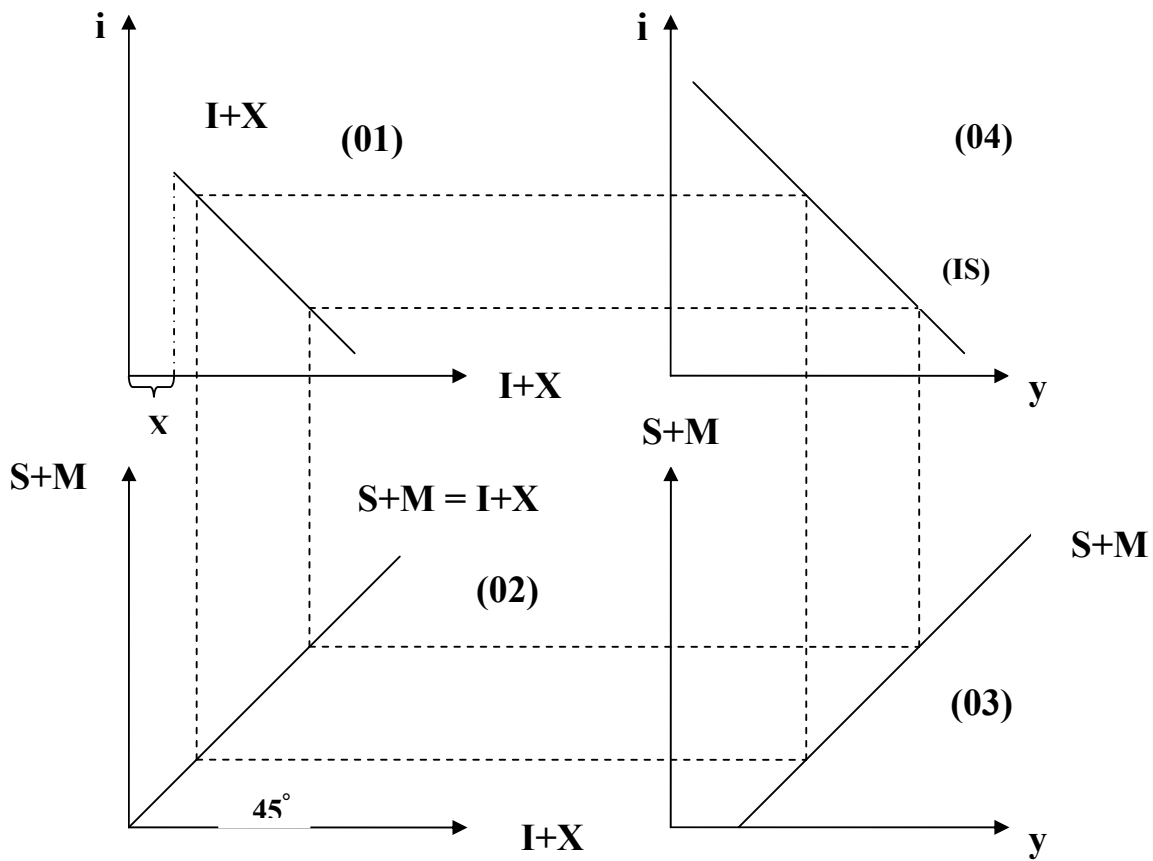
: S_p :

: (12)

$$c(y - T) - C_0 + T_0 = I_0 - gi + G_0 + X_0 - my - M_0$$

$$(IS): y = \frac{C_0 + I_0 + G_0 + X_0 - cT_0 - M_0}{1 - c} - \frac{g}{1 - c} i \dots \dots \dots (13)$$

(IS) : (6 - 1)



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:S)

: S+M = I+X •

:S+M < I+X •

:S+M > I+X •

.(LM)

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$(\frac{M^s}{P}) = M_0 \dots\dots\dots(14)$

:P :

: $M_0 (\frac{M^s}{P})$

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$dT = f(y)_1 = a_1 y \dots\dots\dots(15)$

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$$dp = f(y)_2 = a_2 y \dots\dots\dots(16)$$

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$$dA = f(y) = f(y)_1 + f(y)_2 = a_1 y + a_2 y = ay$$

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$$dS = f(i) = L_0 - hi \dots\dots\dots(17)$$

:

$$\left(\frac{M^d}{P}\right) = f(y \cdot i) = a_1 y + a_2 y + L_0 - hi \dots\dots\dots(18)$$

$$:\left(\frac{M^d}{P}\right) :$$

$$: a_2 + a_1 = a$$

$$: h$$

$$: L_0$$

:

$$(LM) : \left(\frac{M^d}{P}\right) = \left(\frac{M^s}{P}\right) \dots\dots\dots(19)$$

$$(LM) : ay + L_0 - hi = M_0 \dots\dots\dots(20)$$

: (20) (19)

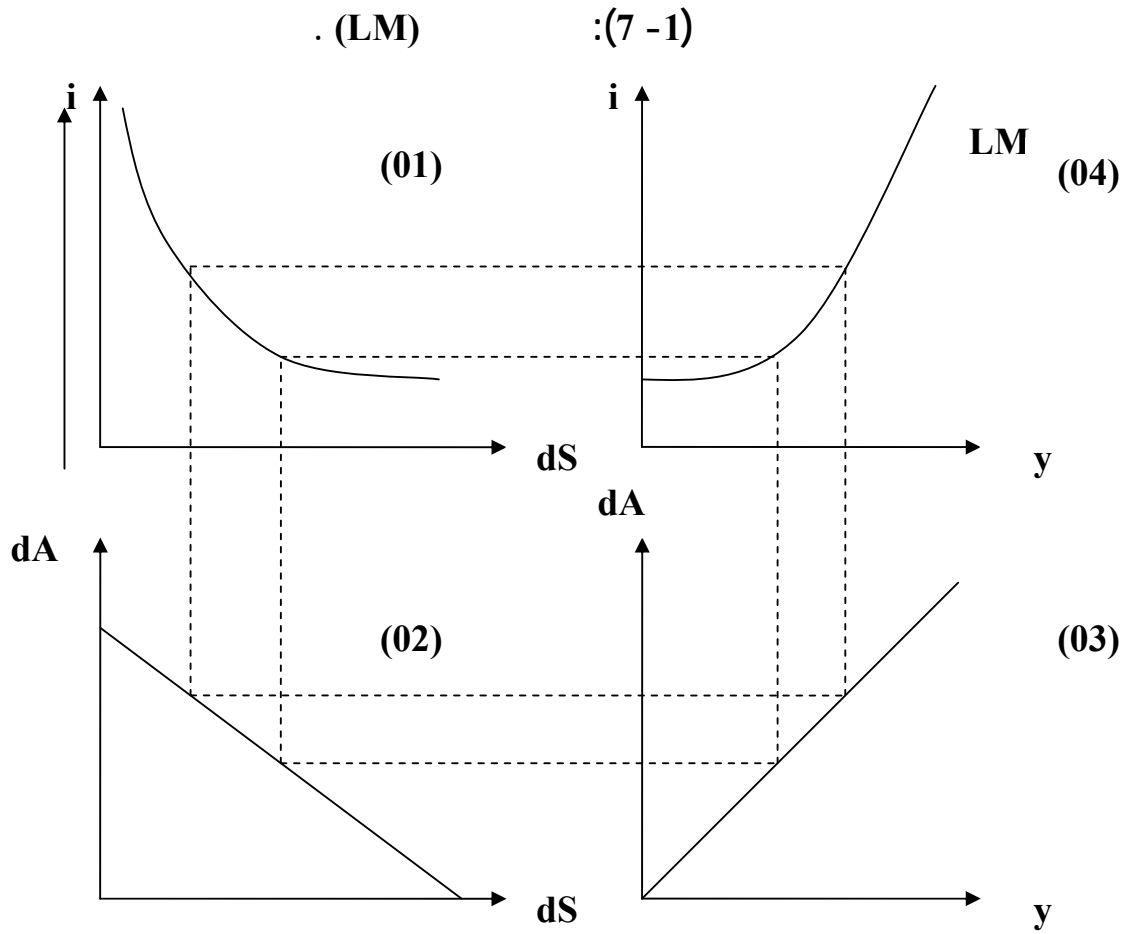
$$(LM) : y = \frac{M_0 - L_0}{a} + \frac{h}{a} i \dots\dots\dots(21)$$

(01) :

(7 -1)

(02)

(03)



.(IS - LM - BP)

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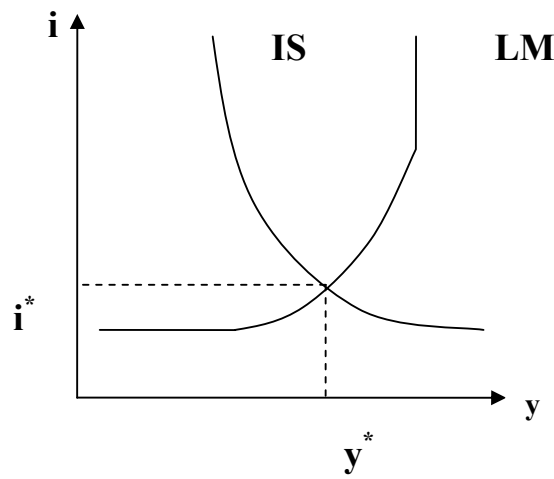
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(y^*, i^*)

:(8 -1)



.(IS - LM - BP)

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(BP) (LM) (IS)

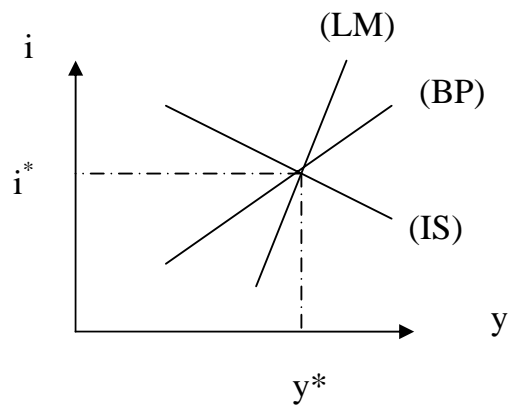
R :

$y + M = C + I + G + X \dots\dots\dots(22)$

$M_0 = L^d(y \cdot i) \dots\dots\dots(23)$

$B + K = R \dots\dots\dots(24)$

:(9 -1)



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$$y + M = C + I + G + X \dots\dots\dots(25) \quad :$$

$$y = C + T + S_p \dots\dots\dots(26) \quad :$$

$$(X - M) = (S_p - I) + (T - G) \dots\dots\dots(27) \quad :$$

1.

:(T - G) :

:(S_p - I)

:(X - M)

(27)

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:(PIB)

(27)

$$\frac{(X - M)}{PIB} = \frac{(S_p - I)}{PIB} + \frac{(T - G)}{PIB} \dots\dots\dots(28)$$

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$$S + M = I + X \dots\dots\dots(29)$$

:(I + X) :

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: S + M

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$$C = cY + C_0 \dots \dots \dots (30)$$

$$I = I_0 \dots \dots \dots (31)$$

$$G = G_0 \dots \dots \dots (32)$$

$$X = X_0 \dots \dots \dots (33)$$

$$M = M_0 + mY \dots \dots \dots (34)$$

:

$$(1 - c)Y - C_0 + mY + M_0 = I_0 + X_0 \dots \dots \dots (35)$$

:

$$\Delta Y = \frac{\Delta(C_0 + I_0 + G_0 + X_0 + M_0)}{1 - c + m} \dots \dots \dots (36)$$

$$\frac{1}{1 - c + m} :$$

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$$D = I_0 + G_0 \dots \dots \dots (29)$$

A

B

A

B

A

B

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A

A

B

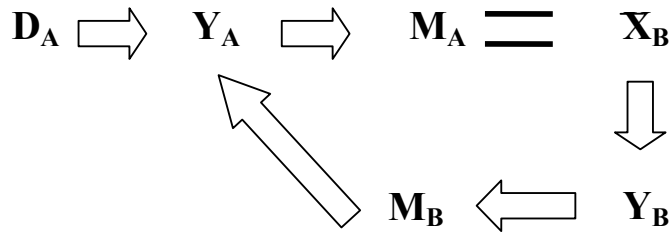
A

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B

A

:(10 -1)



: (38) (37) ΔD_A : A

$$\Delta Y_A + \Delta M_A = \Delta C_A + \Delta D_A + \Delta X_A \dots (39)$$

$$\Delta Y_B + \Delta M_B = \Delta C_B + \Delta D_B + \Delta X_B \dots (40)$$

B A

: A B

$$\Delta X_A = \Delta M_B \dots (41)$$

$$\Delta X_B = \Delta M_A \dots (42)$$

: (40) (39) (42) (41)

$$\Delta Y_A + \Delta M_A = \Delta C_A + \Delta D_A + \Delta X_B \dots (43)$$

$$\Delta Y_B + \Delta M_B = \Delta C_B + \Delta D_B + \Delta X_A \dots (44)$$

:A

$$C_A = c_A Y_A + C_{0A} \dots (45)$$

$$I_A = I_{0A} \dots (46)$$

$$G_A = G_{0A} \dots (47)$$

$$X_A = X_{0A} \dots (48)$$

$$M_A = M_{0A} + m_A Y_A \dots (49)$$

:B

$$C_B = c_B Y_B + C_{0B} \dots (50)$$

$$I_B = I_{0B} \dots (52)$$

$$G_B = G_{0B} \dots (53)$$

$$X_B = X_{0B} \dots (54)$$

$$M_B = M_{0B} + m_B Y_B \dots (55)$$

: A

$$\Delta C_A = c_A \Delta Y_A \dots (56)$$

$$\Delta M_A = m_A \Delta Y_A \dots (57)$$

$$\Delta C_B = c_B \Delta Y_B \dots (58)$$

$$\Delta M_B = m_B \Delta Y_B \dots (59)$$

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(59) (58) (57) (56) (40) (39)

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$$\Delta Y_A + m_A \Delta Y_A = c_A \Delta Y_A + m_B \Delta Y_B \dots (60)$$

$$\Delta Y_A (1 - c_A - m_A) - m_B \Delta Y_B = \Delta D_A \dots (61) \quad : (60)$$

$$\Delta Y_B + m \Delta Y_B = c_B \Delta Y_B + m_A \Delta Y_A \dots (62)$$

$$\Delta Y_B (1 - c_B + m_B) - m_A \Delta Y_A = 0 \dots (63) \quad : (62)$$

$$\Delta Y_B = \frac{m_A \Delta Y_A}{1 - c_B + m_B} \dots (64) \quad :$$

: (61) (64)

$$\Delta Y_A (1 - c_A - m_A) - m_B \frac{m_A \Delta Y_A}{1 - c_B + m_B} = \Delta D_A \dots (65)$$

$$\Delta Y_A = \left(\frac{1}{1 - c_A + m - \frac{m_A m_B}{1 - c_B + m_B}} \right) \Delta D_A \dots (66)$$

$$\Delta Y_A = K_A \Delta D_A \dots (67) \quad :$$

K_A

$$\frac{m_A m_B}{1 - c_B + m_B} :$$

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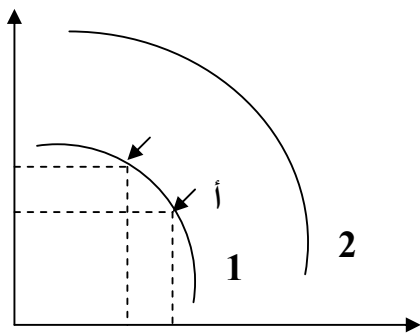
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² Jacque brasseul , **Introduction à l'économie du développement**, Paris, Armond colin édition, 1993, p p: 50- 51

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K_t : t

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$$\dot{K} = \frac{dK}{dt} = sY = s f(K_t, L_t)$$

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$$\dot{K} = s f(K_t, L_0 e^{nt})$$

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$$Y = f(K_t, L_t) \Rightarrow \begin{cases} \frac{dY}{dK_t} = p \\ \frac{dY}{dL_t} = w \end{cases}$$

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$$r = \frac{K_t}{L_0 e^{nt}} \Rightarrow K_t = r L_0 e^{nt}$$

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$$\dot{K}_t = \dot{r} L_0 e^{nt} + nr L_0 e^{nt} \quad : \quad \left(r = \frac{dr}{dt} \right) :$$

$$\dot{r} L_0 e^{nt} + nr L_0 e^{nt} = Y = f(K_t, L_0 e^{nt}) \Rightarrow$$

$$\dot{r} L_0 e^{nt} + nr L_0 e^{nt} = s f(r L_0 e^{nt}, L_0 e^{nt}) \Rightarrow$$

:

$$L_0 e^{nt} (\dot{r} + nr) = s f(r L_0 e^{nt}, L_0 e^{nt})$$

$$r + nr = s f(r, 1)$$

$$L_0 e^{nr}$$

$r :$

$f(r, 1) :$

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$K \bullet$

$(\frac{\Delta Y}{Y}) \bullet$

$(\frac{\Delta S}{\Delta Y}) .1$

$(\frac{K}{Y}) .2$

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$$\frac{\Delta S}{\Delta Y} = \frac{S}{Y} = s$$

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$$i \quad (i = \frac{I}{Y}) \quad (S = I)$$

$$: (I = \Delta K)$$

$$\frac{\Delta K}{\Delta Y} = k = \frac{I}{\Delta Y} \Rightarrow$$

$$\Delta Y = \frac{I}{K} \Rightarrow \frac{\Delta Y}{Y} = \frac{I}{K}$$

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$$g = \frac{s}{k}$$

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نسبة الصادرات/ الناتج المحلي الإجمالي			معدل نمو دخل الفرد للفترة (%) 1994-1975	الدولة
الزيادة -1994 1975)	1994	1975		
0.089	0.176	0.087	7.33	الصين
0.216	0.424	0.208	6.95	كوريا
0.222	0.538	0.316	6.56	تايوان
0.274	0.521	0.247	6.05	قبرص
0.266	0.431	0.166	5.88	تايلاند
1.369	2.098	0.729	5.76	هونغ كونج
-1.131	0.246	0.377	4.933	اندونيسيا
0.455	0.911	0.456	4.43	ماليزيا
0.185	0.380	0.194	3.60	تشيلي
0.053	0.173	0.119	3.46	ليسوتو
-0.023	0.217	0.240	3.17	مصر
0.67	0.169	0.102	2.75	باكستان
0.025	0.083	0.058	2.52	الهند
0.058	0.208	0.150	2.07	كولومبيا
0.047	0.259	0.212	2.03	المغرب
0.071	0.131	0.059	2.00	بنغلاديش
0.140	0.445	0.305	1.98	تونس
0.391	0.590	0.199	1.69	بورجواي
0.146	0.221	0.076	1.55	تركيا
0.147	0.297	0.150	1.54	أورجواي
0.138	0.422	0.284	1.24	الدومنيكان
0.027	0.051	0.024	1.21	ميثمار
0.191	0.299	0.108	1.13	المكسيك
0.073	0.353	0.280	0.99	الإكوادور

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5.76	1.369	2.098	0.729	هونج كونج
-0.12	0.498	0.723	0.226	ترينيداد وتوباكو
4.43	0.455	0.911	0.456	ماليزيا
1.69	0.391	0.590	0.199	باراجواي
-4.11	0.311	0.670	0.359	جابون
6.05	0.274	0.521	0.247	قبرص
5.88	0.266	0.431	0.166	تايلاند
0.42	0.225	0.386	0.161	الفلبين
6.56	0.222	0.538	0.316	تايبوان
6.95	0.216	0.424	0.208	كوريا
1.13	0.191	0.299	0.108	المكسيك
3.60	0.185	0.380	0.194	تشيلي
0.95	0.180	0.447	0.267	كوستاريكا
0.17	0.179	0.761	0.582	سويسرا
-0.62	0.176	0.284	0.108	كاميرون
-2.87	0.176	0.395	0.219	ساحل العاج
1.54	0.147	0.297	0.150	أوروغواي
1.56	0.146	0.221	0.075	تركيا
1.98	0.140	0.445	0.305	تونس
1.24	0.138	0.422	0.284	الدومينكان
-3.29	0.131	0.181	0.050	راوندا
0.89	0.118	0.494	0.375	بابوا
0.19	0.094	0.181	0.087	مالي

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الفصل الثاني:

تحليل علاقة سعر الصرف

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$$\left(\frac{\quad}{\quad} \right) \times \quad = \quad$$

$$TCR = TCN \times \frac{IP_{loc}}{IP_{etr}} \dots\dots\dots(68)$$

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$$\left(\frac{\quad}{(P_T)} \right) : \quad \bullet$$

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³ PATRICK, TOPSCALIAN, principes des finance international – économica 1992.
⁴ Bernard guillochon, Annie kawewcki, économie international, edition dunod, paris 2000, p142.
⁵ PERYRARD JOSETTE – Gerson fiançailles internationale – 3^{ème} édition - vuibert- paris- 1995- p 70 .

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$$TCRE = \sum_K \frac{X_0^K (e^{Kr})_t / X_0^K (e^{Kr})_0}{(p_0^K / p_0^r) / (p_t^K / p_t^r)} \times 100 \dots \dots \dots (70)$$

$$TCRE = \sum_K Z_K \left\{ \frac{(e^{Kr})_t}{(e^{Kr})_0} \times \frac{(p_t^K / p_t^r)}{(p_0^K / p_0^r)} \right\} \times 100 \dots \dots \dots (71)$$

$$TCRE = \sum_K Z_K IREK_{Kr} \times 100 \dots \dots \dots (72)$$

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r () P : Z_p

P : p₀^K, p_t^K

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² REDRIGER DORNBUSH, Exchange rate and inflation the ill press, Cambridge . USA 1994. P 266.

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$$r = \frac{P_t}{P_t^*} = \frac{\sum \alpha_i P_{it}}{\sum \alpha_i P_{it}^*} = \pi \frac{P_t}{P_t^*} \dots\dots\dots(73)$$

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$$\log r = \log \pi + \log P_t - \log P_t^* \dots\dots\dots(74) \quad : \quad (73)$$

$$\Delta \log r = \Delta \log P_t - \Delta \log P_t^* \dots\dots(75) \quad :$$

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¹ yves simon, Marchè des changes et gestion du risque de change, edition dalloz, paris 1995, p p : 69 – 70.

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$$M = (1+i_D) = \frac{M}{C_C}(1+i_E)CT \dots (76)$$

(i_E)
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 CT
 C_C
 i_E
 i_D

$$\frac{CT}{C_C} = \frac{1+i_D}{1+i_E} \dots (77) \quad (01)$$

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$$\frac{CT}{C_C} - 1 = \frac{1+i_D}{1+i_E} - 1 \dots (78)$$

$$\frac{CT - C_C}{C_C} = \frac{i_D - i_E}{1+i_E} \dots (79)$$

$$\frac{CT - C_C}{C_C} = i_D - i_E \dots (80) \quad :$$

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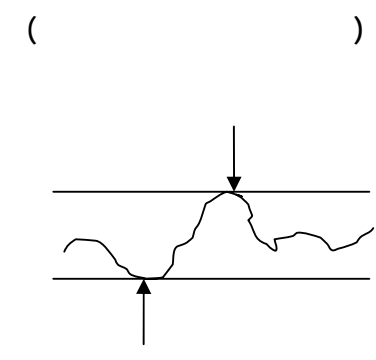
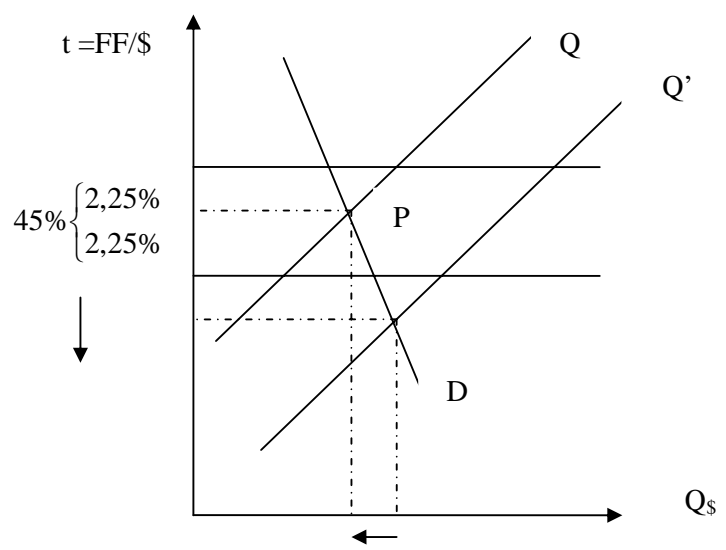
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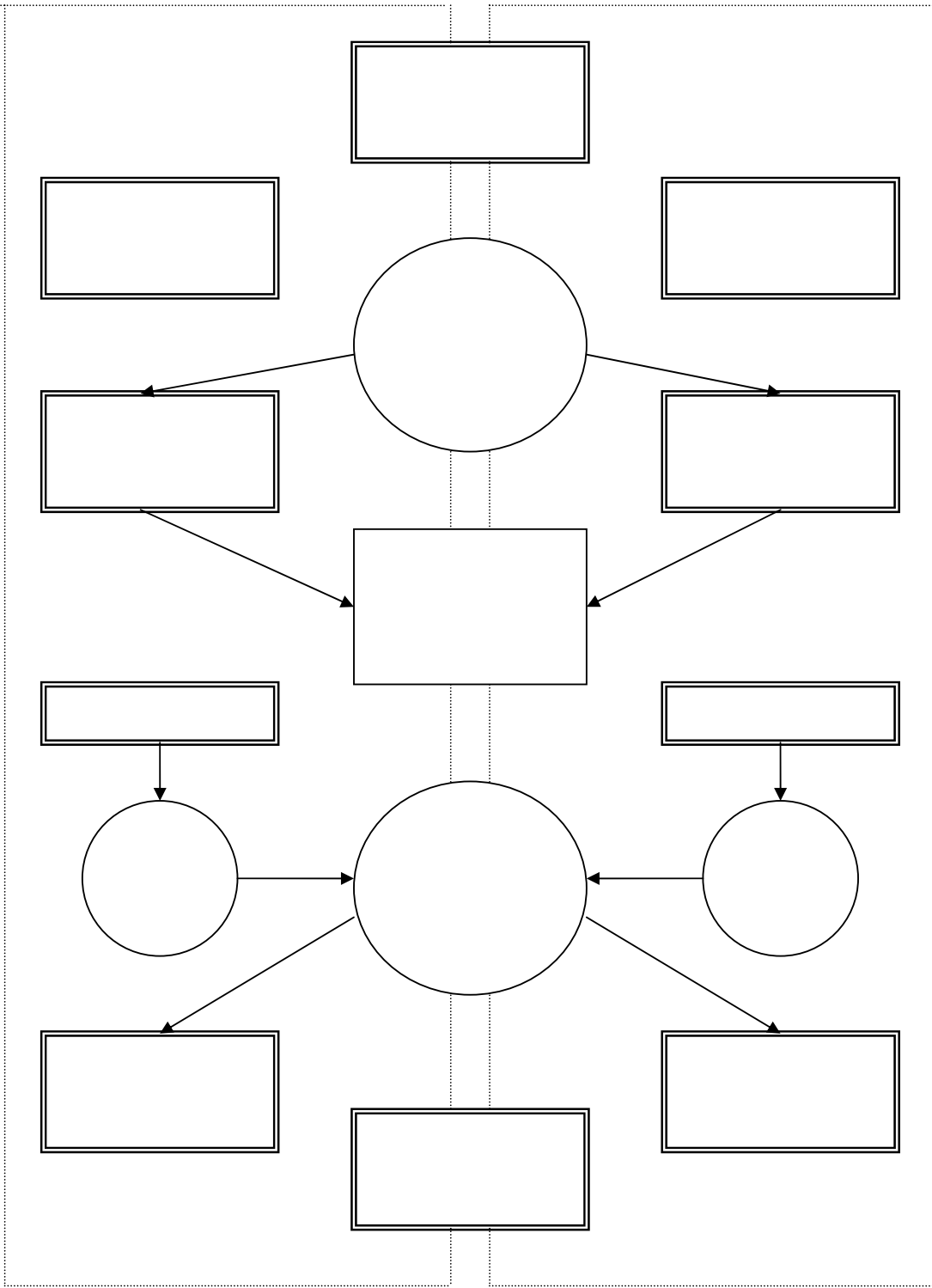
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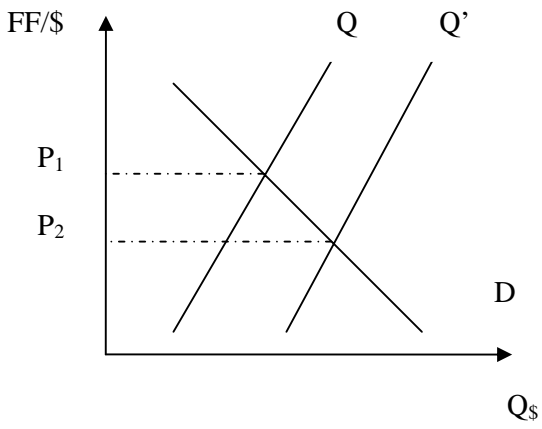
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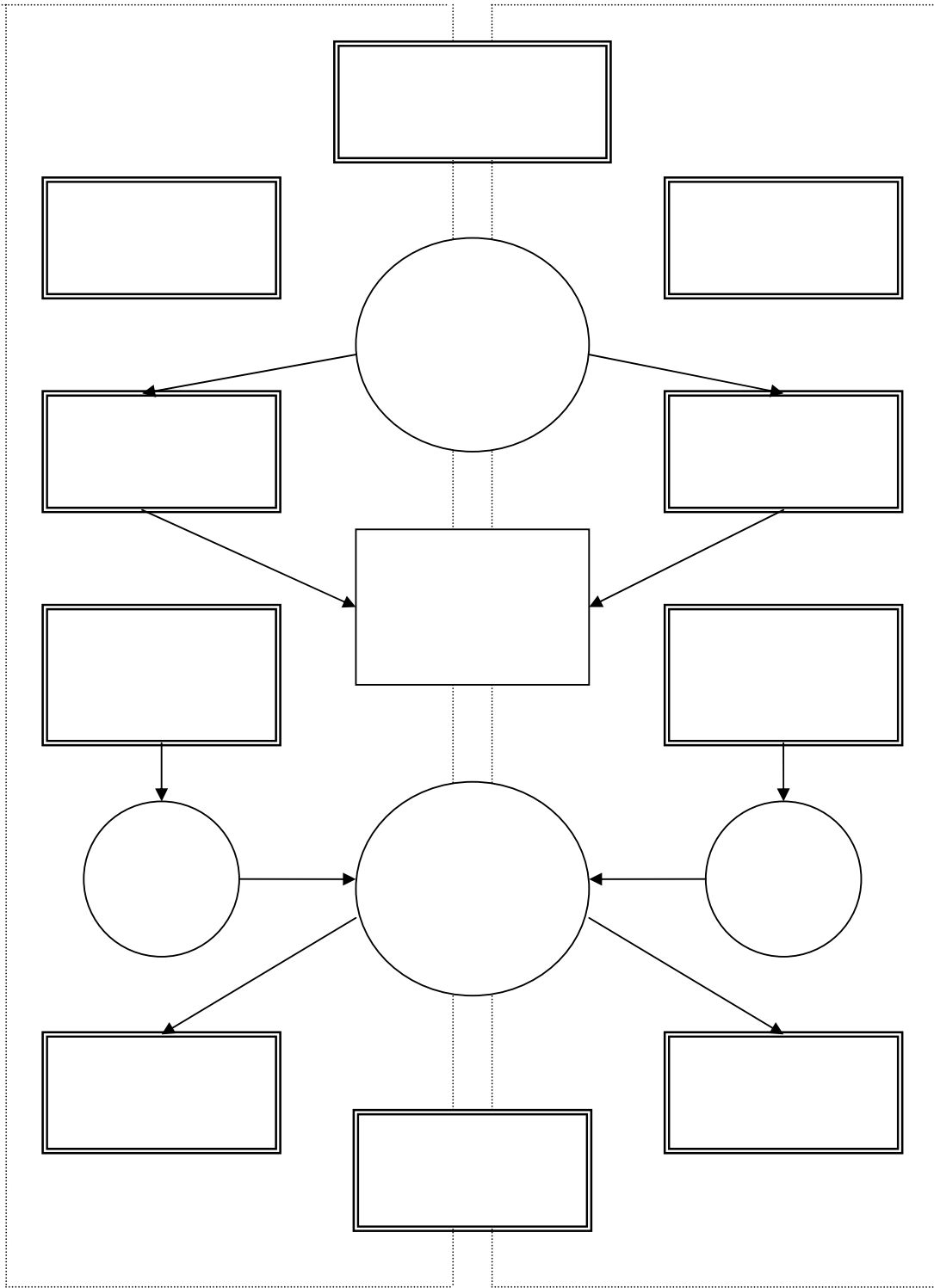


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¹Michel, Jura. technique financiere internationale, dunod, paris 1999, p 113.

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² Bessad Hocine , cours d' économie international , édition publisud , FRANCE, 1983 , p 117.

³ Berger Pierre, la monnaie et ses mécanismes , édition Bouchene , ALGER , 1993, P 73.

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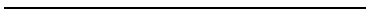
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¹ Antoine Bouet, Le Protectionnisme, analyse économique, Vuibert, Paris, 1998, p18.

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$$MV = PT$$

$$P = \frac{V}{T}M$$

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$P_0(Q_0, E_0)$

Q_1

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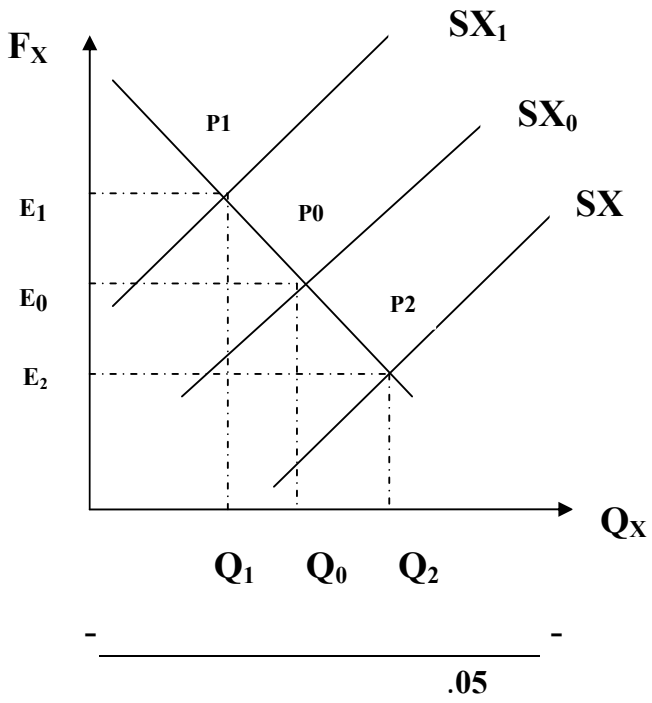
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$P_0(Q_0, E_0)$

P_1

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(Q_1, E_1)

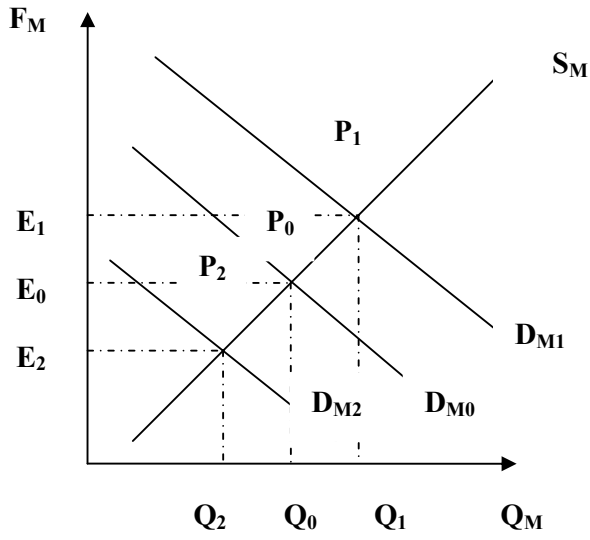
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$$B = EX\left(\frac{P_d}{P_f}, ER\right) - ER IM\left(\frac{P_d}{P_f}, ER\right) \dots \dots \dots (81)$$

: B :

: EX

: IM

: ER

: P_d

: P_f

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$$B = EX(ER) - ER IM(ER) \dots \dots \dots (82)$$

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$$\frac{dB}{dER} = \frac{dEX}{dER} - (ER \cdot \frac{dIM}{dER} + \frac{dER}{dER} IM) \dots \dots \dots (83)$$

$$\frac{dB}{dER} = \frac{dEX}{dER} \cdot \frac{ER}{ER} \cdot \frac{EX}{EX} - ER \cdot \frac{dIM}{dER} - \frac{dER}{dER} IM \dots \dots \dots (84)$$

$$\frac{dB}{dER} = IM \left(\underbrace{\frac{dEX}{dER} \cdot \frac{ER}{EX}}_{e_x} \cdot \frac{EX}{ER \cdot IM} - \underbrace{\frac{dIM}{dER} \cdot \frac{ER}{IM}}_{e_m} - 1 \right) \dots \dots \dots (85)$$

$$IM \cdot ER = EX$$

$$\frac{dB}{dER} = IM (e_x - e_m - 1) \dots \dots \dots (86)$$

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		-
		$e_x - e_m > 1$
		$e_x - e_m < 1$
		$e_x - e_m = 1$

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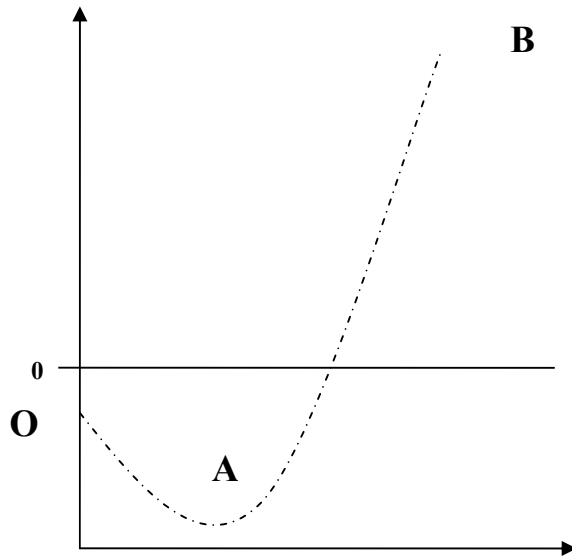
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$$\Delta Bf = V_{f_x} \cdot \frac{n_x(e_x - 1)}{n_x + e_x} + V_{f_m} \cdot \frac{e_m(n_m + 1)}{e_m + n_m} > 0 \dots \dots \dots (87)$$

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: V_{f_x}, V_{f_m}

: n_x, n_m

: e_x, e_m

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$$m = \frac{\delta M}{\delta y}$$

δy

δM

:

$$mc = \frac{1}{m} \dots \dots \dots (88)$$

mc

$$mc = \frac{1}{m + s}$$

S

(A)

(A)

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A

B

A

B

A

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A

B

1.

$$mC_A = \frac{1}{m_A + S_A + m_B \left(\frac{S_A}{S_B} \right)} : A$$

$$mC_B = \frac{1}{m_B + S_B + m_A \left(\frac{S_B}{S_A} \right)} : B$$

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$y = C + I + G + (X - M) \dots \dots \dots (89)$

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$B = X - M \dots \dots \dots (90)$

:

$A = C + I + G \dots \dots \dots (91)$

:

$y = A + B \dots \dots \dots (92)$

:

$B = y - A \dots \dots \dots (93)$

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$$\Delta B = \Delta y - \Delta A \dots \dots \dots (94)$$

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1.

ΔA

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$$\alpha \quad \alpha \Delta y$$

•

$$\Delta A = \alpha \Delta y + \Delta A \dots \dots \dots (95)$$

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$$\Delta B = \Delta y - (\alpha \Delta y + \Delta A) \dots \dots \dots (96)$$

$$\Delta B = (1 - \alpha) \Delta y - \Delta A \dots \dots \dots (97)$$

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$$: \Delta y_B^* :$$

$$: \Delta y_B$$

$$: \Delta y = \Delta y_B^* + \Delta y_B$$

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$$\Delta B = (1 - \alpha)\Delta y_B^* + (1 - \alpha)\Delta y_B - \Delta A \dots \dots \dots (98)$$

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$$1: (\quad) \quad -1$$

$$: \alpha \langle 1 \quad (1$$

$$: \alpha \langle 1 \quad (2$$

$$|\Delta y_B| \langle \Delta y_B^* :$$

$$\Delta y_B^* \quad (3$$

$$2: \quad -2$$

$$\Delta y_B^*$$

$$: \quad (1 - \alpha)\Delta y_B \quad \alpha\Delta y_B$$

$$: \alpha \langle 1 \quad (1$$

$$: \alpha \langle 1 \quad (2$$

$$: \quad -3$$

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$$\begin{cases} P = \alpha P_T + (1 - \alpha) P_N \dots\dots\dots(99) \\ P^* = \alpha^* P_T^* + (1 - \alpha^*) P_N^* \dots\dots\dots(100) \end{cases}$$

α^*, α :

β

$$\begin{cases} \beta = \frac{P_N}{P_T} \Rightarrow P_N = \beta \cdot P_T \dots\dots\dots(101) \\ \beta^* = \frac{P_N^*}{P_T^*} \Rightarrow P_N^* = \beta^* \cdot P_T^* \dots\dots\dots(102) \end{cases}$$

$$P = \alpha P_T + (1 - \alpha) \beta P_T = (\alpha + (1 - \alpha) \beta) P_T \dots\dots\dots(103)$$

$$P^* = \alpha^* P_T^* + (1 - \alpha^*) \beta^* P_T^* = (\alpha^* + (1 - \alpha^*) \beta^*) P_T^* \dots\dots\dots(104)$$

$$\varphi = (\alpha + (1 - \alpha) \beta) :$$

$$\varphi^* = (\alpha^* + (1 - \alpha^*) \beta^*)$$

: (104) (103)

$$\left\{ \begin{array}{l} P = \varphi P_T \dots \dots \dots (105) \\ P^* = \varphi^* P^*_T \dots \dots \dots (106) \end{array} \right.$$

$$R = \frac{P}{P^*} \cdot \frac{\varphi}{\varphi^*} \dots \dots \dots (107) \quad :$$

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$\cdot \varphi^* \varphi$

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العمل

في العمل اليدوي

في تحقيق التوازن الخارجي

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$$C = f(Y_d) = f(y - T) \dots (110)$$

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:Y_d :

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$$C = cY_d + C_0$$

:

$$APC = \frac{C_t}{Y_{dt}} = c + \frac{C_0}{Y_d}$$

$$MPC = \frac{C_2 - C_1}{Y_2 - Y_1} = \frac{\Delta C}{\Delta Y_d}$$

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$$C_t = C_0 + \beta Y_t + \gamma C_{t-1} \dots \dots (111)$$

() ∴ γ
∴ $MPC_1 = \beta = \frac{\Delta C_t}{\Delta Y_t}$

∴ $C_t \approx C_{t-1}$

$$C_t = C_0 + \beta Y_t + \gamma C_t \Rightarrow$$

$$(1 - \gamma)C_t = C_0 + \beta Y_t \Rightarrow$$

$$C = \frac{C_0}{1 - \gamma} + \frac{\beta}{1 - \gamma} Y_t$$

$$APC_2 = \frac{\Delta C_t}{\Delta Y_t} = \frac{\beta}{1 - \gamma} \dots \dots (112)$$

∴ () ∴ -3

K

Y_p " "

$$C = K Y_p$$

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2002 -1970 :

.46 2005 -2004

.173 2005

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$$C = K Y_p \dots \dots \dots (113)$$

$$Y_C = Y_p + Y_t \dots \dots \dots (114)$$

$$C_C = C_p + C_t \dots \dots \dots (115)$$

$$\begin{array}{cccc}
 & :Y_t & :Y_p & :Y_C : \\
 & :C_t & :C_p & :C_C \\
 & & Y_C & \\
 C_C & Y_t & Y_p & : \\
 & .C_t & C_p & \\
 & & : (& -) & -4
 \end{array}$$

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$$C_t = aW_R + cY_L \dots \dots \dots (116)$$

2:

$$\begin{array}{cccc}
 & :Y_L & :W_R & : \\
 & & WL & NL \\
 (NL - WL) & & & : \bullet \\
 & Y_L.WL & : & \bullet \\
 & C.NL & : & \bullet
 \end{array}$$

:

$$C.NL = Y_L.WL \Rightarrow C = \frac{WL}{NL} . Y_L \dots \dots \dots (117)$$

T W_R

$$: (NL - T)$$

.164

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$$C.(NL - T) = Y_L(WL - T) + WR \Rightarrow C = \frac{1}{NL - T}WR + \frac{WL - T}{NL - T}Y_L \dots (118)$$

:

$$: a = \frac{1}{NL - T} :$$

$$: c = \frac{WL - T}{NL - T} :$$

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$$I = f(y, i) : \frac{\Delta I}{\Delta y} > 0, \frac{\Delta I}{\Delta i} < 0 \dots (119)$$

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"CLARK"

$$K_t^* = \alpha Q_t \dots (120)$$

2;

t : K_t^* :

t : Q_t

Q K : \alpha

$$K_{t+1}^* = \alpha Q_{t+1} \dots (121)$$

: t+1

$$\Delta K = I_m = \alpha(\Delta Q_t) \dots (122) \quad : \quad (120) \quad (121)$$

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:I_m :

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K

"KOYCK"

$$K_t = \beta_0 Q_t + \beta_1 Q_{t-1} + \beta_2 Q_{t-2} + \beta_3 Q_{t-3} + \dots(123)$$

1:

$$\beta_i = \beta_0 \lambda^i \begin{cases} i=1,2,3,\dots \\ 0 < \lambda < 1 \end{cases} : (: \lambda)$$

:

$$K_t = \beta_0 Q_t + \beta_0 \lambda^1 Q_{t-1} + \beta_0 \lambda^2 Q_{t-2} + \beta_0 \lambda^3 Q_{t-3} + \dots(124)$$

: λ (124)

$$\lambda K_{t-1} = \beta_0 \lambda Q_{t-1} + \beta_0 \lambda^2 Q_{t-2} + \beta_0 \lambda^3 Q_{t-3} + \beta_0 \lambda^4 Q_{t-4} + \dots(125)$$

$$K_t = \beta_0 Q_t + \lambda K_{t-1} \dots(126) : (124) (125)$$

$$I_m = K_t - K_{t-1} \dots(127) :$$

$$I_m = \beta_0 Q_t + \lambda K_{t-1} - K_{t-1} = \beta_0 Q_t - (1-\lambda)K_{t-1} \dots(128) : (127) (126)$$

$$I_t = \beta_0 Q_t - (1-\lambda-\delta)K_{t-1} \dots(129) : (\delta)$$

. (1-λ-δ)

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2:

$$Y = f(L, K, \dots) \dots(130)$$

$$\frac{\Delta Y}{\Delta L} > 0 : L : \\ \frac{\Delta Y}{\Delta K} > 0 : K :$$

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 $L_t = uQ_t \quad :$ Q
 $K_t = vQ_t \quad :$ Q
 $Q_t = \frac{K_t}{v} = \frac{L_t}{u} \quad :$
 $K_t = vQ_t$

Q_t $L_t = uQ_t$
 :
 $Q_t = \text{Min}(\frac{K_t}{v}, \frac{L_t}{u}) \dots \dots \dots (131)$
 : " - " -2
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$Q_t = AL^\alpha K^\beta \dots \dots \dots (132)$:
 : L_t : Q_t :
 : α : K_t
 : A : β
 : (λ) $(\alpha + \beta)$

:

$$Q_t^* = A(\lambda L_t)^\alpha (\lambda K_t)^\beta \Rightarrow$$

$$Q_t^* = \lambda^{\alpha+\beta} (A L_t^\alpha K_t^\beta) \Rightarrow$$

$$Q_t^* = \lambda^{\alpha+\beta} Q_t$$

:

$$: 1 = \alpha + \beta \bullet$$

$$: 1 < \alpha + \beta \bullet$$

$$: 1 > \alpha + \beta \bullet$$

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1961 "ARROW, CHENERY, MINHAS, SOLOW"

$$Q_t = A(\delta K_t^{-\rho} + (1-\delta)L_t^{-\rho})^{-\frac{v}{\rho}} \dots \dots \dots (133)$$

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: A :

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$$\sigma = \frac{1}{1+\rho} :$$

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$Q_t = A(\delta K + (1 - \delta)L)$			-1	
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1971 "REVENKAR" " - "

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$$Q_t = AK_t^{\sigma(1-\beta\theta)}(L_t + (\theta - 1)K_t)^{\sigma\beta\theta} \dots\dots\dots (134)$$

 $(\theta=1)$

$$Q_t = AK_t^{\sigma(1-\beta)}L_t^{\sigma\beta} \dots\dots\dots(135)$$

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" - " $(\sigma=1)$

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$$BS_t = G_t - R_t \dots (136)$$

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R_t

+

G_t

BS_t

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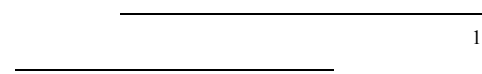
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$$Py = \frac{P_1 Q_1}{P_0 Q_1} \cdot 100$$

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: P₁, P₀ :

: Q₁, Q₀

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$$PC = \frac{P_1 Q_0}{P_0 Q_0} \cdot 100$$

$$IF = \frac{Py_t - Py_{t-1}}{Py_{t-1}} \dots\dots\dots(137)$$

:(: IF)

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$$Q_t = f(K_t, L_t, \dots) \dots \dots \dots (138)$$

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:

$$\pi_t = P_{Q_t} Q_t - (P_{K_t} K_t + P_{L_t} L_t) \dots \dots \dots (139)$$

: P_{Q_t}

: π_t

:

: P_{K_t}

: P_{L_t}

$$\pi_t = P_{Q_t} (f(K_t, L_t, \dots)) - (P_{K_t} K_t + P_{L_t} L_t) \quad :$$

:

$$\frac{d\pi_t}{dL_t} = p_{Q_t} \frac{df(L_t)}{dL_t} - P_{L_t} \frac{L_t}{dL_t} = 0$$

$$\frac{d\pi_t}{dL_t} = p_{Q_t} (MPL) - P_{L_t} = 0$$

(W)

$$p_{Q_t} (MPL) - W = 0 \Rightarrow$$

$$p_{Q_t} (MPL) = W \Rightarrow$$

:

$$MPL = \frac{W}{P_{Q_t}} = w$$

: w

: MPL

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$$L_{dt} = f\left(\frac{W_t}{P_t}\right) \dots \dots \dots (140)$$

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² Gazier, Bernard, Economie du Travail et de l'emploi, Edition Dalloz, PARIS, 1991, P : 44.



$$U_t = \frac{L_{St} - L_t}{L_{St}} \dots \dots \dots (141)$$

L_t L_{St} U_t

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$$M = f(y) \quad \frac{\Delta M}{\Delta y} > 0 \dots \dots \dots (142)$$

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P^*

P_1

Q_3

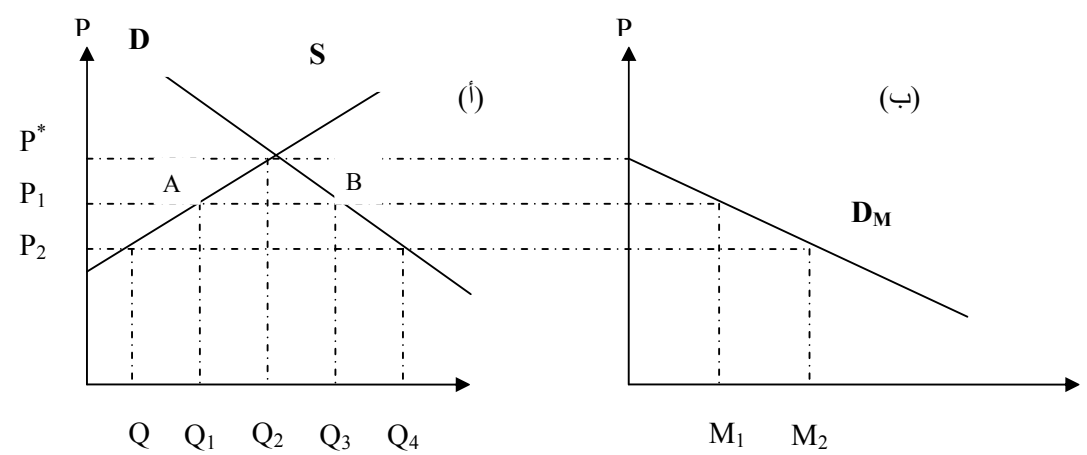
Q_1

(M_1, P_1)

$$M_1 = Q_3 - Q_1$$

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:(1 -3)



Source: Jaïne de Meio; commerce international, Théories et applications, Balises, Paris, 1997, p 37.

$$\begin{array}{l}
 P_2 \\
 Q \\
 M_2 = Q_4 - Q \\
 .() \\
 (M_2, P_2) \\
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 \end{array}$$



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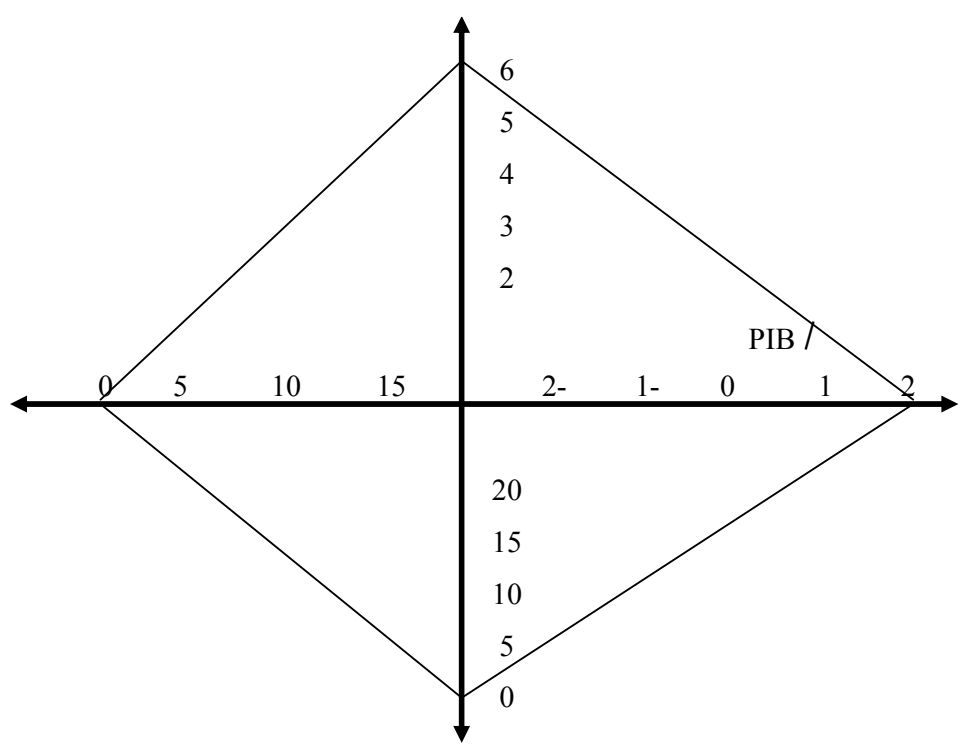
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Efficacité des politiques économiques et croissance : le cas de l'Algérie,

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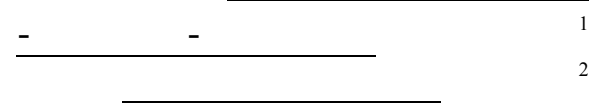
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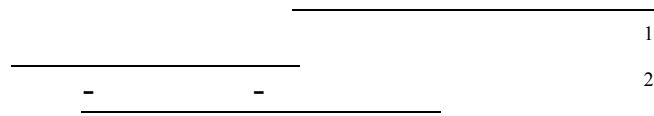
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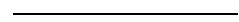
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."Tinbergen" "Meade"

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"Meade"

"Tinbergen"

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y = Aw + Bx.....(108)

: y :

: x

: w

: A

a_{ij}

: B

b_{ij}

: (i = j = 3)

(y1 y2 y3) = [(a11 a12 a13) (a21 a22 a23) (a31 a32 a33)] * (w1 w2 w3) + [(b11 b12 b13) (b21 b22 b23) (b31 b32 b33)] * (x1 x2 x3)

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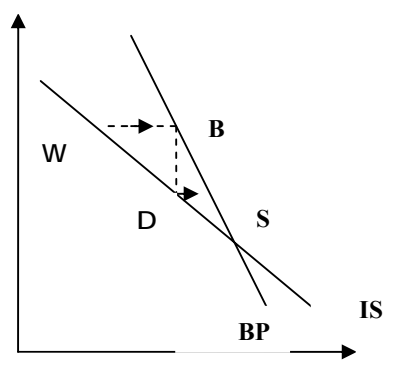
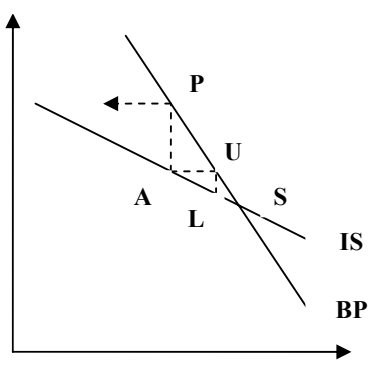
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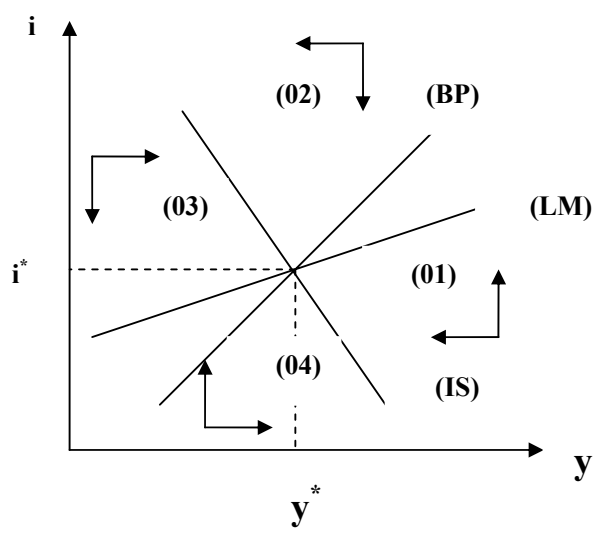
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$$S+M > I+X \quad (01)$$

(BP)

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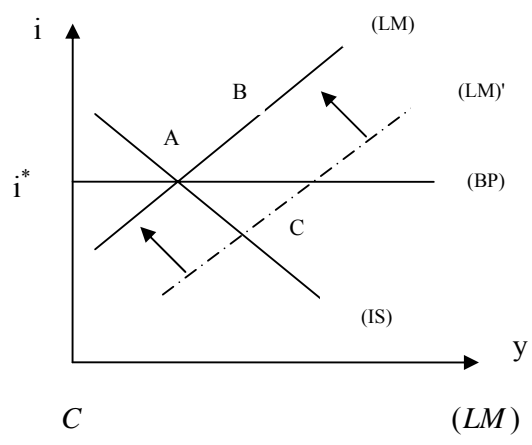
Δy	Δi	
-	+	(01)
-	-	(02)
+	-	(03)
+	+	(04)

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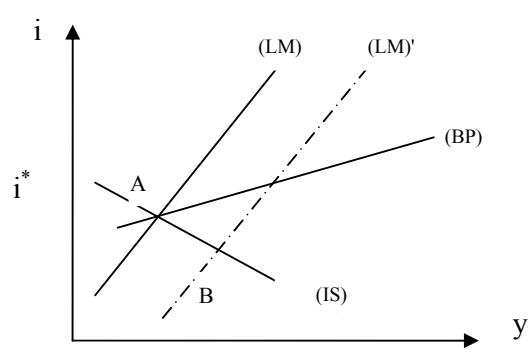
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:(5 -3)



A (LM)'

:(6 -3)



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B A

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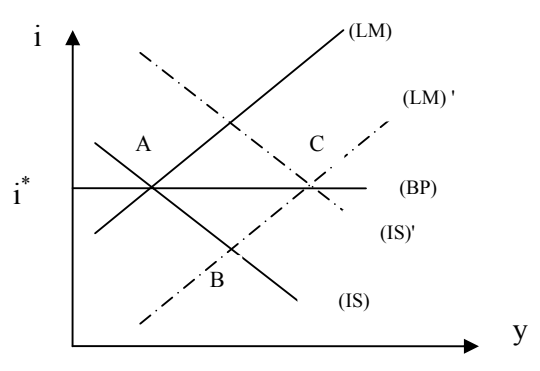
(LM)'

B

C

(IS)' (IS)

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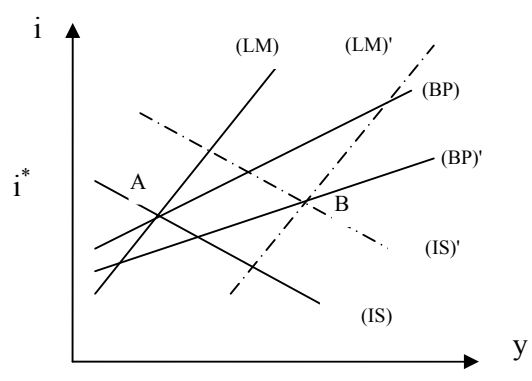
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:(LM)' (LM)

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$(IS)'$ (IS)

$(BP)'$ (BP)

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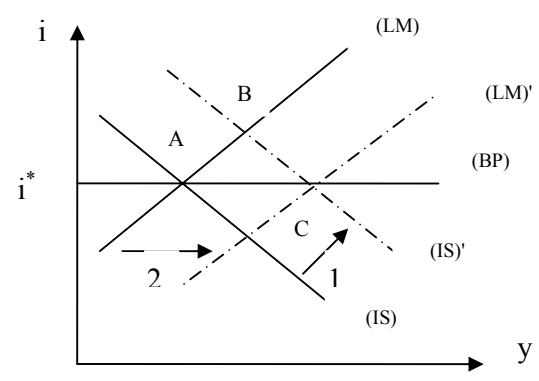
B A

(IS)

(LM)

C (IS', LM', BP)

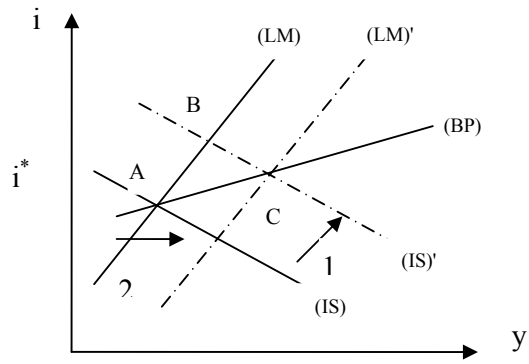
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A

(IS)

B

(LM)

C

(IS', LM', BP)

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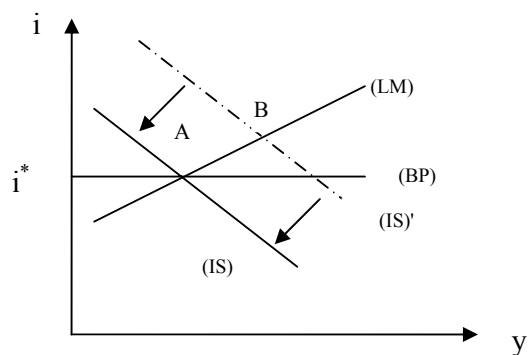
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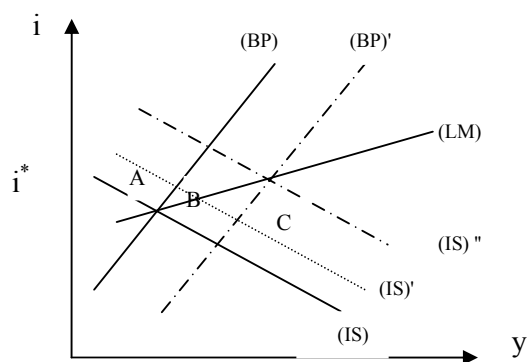
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(BP)

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(IS'', LM, BP')

:(12-3)



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_____ .2009 -2008 :

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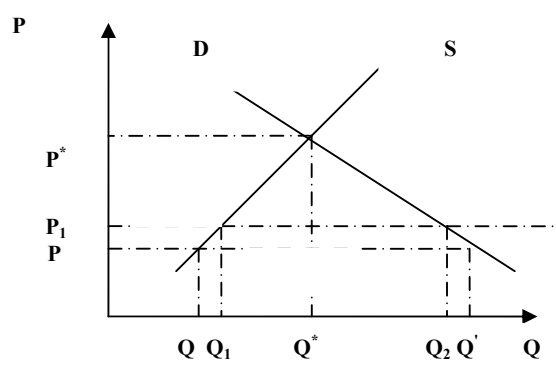
:

$(Q' - Q)$

$(Q_2 - Q_1)$:

P_1

:(13 -3)



.149

- -

:

1;

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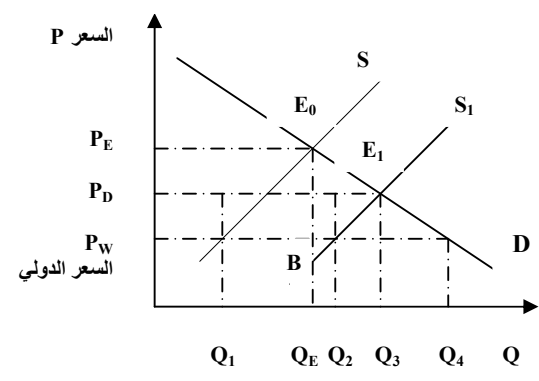
:

:

$$E_0(Q_E, P_E)$$

$Q_4 - Q_1$: Q_4 P_W
 $Q_4 - Q_2$
 P_W $E_1(Q_3, P_D)$ S_1 S
 P_D

:(14 -3)



2001 - 1970

119. 2005 - 2004

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" (PIB)

.3

الفصل الرابع

التوجهات العامة للسياسات الاقتصادية الكلية

في الجزائر

خلال الفترة 1990-2008.

.2008-1990

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2001

2009

.2008 -1990 :

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.2008 -1990 :

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1989

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30

155.7

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315.2

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¹. 17.8

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75

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1991

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1991

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.1992

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3

4.

- -2000 - 1990

1

17 -16 :

:

²Ahmed Ben Bitour, **L'Algérie au troisième millénaire défis et potentialités**, Alger, Edition marinoor, 1998, p- p : 77-78.

. 31 - 22: 1998

3

4

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7000

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1:

%40

•

22

50

%85

1991

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1991

16.9 (1

1992

42.50 (2

.1993

83.5 (3

1991

% 12 : M3

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1993

05

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.1998 -1994 :

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"

"

1.

.(1995 21 -1994 22)

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2.:

()

% 6 %3

%14

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-
-
-
-
-

3.:

%85

%30 %20

3

-

.191

1

.120

2

³ Ahmed Ben Bitour L'Algérie au troisième millénaire défis et potentialités OP.CIT, p.95.

%29.05 •

%5.7 1994 •

35.1 23.4 •

%50.2 •

%20 •

1994 1.5 •

. 2.6

.(1998 21 -1995 22) :

. 1995 22

3.9 1.169 :

.1997 4.7 1996 6.3

1.:

%5

•

			1996	01		•
						•
1998 -1997	(PIB)	%2.2	1995 -1994	(PIB)	%6.9	•
		()				•
			.1998		%20	
			:			
				:		-1
	1997 -1996					
			1:			•
						•
2:	()					•
				:		(1
%1.5 :						
	1998 -1997		1995 -1994 :			
	%1.8 :			:		(2

¹ Ammar Belhimer, La dette extérieur de l'Algérie, Alger, Marinoor, 1998, p – p: 112 -114.

² Ahmed Ben Bitour, L'Algérie au troisième millénaire défis et potentialités OP.CIT, p 112.

% 1.4 :

1994

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-2

¹M2

²

%25

³.%16.5

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1994

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1996

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1996

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1996

%1 :

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%1.5 :

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2009

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2001

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2004 -1990 :

2

.71 2007 -2006

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%5

.¹ 2004 -2001 :

850.000

2:

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525

2004 2001

(1-4)

(%)	.(2004 - 2001)					:(1-4)
	2004 - 2001	2004	2003	2002	2001	
8,6	45,0			15,0	30,3	
12,4	65,4 : : 55,9	12,0	22,5	20,3	10,6	
21,7	114,0	3,0	35,7	42,9	32,4	
40,1	210,4	2,0	37,6	77,8	93,0	
17,2	90,2	3,5	17,4	29,9	39,4	
100	525,0	20,5	113,2	185,9	205,4	

2001

:

.2008-1990

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.2008 -1990 :

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2008 -2001 2000 -1995 1994 -1990

.2008 -1990

.1994 -1990

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-1

.1994 -1990 :

:(2 -4)

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1994	1993	1992	1991	1990	
1,84 -	0,8	1,29	2,39	1,35	

:

1993 -1990 :

. 1.84 1994

2.39

(6 -4)

1:

-
-
-
-

.1994 -1990:

:(3 -4)

1994	1993	1992	1991	1990	
8340	10091	10838	12100	11304	
9365	8789	8406	7680	9684	
1025 -	1302 +	2432 +	4420 +	1620 +	
89	114,8	128,9	157,5	116,7	² (%)

(CNIS)

- :

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1993 -1990

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1994

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1994

1993 -1990

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1

$$.100 * (\frac{\quad}{\quad} / \quad) = \quad .56 \quad 1997 \quad 2$$

.%89

1994

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-1990 :

1990

1.57

1994

1993

0.8

1992

2.5 1994

.1994 -1990 :

:(4 -4)

1994	1993	1992	1991	1990	
2,5 -	0,8 -	1,1 -	1,89 -	1,57 -	

:

: -4

1990

.1994 -1990 :

:(5 -4)

1994	1993	1992	1991	1990	
28.850	25.024	25.886	26.636	26.588	
0.636	0.700	0.792	1.239	1.791	
29.456	25.724	26.678	27.875	28.379	

MEDIABANK - N° 35, AVRIL/MAI 1998, P 6 :

29.456 :

28.379

1994

1993 1992

1991 1990

.1994

: -5

0.72

1994

2.67 1990

1991

1994

.1994 -1990 :

:(6 -4)

1994	1993	1992	1991	1990	
2.67	1.47	1.45	1.45	0.72	
15.33	16.33	18.44	18.62	22.6	

: -6

1986

-1990

.1994

.1994 -1990 :

:(7 -4)

1994	1993	1992	1991	1990	
42.49	24.12	22.8	21.4	12.2	

1991

1994 -1991

¹ 22 %100

24

%4

1993 1991 %50
 1994
 %40.17 1994
 .1994 14

.2000 -1995 :

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:
 : -1
 .2000 -1995 : :(8 -4)

2000	1999	1998	1997	1996	1995	
8,93	0,02	0,90 -	3,45	1,26	2,24 -	

2.24
 1998 1997 1996
 2000 8.93 1999

: -2

2000 -1995 :

9213 1998
 12.28 1998
 22031

.2000 -1995 :

:(9 -4)

2000	1999	1998	1997	1996	1995	
22031	15522	9213	13889	13375	10240	
9173	9164	8403	8687	9098	10761	
12858	3358	810	5202	4277	521 -	
240,1	169,3	109,6	159,8	147	95,1	

(CNIS)

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10761 : 1995

1994

521 :

1995

¹ 1994

810 : 1998

2000

12.28

1998

%95,1

1995

:

-3

.2000 -1995 :

:(10 -4)

2000	1999	1998	1997	1996	1995	
1,36 -	2,40 -	0,63 -	2,29 -	3,34 -	4,09 -	

.2008-1990

:

17.48 12.28

1999 1998

: -6

.2000 -1995 :

:(13 -4)

2000	1999	1998	1997	1996	1995	
77.19	69.31	60.35	58.41	56.18	55.17	

%40,17 1994

77,19 1995

55,17

.2008 -2001 :

:

" " " "

:

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.2008 -2001

:(14 -4)

2008	2007	2006	2005	2004	2003	2002	2001	
35,18	30,59	28,95	21,18	11,12	8,84	4,36	7,06	

4.36

2001

7.06

2001 -2000

2003

2002

35.18

2008

8.84

.2008-1990

:

: -2

2002 2001 0.28 :

78.63 2003 24.46

2008 2008

99.86

.2008 -2001

:(15 -4)

2008	2007	2006	2005	2004	2003	2002	2001	
78.63	60.59	54.74	46.33	32.22	24.46	18.71	19.09	
37.39	26.35	20.68	19.86	17.95	13.32	12.01	9.48	
41.24	34.23	34.06	26.47	14.27	11.14	6.70	9.61	
210,3	229,9	264,7	233,28	179,5	183,6	155,7	201,3	

- :

-

37.39 2001 9.48

2008

2001 9.61

6.70

41.24 2008

.2008-1990

:

: -3

2001

2006 11,22 2007

1,85 2008

.2008 -2001 : (16 -4)

. :

2008	2007	2006	2005	2004	2003	2002	2001	
1,85	1,08 -	11,22 -	4,24 -	1,87 -	1,37 -	0,71 -	0,87 -	

. :

: -4

.2008 -2001 : (17 -4)

. :

2008	2007	2006	2005	2004	2003	2002	2001	
4.282	4.899	5.062	16.484	21.411	23.203	22.540	22.441	. .
1.303	0.717	0.541	0.707	0.410	0.150	0.102	0.260	
5.585	6.606	5.603	17.191	21.821	23.353	22.642	22.701	

. :

2006

: -5

143,10 2008

.

.2008-1990

:

.2008 -2001

:(18 -4)

2008	2007	2006	2005	2004	2003	2002	2001	
143.10	110.18	77.78	56.18	43.11	32.92	23.11	17.96	
99.86	74.77	65.85	54.64	38.66	29.03	25.24	24.85	

: -6

.2008 -2001 :

:(19 -4)

2008	2007	2006	2005	2004	2003	2002	2001	
64,56	69,36	72,65	73,37	72,07	77,37	79,69	77,26	

2002 2001

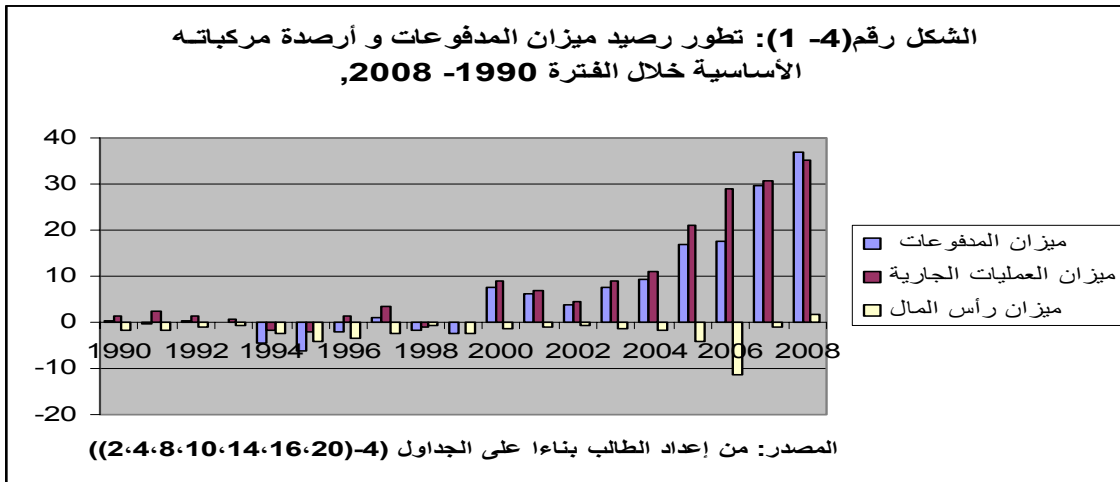
.2008 -1990

:

.2008 -1990

:(20 -4)

1997	1996	1995	1994	1993	1992	1991	1990	
1,16	2,09 -	6,32 -	4,34 -	0,01 -	0,23	0,5 -	0,22	
2005	2004	2003	2002	2001	2000	1999	1998	
16,94	9,25	7,47	3,66	6,19	7,57	2,38 -	1,74 -	
					2008	2007	2006	
					37,04	29,53	17,73	



1999 1990

2008 2000

1999 1990

2008 2000

2008

.2008-1990

:

.2008 -1990

2008 1990

.1994 -1990

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: -1

.¹ %2,9 1988 %1.4 1987
: 1994 -1990

.1994 -1990 :(21 -4)

.% :

1994	1993	1992	1991	1990	
1,27 -	2,2 -	1,6	1,20 -	1,30 -	

:

1992 1994
1993

%1,6:

%2,2

:

1

.2008-1990

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(

:

-2

.1994 -1990

:(22 -4)

.(%) :

1994	1993	1990	
100	100	100	
14,60	15.70	13.30	
29,50	29.70	28.70	
12,20	12.50	13.30	
13,20	12.80	14.20	
30,50	29.30	30.50	

2004 -1992

:

.92 2006 -2005

1993 1990

.2000 -1995

:

:

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-1

1997

1995 %3,80 :

%5 :

%1,30

.2000 -1995

:(23 -4)

.% :

2000	1999	1998	1997	1996	1995
2,2	3,40	5,10	1,30	3,80	3,80

- :

1999

¹ %24

2000

-2

.1994 -1990

:(24 -4)

.(%) :

2002	1999	1998
100	100	100
16,80	17,50	17,60
30,40	31,20	30,50
9,20	9,50	9,70
13,10	12,30	12,60
30,50	29,50	29,60

.92

2004-1992

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%45

656.000

(2000)

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2004 -1992

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.2008 -2001

:(25 -4)

.% :

2008	2007	2006	05	2004	2003	2002	2001	
4,1	3,0	2,0	5,1	5,2	6,9	4,7	2,1	

:

:

-2

.2008 - 2001

:(26-4)

302,9	472,2	921,9	358,9	315,2	412,1	1443,9	2001
377,5	499,4	1004,2	409,9	337,6	417,2	177	2002
403,1	552,3	1112,2	445,2	355,4	515,3	1868,9	2003
446,2	603,2	1302,2	508	390,5	580,5	2319,8	2004
494	631,9	1518,7	564,4	420,1	581,6	3352,9	2005
492,1	677,9	1708,4	674,3	444,4	641,3	3882,2	2006
530,8	782,4	1910,7	825,1	463,7	704,2	4089,4	2007
596,5	1034,3	2189,3	967,8	482,5	720,5	5017,3	2008

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(2004 - 2001)

%13

%6

(100.000)

.¹%5

1.2

%12

2003 - 1900

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2008

2001

.2008-1990

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.2008 -1990

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.2008 -1990

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.2008 -1990

:(27 -4)

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1995	1994	1993	1992	1991	1990	
586500	474100	335600	322700	250800	144400	
734876	613700	503950	396800	240800	149412	
148376 -	139600 -	168350 -	74100 -	10000	5012 -	
2001	2000	1999	1998	1997	1996	
1403440	1190750	937100	882000	881500	749200	
1452360	1176095	1098577	1022697	946217	848600	
48920 -	14655	161477 -	140697 -	64717 -	99400 -	
2007	2006	2005	2004	2003	2002	
1900300	1835500	1719800	1599300	1451450	1500250	
3143400	2543400	2105100	1860000	1711110	1602344	
1243100 -	707900 -	385200 -	260700 -	259660 -	102094 -	
					2008	
					2763000	
					4882200	
					2119200 -	

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(30 -4)

2008 -1990

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:2000 1990

1991

1999 1993

2000

.1992

:2008 2001

2009

(27 -4)

2008

2008. -1990

:(29 -4)

¹ (%)	(%) M ₂	M ₂	
61,87		343,00	1990
48,28	21,34	416,20	1991
48,00	23,95	515,90	1992
52,55	21,60	625,20	1993
48,65	15,30	723,70	1994
39,94	10,50	799,57	1995
35,68	15,00	915,00	1996
39,00	18,20	1081,30	1997
45,83	47,27	1592,50	1998
45,67	13,60	1789,40	1999
49,30	13,00	2022,40	2000
58,40	22,30	2473,50	2001
63,90	17,30	2901,50	2002
63,70	15,62	3354,90	2003
61,20	11,40	3738,00	2004
55,20	8,89	4070,4	2005
56,65	18,60	4827,6	2006
64,61	24,17	5994,6	2007
63,18	16,03	6956,00	2008

:

$$.100^* \frac{M_2}{PIB} =$$

)
(29-4)

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1:

2001

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2008

1996 -1990

343 1990

6956

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-2

.2008 -1990

:(30 -4)

.(%) :

1998	1997	1996	1995	1994	1993	1992	1991	1990	
5	5,6	18,7	29,8	29	20,5	31,7	25,9	17,9	
2007	2006	2005	2004	2003	2002	2001	2000	1999	
3,51	2,53	1,64	3,56	2,58	1,42	4,23	0,34	2,6	
								2008	
								4,46	

2000 1990

- :

.2008 2001

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1996 -1990

%29,8

1995

2000 %0,34

%4,23

.2008 -1990

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1990

¹()

.2008-1990

:(31 -4)

.(%) :

1998	1997	1996	1995	1994	1993	1992	1991	1990	
28,02	26,41	27,98	28,1	24,4	23,15	23,8	21,1	19,7	
2007	2006	2005	2004	2003	2002	2001	2000	1999	
11,8	12,3	15,3	17,7	23,7	25,1	27,3	29,77	28,89	
								2008	
								11,3	

%28,89 1999

%2,6

%15,3 2002

2005

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2008 -1990

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الفصل الخامس:

استخدام نماذج شعاع الإنحدار الذاتي

تفصيل نتائج

السياسات الاقتصادية في الجزائر

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(VAR)

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.(VAR)

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.VAR(P)

(VAR)

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		:()	○
" "		:	○
		:	○
		.	
		(VAR)	:
		. ² (VAR)	:
	(Y = (Y ₁ , Y ₂ , ..., Y _n))	"n"	
		:	"Y"
	$Y_t = \Phi_0 + \sum_{i=1}^n \Phi_i Y_{t-i} + \varepsilon_t$		
	$(Y_t = (Y_{1t}, Y_{2t}, \dots, Y_{kt})')$:
	:(L)		
	$(Z_n - \Phi_1 L - \Phi_2 L^2 - \dots - \Phi_n L^n) Y_t = \Phi_0 + \varepsilon_t$		
	$\Phi(L) Y_t = \Phi_0 + \varepsilon_t$:
	$\Phi(L) = I_n - \sum_{i=1}^n \Phi_i L^i + \varepsilon_t$:
K	VAR(P)	"P"	
		:	
	$Y_t = A_0 + A_1 Y_{t-1} + \dots + A_p Y_{t-p} + \mu_t$:
		:	(K × 1)
	(K × K)		:(Y _t)
			(A _i)

² Bourbonnais Régis, Econométrie, 6^{ème} édition, Paris, 2006, P255-257.

$$\begin{array}{l}
 : \\
 \hline \hline
 Y_t = \begin{bmatrix} Y_{1t} \\ Y_{2t} \\ \vdots \\ Y_{kt} \end{bmatrix}; \quad A_i = \begin{bmatrix} a_{1i}^1 & a_{1i}^2 & \cdots & a_{1i}^k \\ a_{2i}^1 & a_{2i}^2 & \cdots & a_{2i}^k \\ \vdots & \vdots & \ddots & \vdots \\ a_{ki}^1 & a_{ki}^2 & \cdots & a_{ki}^k \end{bmatrix}; \quad A_0 = \begin{bmatrix} a_1^0 \\ a_2^0 \\ \vdots \\ a_k^0 \end{bmatrix}; \quad \mu_t = \begin{bmatrix} \mu_{1t} \\ \mu_{2t} \\ \vdots \\ \mu_{kt} \end{bmatrix} \\
 \hspace{20em} (K \times 1) \hspace{10em} : (A_0) \\
 \hspace{15em} .(K \times 1) \hspace{10em} : (\mu_t) \\
 : \hspace{15em} (L)
 \end{array}$$

$$\begin{aligned}
 Y_t &= A_0 + (A_1 L + A_2 L^2 + \cdots + A_p L^p) Y_t + \mu_t \\
 (I_k - A_1 L - A_2 L^2 - \cdots - A_p L^p) Y_t &= A_0 + \mu_t \\
 \Phi(L) Y_t &= A_0 + \mu_t
 \end{aligned}$$

$$\Phi(L) = I_k - \sum_{i=1}^p A_i L^i :$$

$$\begin{array}{l}
 : \\
 \cdot \\
 : \hspace{15em} \text{VAR(P)} \\
 \hspace{18em} t
 \end{array}$$

- i / $\forall t \in Z: E(Y_t) = \mu$
- ii / $\forall t \in Z: E(Y_t^2) < \infty$
- iii / $\forall (t, h) \in Z^2 : \text{cov}(Y_t, Y_{t+h}) = E[(Y_t - \mu)(Y_{t+h} - \mu)] = \Gamma_k \quad \forall t$

$$\begin{array}{l}
 : \hspace{15em} \text{VAR(P)} \\
 \det(I - A_1 Z - A_2 Z^2 - \cdots - A_p Z^p) = 0 \\
 (|Z| < 1: Z)
 \end{array}$$

$$Y_t = \hat{A}_0 + \hat{A}_1 Y_{t-1} + \cdots + \hat{A}_p Y_{t-p} + \mu_t \hspace{10em} : \hspace{5em} \text{VAR(P)}$$

$$\begin{array}{l}
 : \\
 Y_t = \begin{bmatrix} Y_{1t} \\ Y_{2t} \\ \vdots \\ Y_{kt} \end{bmatrix}; \quad A_i = \begin{bmatrix} a_{1i}^1 & a_{1i}^2 & \cdots & a_{1i}^k \\ a_{2i}^1 & a_{2i}^2 & \cdots & a_{2i}^k \\ \vdots & \vdots & \ddots & \vdots \\ a_{ki}^1 & a_{ki}^2 & \cdots & a_{ki}^k \end{bmatrix}; \quad A_0 = \begin{bmatrix} a_1^0 \\ a_2^0 \\ \vdots \\ a_k^0 \end{bmatrix}; \quad \mu_t = \begin{bmatrix} \mu_{1t} \\ \mu_{2t} \\ \vdots \\ \mu_{kt} \end{bmatrix} \\
 \hspace{20em} (K \times 1) \hspace{10em} : (Y_t) \\
 (K \times K) \hspace{10em} (A_i)
 \end{array}$$

:

(K×1) : (A₀)

(K×1) : (μ_t)

(K×K) (Σ_μ) :

VAR(P)

:(MCO)

VAR

Tendance)

³.(*Tendance Déterministe*) VAR (*Stochastique*)

:(P) -

(AKAIKE, SCHWARTZ) VAR

) h 0 VAR h

⁴. (

: Sc(p) Aic(p)

$$Aic(p) = \ln \left[\det \left(\sum_e \right) \right] + \frac{(2K^2 p)}{n}$$

$$Sc(p) = \ln \left[\det \left(\sum_e \right) \right] + \frac{K^2 p \ln(n)}{n}$$

: K :

: n

: p

: Σ_e

p

³ Bourbonnais Régis ,Op- cit,Paris2006,P259

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(gPIBr) : _____ *

(BCdPIB) : _____ *

(intr) : _____ *

(M2r) : _____ *

(TC) : _____ *
(M2r)

(TRr) : _____ *

(Gr) : _____ *

(PH)

:
: _____ *

)
(ADF) (DF) ((-1
:"(gPIB) " -1
: (gPIB)
(gPIB) :(1-5)

Date: 01/05/10 Time: 10:49
Sample: 1970 2008
Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 -0.298	-0.298	3.7346	0.053
		2 0.135	0.051	4.5226	0.104
		3 0.018	0.078	4.5369	0.209
		4 0.082	0.111	4.8412	0.304
		5 -0.027	0.016	4.8745	0.431
		6 0.189	0.183	6.6039	0.359
		7 0.077	0.198	6.9035	0.439
		8 -0.122	-0.098	7.6682	0.467
		9 -0.021	-0.167	7.6924	0.565
		10 0.055	-0.028	7.8613	0.642
		11 -0.052	-0.040	8.0163	0.712
		12 0.014	-0.043	8.0285	0.783
		13 0.036	0.003	8.1090	0.836
		14 -0.044	0.026	8.2341	0.877
		15 -0.087	-0.031	8.7408	0.891
		16 -0.032	-0.097	8.8116	0.921

:(2 -5)

aki	chw	p
6.21	6.34	0
5.92	6.10	1
5.38	5.60	2
5.44	5.71	3

. P = 2

schw akai

(gPIB) (-02 -)

: %5 = α

ADF

%5 = α

ADF

:(3-5)

3.53-	3.62-	6
2.94-	3.59-	5
1.95-	2.32-	4

:(Gr)

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-2

:(Gr)

:(Gr)

:(4-5)

Date: 01/06/10 Time: 07:53
 Sample: 1970 2008
 Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
		1	0.642	0.642	17.349	0.000
		2	0.620	0.353	33.959	0.000
		3	0.460	-0.048	43.339	0.000
		4	0.342	-0.111	48.694	0.000
		5	0.292	0.052	52.704	0.000
		6	0.229	0.039	55.246	0.000
		7	0.215	0.045	57.556	0.000
		8	0.158	-0.048	58.836	0.000
		9	0.124	-0.039	59.649	0.000
		10	0.094	0.006	60.138	0.000
		11	0.070	0.016	60.417	0.000
		12	0.061	0.010	60.637	0.000
		13	0.068	0.035	60.919	0.000
		14	0.062	0.002	61.162	0.000
		15	0.048	-0.030	61.314	0.000
		16	0.032	-0.021	61.387	0.000

(AC)

P = 1

(PAC)

:(5 -5)

aki	chw	p
15.71	15.84	0
15.30	15.48	1
15.31	15.53	2
15.31	15.58	3

. P = 1

schw akai

(Gr) (-03-)

%5 = α

ADF

.%5 = α

ADF

:(6 -5)

3.53-	0.92	6
2.94-	1.92	5
1.95-	4.10	4

(Gr)

:(7 -5)

Date: 01/06/10 Time: 07:58
 Sample: 1970 2008
 Included observations: 38

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 -0.314	-0.314	4.0503	0.044
		2 0.159	0.067	5.1118	0.078
		3 0.115	0.203	5.6815	0.128
		4 -0.035	0.051	5.7349	0.220
		5 0.102	0.068	6.2122	0.286
		6 -0.107	-0.099	6.7536	0.344
		7 0.057	-0.032	6.9106	0.438
		8 0.029	0.049	6.9540	0.542
		9 0.004	0.065	6.9547	0.642
		10 0.024	0.027	6.9857	0.727
		11 -0.016	-0.020	6.9995	0.799
		12 -0.090	-0.153	7.4678	0.825
		13 -0.041	-0.141	7.5697	0.870
		14 0.017	0.017	7.5876	0.910
		15 -0.029	0.071	7.6428	0.937
		16 -0.081	-0.049	8.1007	0.946

:(8 -5)

aki	chw	p
15.27	15.40	0
15.25	15.43	1
15.28	15.50	2
15.26	15.53	3

. P = 1

schw akai

(Gr) (-04-)

: %5 = α

ADF

.%5 = α

ADF

:(9 -5)

3.54-	3.21-	6
2.94-	3.04-	5
1.95-	2.14-	4

(Gr)

:(41 -4)

Date: 01/06/10 Time: 08:04
 Sample: 1970 2008
 Included observations: 37

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 -0.412	-0.412	6.7980	0.009
		2 0.026	-0.172	6.8268	0.033
		3 0.099	0.051	7.2465	0.064
		4 -0.101	-0.036	7.6948	0.103
		5 0.155	0.133	8.7845	0.118
		6 -0.112	-0.008	9.3660	0.154
		7 0.012	-0.024	9.3733	0.227
		8 0.014	-0.032	9.3828	0.311
		9 -0.020	-0.008	9.4033	0.401
		10 0.017	-0.010	9.4194	0.493
		11 0.044	0.079	9.5282	0.573
		12 -0.040	0.017	9.6198	0.649
		13 -0.045	-0.071	9.7398	0.715
		14 0.053	-0.013	9.9164	0.768
		15 0.030	0.063	9.9754	0.821
		16 -0.149	-0.139	11.505	0.777

:(10-5)

aki	chw	p
15.48	15.61	0
15.30	15.48	1
15.32	15.55	2
15.17	15.44	3

. P = 3 schw akai

ADF (Gr) (-05-)

: %5 = α

%5 = α

ADF

:(11 -5)

3.55-	5.59-	6
2.95-	4.96-	5
1.95-	5.00-	4

:"(BcdPIB)

" -3

:(BcdPIB)

(BcdPIB)

:(12 -5)

Date: 01/05/10 Time: 11:25
 Sample: 1970 2008
 Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.063	0.063	0.1677	0.682
		2 0.049	0.045	0.2708	0.873
		3 0.105	0.100	0.7608	0.859
		4 0.116	0.104	1.3794	0.848
		5 0.067	0.048	1.5887	0.903
		6 0.067	0.045	1.8094	0.936
		7 0.088	0.059	2.1945	0.948
		8 0.005	-0.028	2.1956	0.974
		9 0.002	-0.025	2.1958	0.988
		10 -0.011	-0.039	2.2029	0.995
		11 0.037	0.021	2.2795	0.997
		12 0.037	0.031	2.3620	0.999
		13 0.009	0.006	2.3671	0.999
		14 -0.038	-0.044	2.4608	1.000
		15 -0.040	-0.045	2.5689	1.000
		16 -0.004	-0.005	2.5698	1.000

:(13 -5)

aki	chw	p
1.23	1.36	0
1.31	1.48	1
1.38	1.60	2
1.46	1.73	3

. P = 0

schw akai

(BcdPIB) (-06-)

:

%5 = α

ADF

%5 = α

ADF

:(14 -5)

3.53-	6.26-	1
2.93-	5.58-	2
1.94-	5.65-	3

:"(TC)

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(TC)

.(TC)

:(15 -5)

Date: 01/06/10 Time: 08:11
 Sample: 1970 2008
 Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
1	0.964	0.964	39.074	0.000	
2	0.909	-0.268	74.816	0.000	
3	0.844	-0.139	106.43	0.000	
4	0.768	-0.131	133.36	0.000	
5	0.684	-0.100	155.35	0.000	
6	0.586	-0.221	171.97	0.000	
7	0.479	-0.105	183.45	0.000	
8	0.374	0.000	190.65	0.000	
9	0.269	-0.034	194.51	0.000	
10	0.174	0.074	196.18	0.000	
11	0.087	0.029	196.62	0.000	
12	0.001	-0.106	196.62	0.000	
13	-0.078	-0.040	196.99	0.000	
14	-0.147	0.031	198.37	0.000	
15	-0.201	0.042	201.05	0.000	
16	-0.242	-0.003	205.12	0.000	

(AC)

P = 1

(PAC)

:(16 -5)

aki	chw	p
5.66	5.79	0
5.25	5.43	1
5.34	5.56	2
5.20	5.46	3

. P = 3

schw akai

(TC) (-07-)

:

%5 = α

ADF

.%5 = α

ADF

:(17 -5)

3.54-	2.24-	6
2.94-	1.63-	5
1.95-	1.00-	4

(TC)

:(18 -5)

Date: 01/06/10 Time: 08:15
 Sample: 1970 2008
 Included observations: 38

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.584	0.584	14.023	0.000
		2 0.274	-0.102	17.197	0.000
		3 0.341	0.344	22.250	0.000
		4 0.349	0.008	27.684	0.000
		5 0.304	0.139	31.933	0.000
		6 0.121	-0.255	32.630	0.000
		7 -0.116	-0.240	33.293	0.000
		8 -0.189	-0.195	35.111	0.000
		9 -0.235	-0.221	38.015	0.000
		10 -0.204	0.110	40.283	0.000
		11 -0.175	0.077	42.001	0.000
		12 -0.350	-0.113	49.182	0.000
		13 -0.397	0.022	58.787	0.000
		14 -0.230	0.049	62.134	0.000
		15 -0.161	-0.046	63.843	0.000
		16 -0.204	-0.139	66.732	0.000

(PAC)

P = 1

:(19 -5)

aki	chw	p
5.30	5.43	0
5.38	5.55	1
5.30	5.52	2
5.39	5.66	3

. P = 0

schw akai

(TC) (-08-)

: %5 = α

ADF

%5 = α

ADF

:(20-5)

3.54-	2.54-	1
2.94-	2.67-	2
1.95-	2.54-	3

(TC)

:(21 -5)

Date: 01/06/10 Time: 08:20
Sample: 1970 2008
Included observations: 37

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 -0.120	-0.120	0.5776	0.447
		2 -0.462	-0.483	9.3657	0.009
		3 0.110	-0.040	9.8784	0.020
		4 -0.029	-0.315	9.9139	0.042
		5 0.226	0.303	12.211	0.032
		6 0.139	0.093	13.116	0.041
		7 -0.223	0.179	15.513	0.030
		8 0.062	0.193	15.705	0.047
		9 -0.112	-0.196	16.348	0.060
		10 -0.093	-0.137	16.813	0.079
		11 0.298	-0.073	21.729	0.027
		12 -0.109	-0.194	22.419	0.033
		13 -0.202	-0.147	24.871	0.024
		14 0.120	-0.003	25.771	0.028
		15 0.002	0.117	25.771	0.040
		16 -0.049	-0.022	25.935	0.055

:(22-5)

aki	chw	p
5.49	5.62	0
5.28	5.45	1
5.36	5.59	2
5.29	5.56	3

. P = 1

schw akai

ADF

(TC) (-09-)

: %5 = α

%5 = α

ADF

:(23-5)

3.54-	7.32-	1
2.94-	7.19-	2
1.95-	7.29-	3

:(Ph)

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(Ph)

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:(24-5)

Date: 01/05/10 Time: 12:03
 Sample: 1970 2008
 Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
		1	0.713	0.713	21.365	0.000
		2	0.503	-0.010	32.287	0.000
		3	0.328	-0.054	37.067	0.000
		4	0.170	-0.085	38.391	0.000
		5	0.087	0.024	38.743	0.000
		6	0.027	-0.016	38.780	0.000
		7	-0.013	-0.019	38.788	0.000
		8	-0.046	-0.036	38.897	0.000
		9	-0.119	-0.123	39.646	0.000
		10	-0.134	0.021	40.644	0.000
		11	-0.102	0.065	41.238	0.000
		12	-0.094	-0.038	41.757	0.000
		13	-0.092	-0.053	42.283	0.000
		14	-0.076	0.008	42.657	0.000
		15	-0.037	0.061	42.750	0.000
		16	-0.011	0.002	42.758	0.000

.EViews 4.0

-01-

(PAC)

P=1

:(25-5)

aki	chw	p
6.48	6.61	0
6.50	6.68	1
6.58	6.80	2
6.62	6.89	3

. P = 0

schw akai

(Ph) (-10-)

: %5 = α

ADF

.%5 = α

ADF

:(26-5)

3.53-	2.32	1
2.93-	3.50	2
1.94-	4.15	3

(Ph)

:(27 -5)

Date: 01/05/10 Time: 12:08
 Sample: 1970 2008
 Included observations: 38

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
		1	0.367	0.367	5.5430	0.019
		2	0.228	0.107	7.7309	0.021
		3	0.255	0.165	10.552	0.014
		4	0.079	-0.088	10.830	0.029
		5	0.104	0.063	11.329	0.045
		6	-0.023	-0.131	11.355	0.078
		7	-0.038	0.000	11.425	0.121
		8	0.082	0.104	11.762	0.162
		9	0.001	-0.016	11.763	0.227
		10	-0.040	-0.059	11.851	0.295
		11	-0.058	-0.068	12.040	0.361
		12	-0.042	0.015	12.142	0.434
		13	-0.048	-0.035	12.281	0.505
		14	-0.185	-0.152	14.451	0.417
		15	0.016	0.186	14.467	0.490
		16	-0.029	-0.064	14.523	0.560

.EViews 4.0

-01-

(PAC)

P = 1

:(28 -5)

aki	chw	p
6.49	6.62	0
6.55	6.73	1
6.56	6.79	2
6.58	6.85	3

. P = 0

schw akai

(Ph) (-11-)

:

%5 = α

ADF

%5 = α

ADF

:(29 -5)

3.53-	3.04-	1
2.93-	2.55-	2
1.95-	2.15-	3

(Ph)

:(30 -5)

Date: 01/05/10 Time: 12:15
 Sample: 1970 2008
 Included observations: 37

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1	-0.364	5.3011	0.021
		2	-0.134	6.0376	0.049
		3	0.161	7.1408	0.068
		4	-0.133	7.9172	0.095
		5	0.219	10.079	0.073
		6	-0.085	10.416	0.108
		7	-0.061	10.594	0.157
		8	0.005	10.595	0.226
		9	0.039	10.672	0.299
		10	0.130	11.577	0.314
		11	-0.112	12.267	0.344
		12	-0.059	12.467	0.409
		13	0.167	14.144	0.364
		14	-0.330	20.996	0.102
		15	0.250	25.110	0.048
		16	0.083	25.583	0.060

:(31 -5)

aki	chw	p
6.59	6.73	0
6.52	6.70	1
6.53	6.75	2
6.55	6.82	3

. P = 1 schw akai

ADF (Ph) (-12-)

: %5 = α

%5 = α ADF :(32 -5)

3.53-	6.75-	1
2.93-	6.51-	2
1.95-	6.45-	3

:"(TRr) " -6

(TRr) :(33 -5)

Date: 01/10/10 Time: 17:23
 Sample: 1970 2008
 Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.784	0.784	25.878	0.000
		2 0.660	0.118	44.719	0.000
		3 0.514	-0.092	56.471	0.000
		4 0.372	-0.099	62.791	0.000
		5 0.304	0.097	67.142	0.000
		6 0.230	-0.011	69.697	0.000
		7 0.168	-0.041	71.103	0.000
		8 0.126	-0.001	71.917	0.000
		9 0.049	-0.098	72.043	0.000
		10 0.026	0.050	72.080	0.000
		11 0.026	0.078	72.119	0.000
		12 0.003	-0.055	72.119	0.000
		13 -0.020	-0.081	72.145	0.000
		14 -0.028	0.038	72.196	0.000
		15 -0.038	0.021	72.293	0.000
		16 -0.038	-0.009	72.392	0.000

:(34-5)

aki	chw	p
24.12	24.25	0
24.12	24.30	1
23.98	24.20	2
24.04	24.31	3

. P = 2

schw akai

(TRr) (-13-)

:

%5 = α

ADF

%5 = α

ADF

:(35-5)

3.53-	3.71	6
2.93-	4.81	5
1.95-	4.59	4

(TRr)

:(36-5)

Date: 01/10/10 Time: 17:32

Sample: 1970 2008

Included observations: 38

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.031	0.031	0.0383	0.845
		2 0.072	0.071	0.2559	0.880
		3 0.405	0.404	7.3918	0.060
		4 0.020	0.004	7.4091	0.116
		5 0.229	0.211	9.8185	0.081
		6 0.171	0.009	11.214	0.082
		7 -0.210	-0.287	13.370	0.064
		8 0.174	0.003	14.910	0.061
		9 0.122	0.068	15.686	0.074
		10 -0.101	0.034	16.236	0.093
		11 0.012	-0.097	16.244	0.132
		12 -0.030	-0.012	16.297	0.178
		13 -0.108	-0.108	17.000	0.199
		14 -0.005	-0.097	17.001	0.256
		15 -0.052	0.046	17.177	0.308
		16 -0.033	0.150	17.251	0.370

(PAC)

P = 3

:(37-5)

aki	chw	p
24.22	24.35	0
24.29	24.47	1
24.11	24.33	2
24.11	24.28	3

. P = 3

schw akai

(TRr) (-14-)

:

%5 = α

ADF

%5 = α

ADF

:(38-5)

3.53-	1.61-	6
2.93-	0.41-	5
1.95-	0.88	4

(TRr)

:(39-5)

Date: 01/10/10 Time: 17:41

Sample: 1970 2008

Included observations: 37

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob	
		1	-0.366	-0.366	5.3558	0.021
		2	-0.320	-0.523	9.5692	0.008
		3	0.383	0.023	15.810	0.001
		4	-0.245	-0.304	18.438	0.001
		5	0.130	0.170	19.205	0.002
		6	0.272	0.331	22.647	0.001
		7	-0.441	0.006	32.012	0.000
		8	0.075	-0.053	32.291	0.000
		9	0.233	-0.065	35.097	0.000
		10	-0.119	0.111	35.854	0.000
		11	0.020	-0.018	35.877	0.000
		12	0.008	0.065	35.881	0.000
		13	-0.082	0.085	36.285	0.001
		14	0.051	-0.085	36.446	0.001
		15	0.022	-0.163	36.477	0.002
		16	-0.026	-0.080	36.523	0.002

:(40-5)

aki	chw	p
24.66	24.79	0
24.12	24.30	1
24.15	24.37	2
23.79	23.99	3

. P = 3

schw akai

(TRr) (-15-)

:

%5 = α

ADF

%5 = α

ADF

:(41-5)

3.55-	7.70-	6
2.93-	6.48-	5
1.95-	6.21-	4

:(INTr)

"

-7




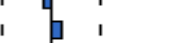

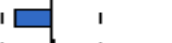

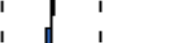
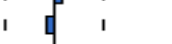
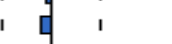
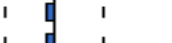

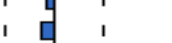
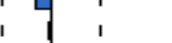
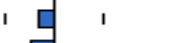
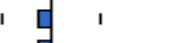
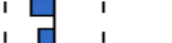

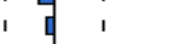
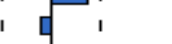
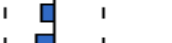
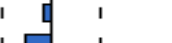
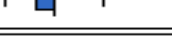
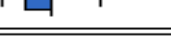








(INTr)

:(42-5)

Date: 01/10/10 Time: 20:23

Sample: 1970 2008

Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.771	0.771	24.997	0.000
		2 0.575	-0.047	39.293	0.000
		3 0.461	0.082	48.740	0.000
		4 0.270	-0.253	52.076	0.000
		5 0.135	0.015	52.933	0.000
		6 0.054	-0.029	53.077	0.000
		7 -0.049	-0.078	53.195	0.000
		8 -0.043	0.167	53.289	0.000
		9 -0.054	-0.108	53.445	0.000
		10 -0.096	-0.024	53.955	0.000
		11 -0.110	-0.086	54.642	0.000
		12 -0.154	-0.097	56.048	0.000
		13 -0.105	0.241	56.730	0.000
		14 -0.054	-0.064	56.919	0.000
		15 -0.084	-0.057	57.390	0.000
		16 -0.116	-0.172	58.318	0.000

:(43-5)

aki	chw	p
5.84	5.97	0
5.89	6.07	1
5.97	6.19	2
5.98	6.25	3

. P = 0

schw akai

(INTr) (-16-)

:

%5 = α

ADF

%5 = α

ADF

:(44-5)

3.53-	2.50-	3
2.93-	2.04-	2
1.95-	1.91-	1

(INTr)

:(45-5)

Date: 01/10/10 Time: 20:30
 Sample: 1970 2008
 Included observations: 38

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 -0.085	-0.085	0.2992	0.584
		2 -0.191	-0.200	1.8392	0.399
		3 0.170	0.140	3.0960	0.377
		4 -0.118	-0.138	3.7205	0.445
		5 -0.125	-0.090	4.4419	0.488
		6 0.040	-0.050	4.5177	0.607
		7 -0.236	-0.266	7.2397	0.404
		8 0.012	-0.018	7.2464	0.510
		9 0.077	-0.062	7.5577	0.579
		10 -0.057	-0.018	7.7331	0.655
		11 0.046	-0.021	7.8512	0.727
		12 -0.149	-0.273	9.1500	0.690
		13 0.060	0.042	9.3661	0.745
		14 0.183	0.034	11.477	0.648
		15 -0.009	0.080	11.483	0.718
		16 -0.092	-0.102	12.071	0.739

:(46-5)

aki	chw	p
6.02	6.15	0
6.06	6.24	1
6.15	6.35	2
6.18	6.45	3

. P = 0

schw akai

(INTr) (-17-)

:

%5 = α

ADF

%5 = α

ADF

:(47-5)

3.53-	6.41-	3
2.93-	6.45-	2
1.95-	6.54-	1

:"(M2r)

"

-8

(M2r)

:(48-5)

Date: 01/10/10 Time: 20:39
 Sample: 1970 2008
 Included observations: 39

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.837	0.837	29.501	0.000
		2 0.696	-0.016	50.461	0.000
		3 0.559	-0.069	64.324	0.000
		4 0.443	-0.013	73.289	0.000
		5 0.334	-0.052	78.524	0.000
		6 0.224	-0.081	80.958	0.000
		7 0.127	-0.045	81.761	0.000
		8 0.049	-0.015	81.886	0.000
		9 -0.008	-0.004	81.889	0.000
		10 -0.051	-0.014	82.033	0.000
		11 -0.086	-0.024	82.457	0.000
		12 -0.084	0.078	82.876	0.000
		13 -0.060	0.059	83.100	0.000
		14 -0.029	0.023	83.155	0.000
		15 -0.006	-0.009	83.157	0.000
		16 0.008	-0.021	83.162	0.000

:(49-5)

aki	chw	p
23.44	23.57	0
23.27	23.44	1
23.33	23.55	2
23.39	23.66	3

. P = 1

schw akai

(M2r) (-18-)

:

%5 = α

ADF

%5 = α

ADF

:(50-5)

3.53-	0.98	6
2.93-	2.12	5
1.95-	2.53	4

(M2r)

:(51-5)

Date: 01/10/10 Time: 20:45

Sample: 1970 2008

Included observations: 38

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 0.598	0.598	14.706	0.000
		2 0.494	0.212	25.022	0.000
		3 0.371	0.018	30.990	0.000
		4 0.328	0.070	35.788	0.000
		5 0.341	0.137	41.147	0.000
		6 0.183	-0.176	42.736	0.000
		7 0.062	-0.160	42.924	0.000
		8 0.050	0.065	43.049	0.000
		9 -0.019	-0.073	43.068	0.000
		10 0.000	0.007	43.068	0.000
		11 -0.258	-0.366	46.808	0.000
		12 -0.367	-0.197	54.681	0.000
		13 -0.293	0.162	59.889	0.000
		14 -0.226	0.136	63.127	0.000
		15 -0.137	0.085	64.361	0.000
		16 -0.199	-0.023	67.089	0.000

(PAC)

P = 1

:(52-5)

aki	chw	p
23.34	23.38	0
23.28	23.46	1
23.33	23.56	2
23.41	23.68	3

. P = 1

schw akai

(M2r) (-19-)

%5 = α

ADF

%5 = α

ADF

:(53-5)

3.53-	1.54-	6
2.93-	0.76-	5
1.95-	0.13-	4

(M2r)

:(54-5)

Date: 01/10/10 Time: 20:53
 Sample: 1970 2008
 Included observations: 37

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
		1 -0.280	-0.280	3.1486	0.076
		2 -0.128	-0.225	3.8284	0.147
		3 0.017	-0.103	3.8412	0.279
		4 -0.009	-0.075	3.8451	0.427
		5 0.237	0.233	6.3812	0.271
		6 -0.143	0.009	7.3322	0.291
		7 -0.185	-0.178	8.9702	0.255
		8 0.181	0.051	10.601	0.225
		9 -0.109	-0.125	11.215	0.261
		10 0.243	0.205	14.381	0.156
		11 0.014	0.221	14.391	0.212
		12 -0.218	-0.032	17.145	0.144
		13 0.119	-0.012	18.002	0.157
		14 -0.079	-0.133	18.398	0.189
		15 0.108	-0.016	19.163	0.206
		16 -0.029	-0.025	19.221	0.257

:(55-5)

aki	chw	p
23.30	23.43	0
23.31	23.48	1
23.37	23.59	2
23.41	23.68	3

. P = 0

schw akai

(M2r) (-20-)

%5 = α

ADF

%5 = α

ADF

:(56-5)

3.55-	7.63-	6
2.93-	7.53-	5
1.95-	7.52-	4

:(57-5)

(Gr) (TC) (Ph) (M2r) (TRr)	(gPIBr) (BCdPIB)

(BcdPIB) (gPIB)

(Ph) (TC) (Gr)

:(BcdPIB) (gPIB)

-1

$$gpib = c_1 + c_2bcdpib + \varepsilon_t$$

%5 = α

ADF

:(58-5)

-4.21	-3.58	% 1

:(TRr) (intr) (M2r) (Ph) (TC) (Gr)

-2

$$GR = c_0 + c_1Ph + c_2Tc + c_3m2r + c_4trr + c_5intr + \varepsilon_t$$

%5 = α

ADF

:(59-5)

-1.70	-4.22	% 1
	-3.53	% 5
	-3.19	% 10

Eviews 4.0
(VAR)

:(BCDPIB) (PIBR)

: P=2

: -1

PIB

.-01-

$$DGPIBr = -0.62 DGPIBr(-1) - 0.24 DGPIBr(-2) + 0.002 DBCDPIB(-1) - 0.28 DBCDPIB(-2) - 0.45$$

$R^2 = 0.48$

$Fs = 9.38$

$n = 36$

$SCR = 505.85$

:

: -

%48

(2.67)

: -

: -2

PIB

.-01-

$BCDPIB = 0.009 DGPIBr (-1) + 0.015 DGPIBr(-2)$ $- 0.66 DBCDPIB(-1) - 0.35 DBCDPIB(-2) + 0.017$			
$R^2 = 0.29$	$Fs = 4.74$	$n = 36$	$SCR = 8.63$

: -

%29

.(2.67)

:(DDTRr) (DDM2r) (DDPh) (DDTC) (DDGr)

⁵: P=1

-3

$$\begin{aligned} DDPH = & - 0.001058718686 * DDGr(-1) \\ & - 8.357791762e-05 * DDM2r(-1) - 0.3106027058 * DDPH(-1) \\ & - 3.47343284e-05 * DDTRr(-1) + 0.9090369729. \end{aligned}$$

$R^2 = 0.20$

$F_s = 3.31$

$n = 36$

$SCR = 1112.794$

%20

(2.67)

:

: -4

$$\begin{aligned}
DDG r = & - 1.64417102 * DDG r (-1) - 0.001945216625 * DDM2 r (-1) \\
& - 0.6902095572 * DDPH(-1) + 0.003765030009 * DDTR r (-1) \\
& + 46.91775689.
\end{aligned}$$

$R^2 = 0.67$ $F_s = 16.32$ $n = 36$ $SCR = 8352508.$

: -

%63

(2.67)

: -

: -5

$$\begin{aligned}
DDM2R = & - 26.88710974 * DDGR(-1) - 0.1732107023 * DDM2R(-1) \\
& - 645.9338728 * DDPH(-1) + 0.1672889275 * DDTRR(-1) \\
& + 3020.258789
\end{aligned}$$

$R^2 = 0.11$ $F_s = 2.09$ $n = 36$ $SCR = 2.13E+10$

: -

%11

(2.67)

:

: -

: -6

$$\begin{aligned} DDTRr = & - 42.56695585 * DDGr(-1) - 0.6025047304 * DDM2r(-1) \\ & + 2157.076799 * DDPH(-1) - 0.6343805294 * DDTRr(-1) \\ & + 3684.466541 \end{aligned}$$

$R^2 = 0.46$ $Fs = 8.45$ $n = 36$ $SCR = 5.57E+10$

: -

% 46

(2.67)

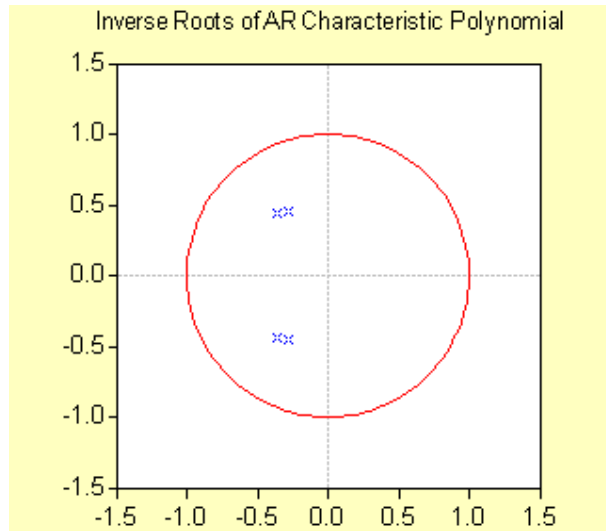
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42,56 :

.(BCDPIB) (PIBR)

VAR

:(1-5)



.Eviews 4.0

-01-

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%4,03

%0,0017

%.0,151 -

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%0,52

%0,07 -

%0,01 %0,083 :

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%98,20

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%1,79 :

%99,67

%0,32

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: -1

$DGPIBr = -0.63 DGPIBr(-1) - 0.24 DGPIBr(-2)$ <p><i>F-Stat=3834 R² adjuste = 0.52 DW = 1.86 Obs = 36</i></p>

: -

%52

()

| - 6.00 | > 1.96 :

(4.13) (38.34)

(1.86)

[1.59 , 2.41]

: -

: -2

$DBC DPIB = -0.68 DBC DPIB(-1) - 0.37 DBC DPIB(-2)$ <p><i>F-Stat=1830 R² adjuste = 0.33 DW = 2.21 Obs = 36</i></p>

:

: -

: -4

$$DDGr = -1.58 DDGr(-1) + 0.005 DDTRr(-1) + DDM2r (-1) - 0.706$$

F-Stat=4696 R² ajuste = 0.73 DW = 1.67 Obs = 36

: -

%73

()

$$|-6.50| > 1.96 :$$

(1.67)

[1.66 , 2.34]

: -

:(M2r) -5

$$DDM2r = -22.75 DDGr(-1)$$

F-Stat=4.77 R² ajuste = 0.12 DW = 2.38 Obs = 36

:

: -

%12

()

$|- 2.30| > 1.96 :$

(4.11)

(4.77)

(2.38)

[1.59 , 2.41]

: -

2008 2001

: -6

$$DDTRr = -49.05468562*DDGr (-1) + 1808.582857*DDPH(-1) + 17736.29028$$

F-Stat=7.68 R² ajuste = 0.27 DW = 1.66 Obs = 36

: -

%27

()

$|1.75| > 1.30 :$

(4.11)

(7.68)

:

(1.66)

[1.59 , 2.41]

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خاتمة عامة



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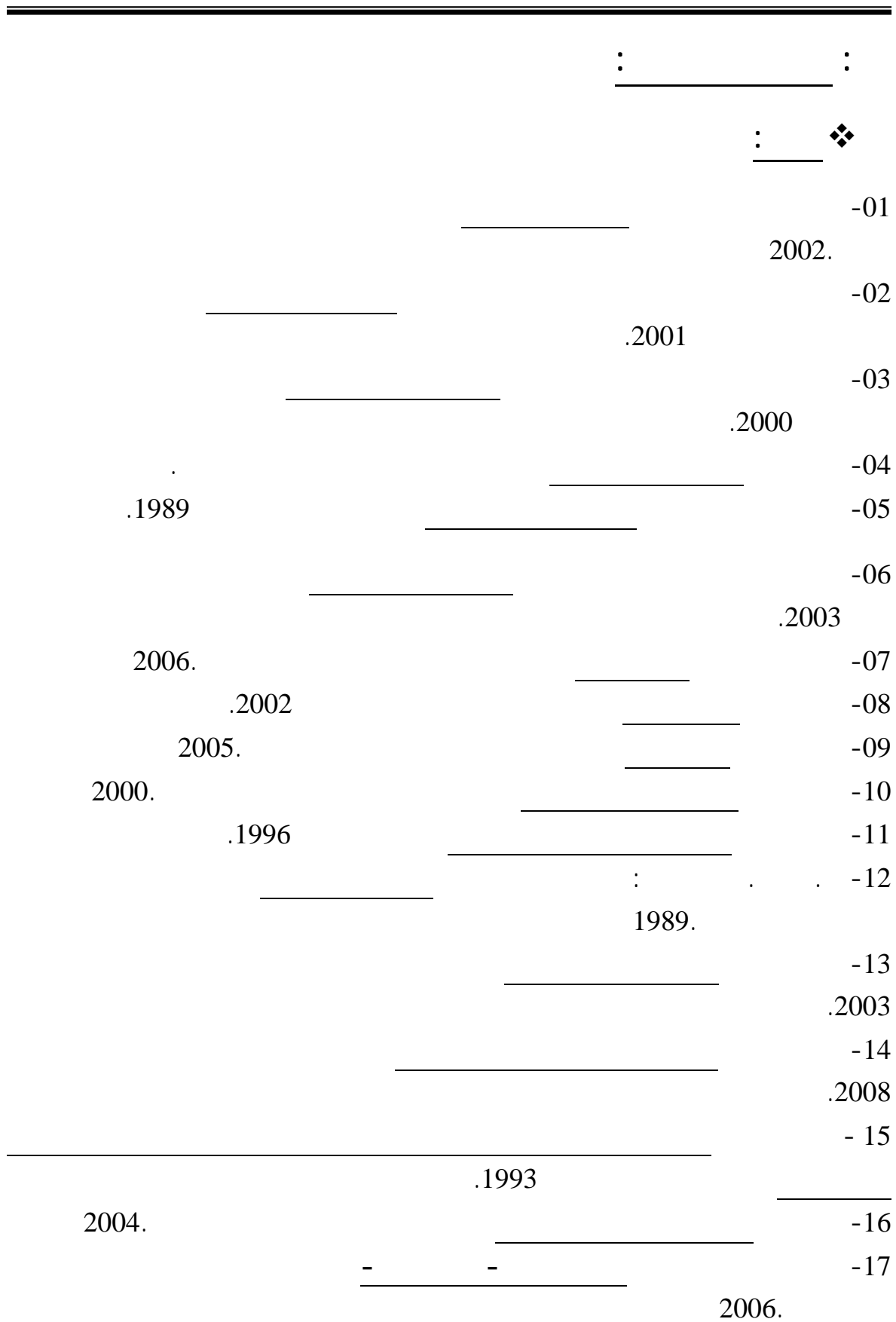
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قائمة المراجع



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2002.			-38
	1994.		-39

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- -2000 – 1990	-82
2003 -2002 :	
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.2005 -2004 :	
2004 -1990 :	-84
.2007 -2006	
	-85
.2000	
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	(gPIBr)	(Gr)	(TRr)	(BcdPIB)	(Ph)	(TC)	(intr)	(M2r)
1970	8.6	43632.26	29059.9078	-0.0777	1.67	4.94	-2.3	60368.6636
1971	11.07-	44362.78	31026.9058	-0.1061	2.03	4.91	-0.3	62331.8386
1972	27.11	48851.08	39534.4828	-0.0058	2.29	4.48	-1.25	78017.2414
1973	4.01	60064.72	44625	-0.069	3.05	3.96	-4.15	92338.7097
1974	7.27	116593.14	91913.7255	0.03424	10.73	4.18	-0.05	101176.471
1975	5.19	136088.27	90440.4332	-0.0917	10.73	3.95	-5.85	121660.65
1976	8.53	143404.17	87383.3333	-0.04	11.51	4.16	-5.55	145333.333
1977	5.22	163174.62	100537.538	-0.1117	12.39	4.15	-8.25	155855.856
1978	9.13	184989.74	95537.6623	-0.1449	12.7	3.97	-12.86	175064.935
1979	7.39	174297.76	109244.706	-0.1617	17.25	3.85	-7.65	187529.412
1980	0.82	189884.59	128435.345	0.0405	28.64	3.84	-6.45	201508.621
1981	3	187493.52	149218.045	0.03734	32.51	4.32	-11.95	205263.158
1982	6.46	196217.35	131408.85	-2.5871	32.38	4.59	-3.45	244070.796
1983	3.96	209621.54	134631.052	0.02198	29.04	4.79	-3.25	276961.603
1984	7	208874.69	156427.469	0.02323	28.24	4.98	-5.45	300462.963
1985	5.43	203915.92	147835.196	0.03144	27.01	5.03	-7.75	312709.497
1986	1.2	194616.79	111554.726	-0.0409	13.57	4.7	-9.55	282338.308
1987	0.81-	181670.37	107620.37	0.01878	17.73	4.84	-2.5	298495.37
1988	1.95	184035.08	102185.792	-0.085	14.24	5.91	-0.9	320109.29
1989	13.85	207775.2	116400	-0.1205	17.31	7.61	-3.3	308100
1990	1.04	219554.03	129346.904	-0.0201	22.26	8.96	-9.15	290924.512
1991	1.08	272165.7	167722.372	0.06402	18.62	18.47	-14.9	279851.752
1992	2.18	263071.44	159602.866	0.02373	18.44	21.87	-20.2	264022.518
1993	2.84-	240964.8	133311.677	-0.0167	16.33	23.35	-9	266411.89
1994	2.1-	244347.45	157019.085	-0.0643	15.53	35.06	-11.37	238071.734
1995	4.69	250330.91	155104.209	-0.0476	16.86	47.65	-11.8	202738.337
1996	1.9	227690.24	176277.932	0.08197	20.29	54.75	-2.37	195492.416
1997	1.2	227513.64	187243.484	0.09971	18.68	57.68	8.3	218528.996
1998	5.7	250829.8	149116.481	-0.0016	12.28	58.74	4.24	306584.521
1999	3.2	266678.92	178262.566	0.06156	17.48	66.57	5.9	335577.644
2000	2.2	286808.41	294983.364	0.23725	27.6	75.26	8.2	378037.383
2001	2.7	323942.07	270001.076	0.16518	23.12	77.26	3.8	443597.561
2002	4.7	289878.87	283499.204	0.21121	24.36	79.68	5.23	513085.765
2003	6.9	325621.44	340372.35	0.25721	28.1	77.39	3.92	568781.245
2004	5.2	341550.77	371121.838	0.35919	36.05	72.06	2.94	606591.212
2005	5.1	401738.29	504831.313	0.33569	50.64	73.36	4.87	666622.994
2006	2	496505.14	581354.118	0.29121	61.08	72.65	3.97	771071.252
2007	3	389443.56	569061.029	0.22029	74.77	69.38	3	837543.399
2008	3.5	721226.71	755026.369	0.31245	99.86	64.58	2.05	968770.774

ADF Test Statistic	-3.595401	1% Critical Value*	-3.6228
		5% Critical Value	-2.9446
		10% Critical Value	-2.6105

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(G)
 Method: Least Squares
 Date: 01/05/10 Time: 10:55
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G(-1)	-0.778370	0.216490	-3.595401	0.0011
D(G(-1))	-0.115225	0.169745	-0.678812	0.5021
D(G(-2))	-0.030705	0.104411	-0.294083	0.7706
C	2.941587	1.098543	2.677716	0.0116
R-squared	0.677078	Mean dependent var	-0.655833	
Adjusted R-squared	0.646804	S.D. dependent var	5.652552	
S.E. of regression	3.359330	Akaike info criterion	5.365799	
Sum squared resid	361.1232	Schwarz criterion	5.541746	
Log likelihood	-92.58439	F-statistic	22.36501	
Durbin-Watson stat	1.856527	Prob(F-statistic)	0.000000	

ADF Test Statistic	-3.623628	1% Critical Value*	-4.2324
		5% Critical Value	-3.5386
		10% Critical Value	-3.2009

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(G)
 Method: Least Squares
 Date: 01/05/10 Time: 10:55
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G(-1)	-0.933089	0.257501	-3.623628	0.0010
D(G(-1))	-0.027507	0.187005	-0.147092	0.8840
D(G(-2))	0.004147	0.108774	0.038125	0.9698
C	5.078719	2.228597	2.278886	0.0297
@TREND(1970)	-0.071112	0.064588	-1.101001	0.2794
R-squared	0.689230	Mean dependent var	-0.655833	
Adjusted R-squared	0.649130	S.D. dependent var	5.652552	
S.E. of regression	3.348247	Akaike info criterion	5.382997	
Sum squared resid	347.5335	Schwarz criterion	5.602930	
Log likelihood	-91.89394	F-statistic	17.18804	
Durbin-Watson stat	1.791398	Prob(F-statistic)	0.000000	

ADF Test Statistic	-2.324976	1% Critical Value*	-2.6280
		5% Critical Value	-1.9504
		10% Critical Value	-1.6206

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(G)
 Method: Least Squares
 Date: 01/05/10 Time: 10:54
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G(-1)	-0.279820	0.120354	-2.324976	0.0264
D(G(-1))	-0.439431	0.129617	-3.390226	0.0018
D(G(-2))	-0.168547	0.098967	-1.703059	0.0980
R-squared	0.604721	Mean dependent var	-0.655833	
Adjusted R-squared	0.580765	S.D. dependent var	5.652552	
S.E. of regression	3.659935	Akaike info criterion	5.512423	
Sum squared resid	442.0391	Schwarz criterion	5.644383	
Log likelihood	-96.22362	Durbin-Watson stat	1.906434	

ADF Test Statistic	1.928338	1% Critical Value*	-3.6171
		5% Critical Value	-2.9422
		10% Critical Value	-2.6092

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GR)
 Method: Least Squares
 Date: 01/06/10 Time: 07:56
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GR(-1)	0.166110	0.086142	1.928338	0.0622
D(GR(-1))	-1.262586	0.254025	-4.970326	0.0000
C	-74.13438	207.6986	-0.356932	0.7233
R-squared	0.434100	Mean dependent var	182.9362	
Adjusted R-squared	0.400811	S.D. dependent var	617.2979	
S.E. of regression	477.8335	Akaike info criterion	15.25401	
Sum squared resid	7763045.	Schwarz criterion	15.38462	
Log likelihood	-279.1991	F-statistic	13.04062	
Durbin-Watson stat	1.429531	Prob(F-statistic)	0.000063	

ADF Test Statistic	0.929501	1% Critical Value*	-4.2242
		5% Critical Value	-3.5348
		10% Critical Value	-3.1988

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GR)
 Method: Least Squares
 Date: 01/06/10 Time: 07:55
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GR(-1)	0.214896	0.231195	0.929501	0.3594
D(GR(-1))	-1.286951	0.278941	-4.613701	0.0001
C	-91.99576	224.7613	-0.409304	0.6850
@TREND(1970)	-4.500956	19.74829	-0.227916	0.8211
R-squared	0.434989	Mean dependent var	182.9362	
Adjusted R-squared	0.383624	S.D. dependent var	617.2979	
S.E. of regression	484.6381	Akaike info criterion	15.30649	
Sum squared resid	7750844.	Schwarz criterion	15.48064	
Log likelihood	-279.1700	F-statistic	8.468644	
Durbin-Watson stat	1.456685	Prob(F-statistic)	0.000260	

ADF Test Statistic	4.106011	1% Critical Value*	-2.6261
		5% Critical Value	-1.9501
		10% Critical Value	-1.6205

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(GR)
 Method: Least Squares
 Date: 01/06/10 Time: 07:56
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GR(-1)	0.137860	0.033575	4.106011	0.0002
D(GR(-1))	-1.259814	0.250721	-5.024765	0.0000
R-squared	0.431979	Mean dependent var	182.9362	
Adjusted R-squared	0.415750	S.D. dependent var	617.2979	
S.E. of regression	471.8394	Akaike info criterion	15.20369	
Sum squared resid	7792134.	Schwarz criterion	15.29077	
Log likelihood	-279.2683	Durbin-Watson stat	1.403625	

ADF Test Statistic	-3.042651	1% Critical Value*	-3.6228	ADF Test Statistic	-3.215801	1% Critical Value*	-4.2324
		5% Critical Value	-2.9446			5% Critical Value	-3.5386
		10% Critical Value	-2.6105			10% Critical Value	-3.2009

*MacKinnon critical values for rejection of hypothesis of a unit root.

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DGR)
 Method: Least Squares
 Date: 01/06/10 Time: 08:02
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DGR(-1)	-1.367622	0.449484	-3.042651	0.0046
D(DGR(-1))	-0.715885	0.324207	-2.208109	0.0343
C	200.5746	94.43723	2.123893	0.0413
R-squared	0.712792	Mean dependent var	90.91528	
Adjusted R-squared	0.695385	S.D. dependent var	860.9793	
S.E. of regression	475.1911	Akaike info criterion	15.24497	
Sum squared resid	7451618.	Schwarz criterion	15.37693	
Log likelihood	-271.4094	F-statistic	40.94958	
Durbin-Watson stat	1.937252	Prob(F-statistic)	0.000000	

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DGR)
 Method: Least Squares
 Date: 01/06/10 Time: 08:01
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DGR(-1)	-1.455371	0.452569	-3.215801	0.0030
D(DGR(-1))	-0.632427	0.329587	-1.918848	0.0640
C	21.39787	176.7758	0.121045	0.9044
@TREND(1970)	9.272536	7.753309	1.195946	0.2405
R-squared	0.725080	Mean dependent var	90.91528	
Adjusted R-squared	0.699306	S.D. dependent var	860.9793	
S.E. of regression	472.1231	Akaike info criterion	15.25680	
Sum squared resid	7132807.	Schwarz criterion	15.43274	
Log likelihood	-270.6223	F-statistic	28.13244	
Durbin-Watson stat	1.941792	Prob(F-statistic)	0.000000	

ADF Test Statistic	-2.143091	1% Critical Value*	-2.6280
		5% Critical Value	-1.9504
		10% Critical Value	-1.6206

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DGR)
 Method: Least Squares
 Date: 01/06/10 Time: 08:02
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DGR(-1)	-0.850498	0.396856	-2.143091	0.0393
D(DGR(-1))	-1.047821	0.298357	-3.511972	0.0013
R-squared	0.673532	Mean dependent var	90.91528	
Adjusted R-squared	0.663930	S.D. dependent var	860.9793	
S.E. of regression	499.1232	Akaike info criterion	15.31754	
Sum squared resid	8470214.	Schwarz criterion	15.40551	
Log likelihood	-273.7156	Durbin-Watson stat	2.088510	

ADF Test Statistic	-4.966471	1% Critical Value*	-3.6422
		5% Critical Value	-2.9527
		10% Critical Value	-2.6148

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDGR)
 Method: Least Squares
 Date: 01/06/10 Time: 08:07
 Sample(adjusted): 1976 2008
 Included observations: 33 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDGR(-1)	-5.070322	1.020911	-4.966471	0.0000
D(DDGR(-1))	2.204090	0.901950	2.443695	0.0211
D(DDGR(-2))	1.073783	0.655821	1.637311	0.1128
D(DDGR(-3))	0.671439	0.346448	1.938065	0.0628
C	40.62085	82.35548	0.493238	0.6257
R-squared	0.885409	Mean dependent var	144.2052	
Adjusted R-squared	0.869039	S.D. dependent var	1290.218	
S.E. of regression	466.9116	Akaike info criterion	15.26888	
Sum squared resid	6104180.	Schwarz criterion	15.49563	
Log likelihood	-246.9366	F-statistic	54.08672	
Durbin-Watson stat	1.682814	Prob(F-statistic)	0.000000	

ADF Test Statistic	-5.593620	1% Critical Value*	-4.2605
		5% Critical Value	-3.5514
		10% Critical Value	-3.2081

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDGR)
 Method: Least Squares
 Date: 01/06/10 Time: 08:06
 Sample(adjusted): 1976 2008
 Included observations: 33 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDGR(-1)	-5.496792	0.982690	-5.593620	0.0000
D(DDGR(-1))	2.603239	0.870386	2.990901	0.0059
D(DDGR(-2))	1.305530	0.627526	2.080442	0.0471
D(DDGR(-3))	0.740251	0.328070	2.256380	0.0324
C	-341.8450	195.7209	-1.746594	0.0921
@TREND(1970)	17.65532	8.294211	2.128631	0.0426
R-squared	0.901876	Mean dependent var	144.2052	
Adjusted R-squared	0.883705	S.D. dependent var	1290.218	
S.E. of regression	439.9915	Akaike info criterion	15.17435	
Sum squared resid	5226999.	Schwarz criterion	15.44645	
Log likelihood	-244.3768	F-statistic	49.63227	
Durbin-Watson stat	1.826192	Prob(F-statistic)	0.000000	

ADF Test Statistic	-5.007690	1% Critical Value*	-2.6344
		5% Critical Value	-1.9514
		10% Critical Value	-1.6211

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDGR)
 Method: Least Squares
 Date: 01/06/10 Time: 08:07
 Sample(adjusted): 1976 2008
 Included observations: 33 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDGR(-1)	-5.021074	1.002673	-5.007690	0.0000
D(DDGR(-1))	2.151173	0.883785	2.434045	0.0213
D(DDGR(-2))	1.038462	0.643338	1.614177	0.1173
D(DDGR(-3))	0.657715	0.340794	1.929951	0.0634
R-squared	0.884413	Mean dependent var	144.2052	
Adjusted R-squared	0.872456	S.D. dependent var	1290.218	
S.E. of regression	460.7796	Akaike info criterion	15.21693	
Sum squared resid	6157218.	Schwarz criterion	15.39832	
Log likelihood	-247.0793	Durbin-Watson stat	1.681264	

ADF Test Statistic	-5.584252	1% Critical Value*	-3.6117
		5% Critical Value	-2.9399
		10% Critical Value	-2.6080

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(BT)
 Method: Least Squares
 Date: 01/05/10 Time: 11:29
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BT(-1)	-0.935826	0.167583	-5.584252	0.0000
C	-0.018733	0.074035	-0.253029	0.8017
R-squared	0.464157	Mean dependent var	0.010267	
Adjusted R-squared	0.449273	S.D. dependent var	0.613461	
S.E. of regression	0.455256	Akaike info criterion	1.315281	
Sum squared resid	7.461281	Schwarz criterion	1.401470	
Log likelihood	-22.99034	F-statistic	31.18387	
Durbin-Watson stat	1.992776	Prob(F-statistic)	0.000002	

ADF Test Statistic	-6.267374	1% Critical Value*	-4.2165
		5% Critical Value	-3.5312
		10% Critical Value	-3.1968

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(BT)
 Method: Least Squares
 Date: 01/05/10 Time: 11:29
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BT(-1)	-1.054915	0.168318	-6.267374	0.0000
C	-0.312040	0.150997	-2.066532	0.0462
@TREND(1970)	0.014852	0.006764	2.195663	0.0348
R-squared	0.529029	Mean dependent var	0.010267	
Adjusted R-squared	0.502117	S.D. dependent var	0.613461	
S.E. of regression	0.432863	Akaike info criterion	1.236868	
Sum squared resid	6.557978	Schwarz criterion	1.368151	
Log likelihood	-20.53849	F-statistic	19.65729	
Durbin-Watson stat	2.014122	Prob(F-statistic)	0.000002	

ADF Test Statistic	-5.652198	1% Critical Value*	-2.6243
		5% Critical Value	-1.9498
		10% Critical Value	-1.6204

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(BT)
 Method: Least Squares
 Date: 01/05/10 Time: 11:28
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BT(-1)	-0.932851	0.165042	-5.652198	0.0000
R-squared	0.463204	Mean dependent var	0.010267	
Adjusted R-squared	0.463204	S.D. dependent var	0.613461	
S.E. of regression	0.449461	Akaike info criterion	1.264426	
Sum squared resid	7.474550	Schwarz criterion	1.307521	
Log likelihood	-23.02410	Durbin-Watson stat	1.995445	

ADF Test Statistic	-2.674222	1% Critical Value*	-3.6171
		5% Critical Value	-2.9422
		10% Critical Value	-2.6092

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DTC)
 Method: Least Squares
 Date: 01/06/10 Time: 08:17
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DTC(-1)	-0.371831	0.139043	-2.674222	0.0113
C	0.518670	0.587324	0.883106	0.3832
R-squared	0.169661	Mean dependent var	-0.128919	
Adjusted R-squared	0.145937	S.D. dependent var	3.521867	
S.E. of regression	3.254752	Akaike info criterion	5.250647	
Sum squared resid	370.7694	Schwarz criterion	5.337724	
Log likelihood	-95.13698	F-statistic	7.151463	
Durbin-Watson stat	1.859279	Prob(F-statistic)	0.011307	

ADF Test Statistic	-2.543977	1% Critical Value*	-4.2242
		5% Critical Value	-3.5348
		10% Critical Value	-3.1988

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DTC)
 Method: Least Squares
 Date: 01/06/10 Time: 08:17
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DTC(-1)	-0.367479	0.144451	-2.543977	0.0157
C	0.656137	1.152738	0.569198	0.5730
@TREND(1970)	-0.007252	0.052064	-0.139296	0.8900
R-squared	0.170135	Mean dependent var	-0.128919	
Adjusted R-squared	0.121319	S.D. dependent var	3.521867	
S.E. of regression	3.301327	Akaike info criterion	5.304131	
Sum squared resid	370.5579	Schwarz criterion	5.434746	
Log likelihood	-95.12642	F-statistic	3.485252	
Durbin-Watson stat	1.868089	Prob(F-statistic)	0.041988	

ADF Test Statistic	-2.543461	1% Critical Value*	-2.6261
		5% Critical Value	-1.9501
		10% Critical Value	-1.6205

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DTC)
 Method: Least Squares
 Date: 01/06/10 Time: 08:18
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DTC(-1)	-0.321203	0.126286	-2.543461	0.0154
R-squared	0.151159	Mean dependent var	-0.128919	
Adjusted R-squared	0.151159	S.D. dependent var	3.521867	
S.E. of regression	3.244786	Akaike info criterion	5.218631	
Sum squared resid	379.0309	Schwarz criterion	5.262169	
Log likelihood	-95.54467	Durbin-Watson stat	1.910621	

ADF Test Statistic	-7.320472	1% Critical Value*	-4.2412
		5% Critical Value	-3.5426
		10% Critical Value	-3.2032

ADF Test Statistic	-7.194722	1% Critical Value*	-3.6289
		5% Critical Value	-2.9472
		10% Critical Value	-2.6118

*MacKinnon critical values for rejection of hypothesis of a unit root.

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDTC)
 Method: Least Squares
 Date: 01/06/10 Time: 08:24
 Sample(adjusted): 1974 2008
 Included observations: 35 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDTC(-1)	-1.713371	0.234052	-7.320472	0.0000
D(DDTC(-1))	0.508778	0.155467	3.272573	0.0026
C	1.168300	1.261982	0.925766	0.3617
@TREND(1970)	-0.062718	0.054306	-1.154904	0.2570

R-squared	0.678571	Mean dependent var	-0.041143
Adjusted R-squared	0.647465	S.D. dependent var	5.418029
S.E. of regression	3.216934	Akaike info criterion	5.281945
Sum squared resid	320.8087	Schwarz criterion	5.459699
Log likelihood	-88.43404	F-statistic	21.81481
Durbin-Watson stat	2.080862	Prob(F-statistic)	0.000000

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDTC)
 Method: Least Squares
 Date: 01/06/10 Time: 08:24
 Sample(adjusted): 1974 2008
 Included observations: 35 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDTC(-1)	-1.678790	0.233336	-7.194722	0.0000
D(DDTC(-1))	0.494528	0.155783	3.174466	0.0033
C	-0.146845	0.546751	-0.268578	0.7900

R-squared	0.664742	Mean dependent var	-0.041143
Adjusted R-squared	0.643788	S.D. dependent var	5.418029
S.E. of regression	3.233669	Akaike info criterion	5.266928
Sum squared resid	334.6117	Schwarz criterion	5.400244
Log likelihood	-89.17125	F-statistic	31.72439
Durbin-Watson stat	2.033910	Prob(F-statistic)	0.000000

ADF Test Statistic	-7.293897	1% Critical Value*	-2.6300
		5% Critical Value	-1.9507
		10% Critical Value	-1.6208

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDTC)
 Method: Least Squares
 Date: 01/06/10 Time: 08:23
 Sample(adjusted): 1974 2008
 Included observations: 35 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDTC(-1)	-1.677450	0.229980	-7.293897	0.0000
D(DDTC(-1))	0.494172	0.153572	3.217856	0.0029

R-squared	0.663986	Mean dependent var	-0.041143
Adjusted R-squared	0.653804	S.D. dependent var	5.418029
S.E. of regression	3.187884	Akaike info criterion	5.212037
Sum squared resid	335.3660	Schwarz criterion	5.300914
Log likelihood	-89.21065	Durbin-Watson stat	2.031273

ADF Test Statistic	3.505801	1% Critical Value*	-3.6117
		5% Critical Value	-2.9399
		10% Critical Value	-2.6080

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(PR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:06
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PR(-1)	0.226089	0.064490	3.505801	0.0012
C	-2.339493	1.698187	-1.377641	0.1768
R-squared	0.254514	Mean dependent var	2.583947	
Adjusted R-squared	0.233806	S.D. dependent var	6.723899	
S.E. of regression	5.885598	Akaike info criterion	6.434090	
Sum squared resid	1247.049	Schwarz criterion	6.520278	
Log likelihood	-120.2477	F-statistic	12.29064	
Durbin-Watson stat	1.517286	Prob(F-statistic)	0.001239	

ADF Test Statistic	2.320754	1% Critical Value*	-4.2165
		5% Critical Value	-3.5312
		10% Critical Value	-3.1968

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(PR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:07
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PR(-1)	0.200237	0.086281	2.320754	0.0263
C	-2.815890	2.008139	-1.402239	0.1697
@TREND(1970)	0.053300	0.116488	0.457562	0.6501
R-squared	0.258947	Mean dependent var	2.583947	
Adjusted R-squared	0.216601	S.D. dependent var	6.723899	
S.E. of regression	5.951312	Akaike info criterion	6.480757	
Sum squared resid	1239.634	Schwarz criterion	6.610040	
Log likelihood	-120.1344	F-statistic	6.115037	
Durbin-Watson stat	1.493697	Prob(F-statistic)	0.005277	

ADF Test Statistic	4.159008	1% Critical Value*	-2.6243
		5% Critical Value	-1.9498
		10% Critical Value	-1.6204

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(PR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:05
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PR(-1)	0.152616	0.036695	4.159008	0.0002
R-squared	0.215212	Mean dependent var	2.583947	
Adjusted R-squared	0.215212	S.D. dependent var	6.723899	
S.E. of regression	5.956584	Akaike info criterion	6.432835	
Sum squared resid	1312.793	Schwarz criterion	6.475929	
Log likelihood	-121.2239	Durbin-Watson stat	1.359198	

ADF Test Statistic	-2.556504	1% Critical Value*	-3.6171
		5% Critical Value	-2.9422
		10% Critical Value	-2.6092

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DPR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:12
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DPR(-1)	-0.465711	0.182167	-2.556504	0.0151
C	1.588472	1.078552	1.472783	0.1497
R-squared	0.157352	Mean dependent var	0.668378	
Adjusted R-squared	0.133276	S.D. dependent var	6.643039	
S.E. of regression	6.184537	Akaike info criterion	6.534520	
Sum squared resid	1338.698	Schwarz criterion	6.621596	
Log likelihood	-118.8886	F-statistic	6.535711	
Durbin-Watson stat	1.967307	Prob(F-statistic)	0.015069	

ADF Test Statistic	-3.044026	1% Critical Value*	-4.2242
		5% Critical Value	-3.5348
		10% Critical Value	-3.1988

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DPR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:13
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DPR(-1)	-0.560233	0.184043	-3.044026	0.0045
C	-1.711846	2.099607	-0.815317	0.4206
@TREND(1970)	0.174353	0.096206	1.812282	0.0788
R-squared	0.231580	Mean dependent var	0.668378	
Adjusted R-squared	0.186379	S.D. dependent var	6.643039	
S.E. of regression	5.992083	Akaike info criterion	6.496360	
Sum squared resid	1220.772	Schwarz criterion	6.626975	
Log likelihood	-117.1827	F-statistic	5.123324	
Durbin-Watson stat	1.953555	Prob(F-statistic)	0.011355	

ADF Test Statistic	-2.155883	1% Critical Value*	-2.6261
		5% Critical Value	-1.9501
		10% Critical Value	-1.6205

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DPR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:11
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DPR(-1)	-0.376184	0.174492	-2.155883	0.0379
R-squared	0.105129	Mean dependent var	0.668378	
Adjusted R-squared	0.105129	S.D. dependent var	6.643039	
S.E. of regression	6.284155	Akaike info criterion	6.540595	
Sum squared resid	1421.662	Schwarz criterion	6.584133	
Log likelihood	-120.0010	Durbin-Watson stat	2.031668	

ADF Test Statistic	-6.511856	1% Critical Value*	-3.6289
		5% Critical Value	-2.9472
		10% Critical Value	-2.6118

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDPR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:19
 Sample(adjusted): 1974 2008
 Included observations: 35 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDPR(-1)	-1.920823	0.294973	-6.511856	0.0000
D(DDPR(-1))	0.373234	0.175554	2.126034	0.0413
C	1.012752	1.036695	0.976904	0.3359
R-squared	0.716940	Mean dependent var	0.311429	
Adjusted R-squared	0.699249	S.D. dependent var	11.13202	
S.E. of regression	6.104881	Akaike info criterion	6.537871	
Sum squared resid	1192.626	Schwarz criterion	6.671186	
Log likelihood	-111.4127	F-statistic	40.52522	
Durbin-Watson stat	1.905250	Prob(F-statistic)	0.000000	

ADF Test Statistic	-6.753378	1% Critical Value*	-4.2412
		5% Critical Value	-3.5426
		10% Critical Value	-3.2032

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDPR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:19
 Sample(adjusted): 1974 2008
 Included observations: 35 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDPR(-1)	-1.974522	0.292375	-6.753378	0.0000
D(DDPR(-1))	0.398603	0.173491	2.297542	0.0285
C	-2.052944	2.347234	-0.874622	0.3885
@TREND(1970)	0.146851	0.101281	1.449933	0.1571
R-squared	0.734917	Mean dependent var	0.311429	
Adjusted R-squared	0.709264	S.D. dependent var	11.13202	
S.E. of regression	6.002374	Akaike info criterion	6.529398	
Sum squared resid	1116.883	Schwarz criterion	6.707152	
Log likelihood	-110.2645	F-statistic	28.64823	
Durbin-Watson stat	1.986066	Prob(F-statistic)	0.000000	

ADF Test Statistic	-6.452486	1% Critical Value*	-2.6300
		5% Critical Value	-1.9507
		10% Critical Value	-1.6208

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDPR)
 Method: Least Squares
 Date: 01/05/10 Time: 12:18
 Sample(adjusted): 1974 2008
 Included observations: 35 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDPR(-1)	-1.893293	0.293421	-6.452486	0.0000
D(DDPR(-1))	0.360252	0.174929	2.059413	0.0474
R-squared	0.708499	Mean dependent var	0.311429	
Adjusted R-squared	0.699665	S.D. dependent var	11.13202	
S.E. of regression	6.100656	Akaike info criterion	6.510115	
Sum squared resid	1228.194	Schwarz criterion	6.598992	
Log likelihood	-111.9270	Durbin-Watson stat	1.873938	

ADF Test Statistic	4.818897	1% Critical Value*	-3.6228
		5% Critical Value	-2.9446
		10% Critical Value	-2.6105

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(TRR)
 Method: Least Squares
 Date: 01/10/10 Time: 17:27
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRR(-1)	0.343161	0.071212	4.818897	0.0000
D(TRR(-1))	-0.510613	0.205482	-2.484954	0.0184
D(TRR(-2))	-0.607669	0.229130	-2.652075	0.0123
C	-27544.27	11691.88	-2.355847	0.0248

R-squared	0.425976	Mean dependent var	19874.77
Adjusted R-squared	0.372161	S.D. dependent var	46165.09
S.E. of regression	36579.52	Akaike info criterion	23.95680
Sum squared resid	4.28E+10	Schwarz criterion	24.13275
Log likelihood	-427.2225	F-statistic	7.915584
Durbin-Watson stat	1.760989	Prob(F-statistic)	0.000435

ADF Test Statistic	3.713662	1% Critical Value*	-4.2324
		5% Critical Value	-3.5386
		10% Critical Value	-3.2009

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(TRR)
 Method: Least Squares
 Date: 01/10/10 Time: 17:28
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRR(-1)	0.428998	0.115519	3.713662	0.0008
D(TRR(-1))	-0.566333	0.214113	-2.645019	0.0127
D(TRR(-2))	-0.688615	0.244953	-2.810808	0.0085
C	-20760.95	13737.67	-1.511242	0.1409
@TREND(1970)	-1015.225	1074.698	-0.944661	0.3521

R-squared	0.442037	Mean dependent var	19874.77
Adjusted R-squared	0.370042	S.D. dependent var	46165.09
S.E. of regression	36641.18	Akaike info criterion	23.98398
Sum squared resid	4.16E+10	Schwarz criterion	24.20391
Log likelihood	-426.7116	F-statistic	6.139819
Durbin-Watson stat	1.824162	Prob(F-statistic)	0.000928

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ADF Test Statistic	4.597884	1% Critical Value*	-2.6280
		5% Critical Value	-1.9504
		10% Critical Value	-1.6206

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(TRR)
 Method: Least Squares
 Date: 01/10/10 Time: 17:26
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TRR(-1)	0.208609	0.045371	4.597884	0.0001
D(TRR(-1))	-0.373558	0.210222	-1.776969	0.0848
D(TRR(-2))	-0.403194	0.226202	-1.782453	0.0839

R-squared	0.326418	Mean dependent var	19874.77
Adjusted R-squared	0.285595	S.D. dependent var	46165.09
S.E. of regression	39019.89	Akaike info criterion	24.06119
Sum squared resid	5.02E+10	Schwarz criterion	24.19315
Log likelihood	-430.1013	Durbin-Watson stat	1.628967

ADF Test Statistic	-0.418418	1% Critical Value*	-3.6353
		5% Critical Value	-2.9499
		10% Critical Value	-2.6133

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DTRR)

Method: Least Squares

Date: 01/10/10 Time: 17:38

Sample(adjusted): 1975 2008

Included observations: 34 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DTRR(-1)	-0.159163	0.380391	-0.418418	0.6787
D(DTRR(-1))	-0.688727	0.371033	-1.856241	0.0736
D(DTRR(-2))	-0.738000	0.322531	-2.288154	0.0296
D(DTRR(-3))	0.034303	0.265405	0.129247	0.8981
C	7525.024	8754.195	0.859591	0.3971

R-squared	0.567837	Mean dependent var	4078.724
Adjusted R-squared	0.508228	S.D. dependent var	59012.05
S.E. of regression	41383.04	Akaike info criterion	24.23418
Sum squared resid	4.97E+10	Schwarz criterion	24.45865
Log likelihood	-406.9811	F-statistic	9.526083
Durbin-Watson stat	1.792067	Prob(F-statistic)	0.000048

ADF Test Statistic	-1.614436	1% Critical Value*	-4.2505
		5% Critical Value	-3.5468
		10% Critical Value	-3.2056

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DTRR)

Method: Least Squares

Date: 01/10/10 Time: 17:34

Sample(adjusted): 1975 2008

Included observations: 34 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DTRR(-1)	-0.679726	0.421030	-1.614436	0.1176
D(DTRR(-1))	-0.311214	0.383221	-0.812100	0.4236
D(DTRR(-2))	-0.506691	0.317382	-1.596474	0.1216
D(DTRR(-3))	0.111218	0.249958	0.444946	0.6598
C	-25536.28	16533.39	-1.544528	0.1337
@TREND(1970)	1884.793	819.4135	2.300173	0.0291

R-squared	0.636519	Mean dependent var	4078.724
Adjusted R-squared	0.571612	S.D. dependent var	59012.05
S.E. of regression	38624.19	Akaike info criterion	24.11993
Sum squared resid	4.18E+10	Schwarz criterion	24.38929
Log likelihood	-404.0388	F-statistic	9.806597

ADF Test Statistic	0.088607	1% Critical Value*	-2.6321
		5% Critical Value	-1.9510
		10% Critical Value	-1.6209

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DTRR)

Method: Least Squares

Date: 01/10/10 Time: 17:37

Sample(adjusted): 1975 2008

Included observations: 34 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DTRR(-1)	0.027549	0.310916	0.088607	0.9300
D(DTRR(-1))	-0.830168	0.331101	-2.507299	0.0178
D(DTRR(-2))	-0.835374	0.300667	-2.778407	0.0093
D(DTRR(-3))	-0.011715	0.258816	-0.045266	0.9642

R-squared	0.556826	Mean dependent var	4078.724
Adjusted R-squared	0.512509	S.D. dependent var	59012.05
S.E. of regression	41202.56	Akaike info criterion	24.20052
Sum squared resid	5.09E+10	Schwarz criterion	24.38009
Log likelihood	-407.4088	Durbin-Watson stat	1.852272

ADF Test Statistic	-7.702065	1% Critical Value*	-4.2605	ADF Test Statistic	-6.481836	1% Critical Value*	-3.6422
		5% Critical Value	-3.5514			5% Critical Value	-2.9527
		10% Critical Value	-3.2081			10% Critical Value	-2.6148

*MacKinnon critical values for rejection of hypothesis of a unit root.

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DDTRR)

Method: Least Squares

Date: 01/10/10 Time: 17:43

Sample(adjusted): 1976 2008

Included observations: 33 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDTRR(-1)	-4.622683	0.600187	-7.702065	0.0000
D(DDTRR(-1))	2.704056	0.506793	5.335619	0.0000
D(DDTRR(-2))	1.375235	0.344462	3.992410	0.0005
D(DDTRR(-3))	0.760518	0.175494	4.333581	0.0002
C	-27014.39	14205.90	-1.901632	0.0679
@TREND(1970)	1677.623	609.3031	2.753347	0.0104

R-squared	0.899619	Mean dependent var	7485.468
Adjusted R-squared	0.881029	S.D. dependent var	91557.38
S.E. of regression	31580.06	Akaike info criterion	23.72141
Sum squared resid	2.69E+10	Schwarz criterion	23.99350
Log likelihood	-385.4032	F-statistic	48.39485

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DDTRR)

Method: Least Squares

Date: 01/10/10 Time: 17:46

Sample(adjusted): 1976 2008

Included observations: 33 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDTRR(-1)	-4.110417	0.634144	-6.481836	0.0000
D(DDTRR(-1))	2.273801	0.535767	4.244007	0.0002
D(DDTRR(-2))	1.096463	0.365898	2.996636	0.0057
D(DDTRR(-3))	0.666299	0.191287	3.483250	0.0016
C	8931.109	6224.313	1.434875	0.1624

R-squared	0.871434	Mean dependent var	7485.468
Adjusted R-squared	0.853068	S.D. dependent var	91557.38
S.E. of regression	35095.57	Akaike info criterion	23.90826
Sum squared resid	3.45E+10	Schwarz criterion	24.13501
Log likelihood	-389.4864	F-statistic	47.44678
Durbin-Watson stat	1.830750	Prob(F-statistic)	0.000000

ADF Test Statistic	-6.215837	1% Critical Value*	-2.6344
		5% Critical Value	-1.9514
		10% Critical Value	-1.6211

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DDTRR)

Method: Least Squares

Date: 01/10/10 Time: 17:45

Sample(adjusted): 1976 2008

Included observations: 33 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDTRR(-1)	-3.950914	0.635621	-6.215837	0.0000
D(DDTRR(-1))	2.130965	0.535963	3.975955	0.0004
D(DDTRR(-2))	1.002046	0.366445	2.734507	0.0105
D(DDTRR(-3))	0.629993	0.193036	3.263601	0.0028

R-squared	0.861981	Mean dependent var	7485.468
Adjusted R-squared	0.847703	S.D. dependent var	91557.38
S.E. of regression	35730.54	Akaike info criterion	23.91861
Sum squared resid	3.70E+10	Schwarz criterion	24.10001
Log likelihood	-390.6571	Durbin-Watson stat	1.745340

ADF Test Statistic	-2.508033	1% Critical Value*	-4.2165	ADF Test Statistic	-2.049859	1% Critical Value*	-3.6117
		5% Critical Value	-3.5312			5% Critical Value	-2.9399
		10% Critical Value	-3.1968			10% Critical Value	-2.6080

*MacKinnon critical values for rejection of hypothesis of a unit root.

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(INTR)
 Method: Least Squares
 Date: 01/10/10 Time: 20:27
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTR(-1)	-0.289778	0.115540	-2.508033	0.0169
C	-2.878405	1.742137	-1.652227	0.1074
@TREND(1970)	0.103746	0.071162	1.457882	0.1538

R-squared	0.155786	Mean dependent var	0.114474
Adjusted R-squared	0.107546	S.D. dependent var	4.587859
S.E. of regression	4.334142	Akaike info criterion	5.846581
Sum squared resid	657.4674	Schwarz criterion	5.975864
Log likelihood	-108.0850	F-statistic	3.229351
Durbin-Watson stat	1.920191	Prob(F-statistic)	0.051632

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(INTR)
 Method: Least Squares
 Date: 01/10/10 Time: 20:26
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTR(-1)	-0.216702	0.105715	-2.049859	0.0477
C	-0.610793	0.796852	-0.766507	0.4484

R-squared	0.104520	Mean dependent var	0.114474
Adjusted R-squared	0.079646	S.D. dependent var	4.587859
S.E. of regression	4.401367	Akaike info criterion	5.852903
Sum squared resid	697.3930	Schwarz criterion	5.939092
Log likelihood	-109.2052	F-statistic	4.201922
Durbin-Watson stat	1.944931	Prob(F-statistic)	0.047716

ADF Test Statistic	-1.918627	1% Critical Value*	-2.6243
		5% Critical Value	-1.9498
		10% Critical Value	-1.6204

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(INTR)
 Method: Least Squares
 Date: 01/10/10 Time: 20:25
 Sample(adjusted): 1971 2008
 Included observations: 38 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INTR(-1)	-0.180723	0.094194	-1.918627	0.0628

R-squared	0.089906	Mean dependent var	0.114474
Adjusted R-squared	0.089906	S.D. dependent var	4.587859
S.E. of regression	4.376765	Akaike info criterion	5.816460
Sum squared resid	708.7747	Schwarz criterion	5.859555
Log likelihood	-109.5127	Durbin-Watson stat	1.983729

ADF Test Statistic	-6.455247	1% Critical Value*	-3.6171
		5% Critical Value	-2.9422
		10% Critical Value	-2.6092

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DINTR)
 Method: Least Squares
 Date: 01/10/10 Time: 20:33
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DINTR(-1)	-1.085397	0.168142	-6.455247	0.0000
C	0.075746	0.771211	0.098217	0.9223
R-squared	0.543499	Mean dependent var	-0.079730	
Adjusted R-squared	0.530456	S.D. dependent var	6.842645	
S.E. of regression	4.688803	Akaike info criterion	5.980770	
Sum squared resid	769.4705	Schwarz criterion	6.067846	
Log likelihood	-108.6442	F-statistic	41.67021	
Durbin-Watson stat	2.027427	Prob(F-statistic)	0.000000	

ADF Test Statistic	-6.413658	1% Critical Value*	-4.2242
		5% Critical Value	-3.5348
		10% Critical Value	-3.1988

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DINTR)
 Method: Least Squares
 Date: 01/10/10 Time: 20:34
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DINTR(-1)	-1.092639	0.170361	-6.413658	0.0000
C	-0.724990	1.655786	-0.437852	0.6643
@TREND(1970)	0.040089	0.073148	0.548047	0.5872
R-squared	0.547497	Mean dependent var	-0.079730	
Adjusted R-squared	0.520879	S.D. dependent var	6.842645	
S.E. of regression	4.736381	Akaike info criterion	6.026029	
Sum squared resid	762.7325	Schwarz criterion	6.156644	
Log likelihood	-108.4815	F-statistic	20.56879	
Durbin-Watson stat	2.033909	Prob(F-statistic)	0.000001	

ADF Test Statistic	-6.545996	1% Critical Value*	-2.6261
		5% Critical Value	-1.9501
		10% Critical Value	-1.6205

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DINTR)
 Method: Least Squares
 Date: 01/10/10 Time: 20:32
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DINTR(-1)	-1.084881	0.165732	-6.545996	0.0000
R-squared	0.543374	Mean dependent var	-0.079730	
Adjusted R-squared	0.543374	S.D. dependent var	6.842645	
S.E. of regression	4.623859	Akaike info criterion	5.926991	
Sum squared resid	769.6826	Schwarz criterion	5.970530	
Log likelihood	-108.6493	Durbin-Watson stat	2.027691	

ADF Test Statistic	0.981637	1% Critical Value*	-4.2242	ADF Test Statistic	2.122227	1% Critical Value*	-3.6171
		5% Critical Value	-3.5348			5% Critical Value	-2.9422
		10% Critical Value	-3.1988			10% Critical Value	-2.6092

*MacKinnon critical values for rejection of hypothesis of a unit root.

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(M2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:43
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(M2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:42
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
M2R(-1)	0.050118	0.051055	0.981637	0.3334
D(M2R(-1))	0.561777	0.180746	3.108104	0.0039
C	-7833.832	9268.605	-0.845201	0.4041
@TREND(1970)	264.4943	747.5205	0.353829	0.7257

Variable	Coefficient	Std. Error	t-Statistic	Prob.
M2R(-1)	0.064524	0.030404	2.122227	0.0412
D(M2R(-1))	0.548720	0.174647	3.141872	0.0035
C	-6651.163	8532.990	-0.779465	0.4411

R-squared	0.540782	Mean dependent var	24498.35
Adjusted R-squared	0.499035	S.D. dependent var	36798.69
S.E. of regression	26045.70	Akaike info criterion	23.27490
Sum squared resid	2.24E+10	Schwarz criterion	23.44905
Log likelihood	-426.5856	F-statistic	12.95378
Durbin-Watson stat	1.987518	Prob(F-statistic)	0.000009

R-squared	0.539040	Mean dependent var	24498.35
Adjusted R-squared	0.511925	S.D. dependent var	36798.69
S.E. of regression	25708.44	Akaike info criterion	23.22463
Sum squared resid	2.25E+10	Schwarz criterion	23.35525
Log likelihood	-426.6557	F-statistic	19.87957
Durbin-Watson stat	1.976739	Prob(F-statistic)	0.000002

ADF Test Statistic	2.532658	1% Critical Value*	-2.6261
		5% Critical Value	-1.9501
		10% Critical Value	-1.6205

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(M2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:41
 Sample(adjusted): 1972 2008
 Included observations: 37 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
M2R(-1)	0.045452	0.017946	2.532658	0.0160
D(M2R(-1))	0.585896	0.167064	3.507008	0.0013

R-squared	0.530803	Mean dependent var	24498.35
Adjusted R-squared	0.517397	S.D. dependent var	36798.69
S.E. of regression	25563.91	Akaike info criterion	23.18829
Sum squared resid	2.29E+10	Schwarz criterion	23.27537
Log likelihood	-426.9833	Durbin-Watson stat	1.984957

ADF Test Statistic	-0.763864	1% Critical Value*	-3.6228
		5% Critical Value	-2.9446
		10% Critical Value	-2.6105

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DM2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:48
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DM2R(-1)	-0.118512	0.155148	-0.763864	0.4504
D(DM2R(-1))	-0.263786	0.195813	-1.347133	0.1871
C	6234.172	5527.957	1.127753	0.2676

R-squared	0.108136	Mean dependent var	3209.499
Adjusted R-squared	0.054084	S.D. dependent var	27776.49
S.E. of regression	27014.92	Akaike info criterion	23.32582
Sum squared resid	2.41E+10	Schwarz criterion	23.45778
Log likelihood	-416.8648	F-statistic	2.000580
Durbin-Watson stat	1.948123	Prob(F-statistic)	0.151331

ADF Test Statistic	-1.547463	1% Critical Value*	-4.2324
		5% Critical Value	-3.5386
		10% Critical Value	-3.2009

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DM2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:49
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DM2R(-1)	-0.263773	0.170455	-1.547463	0.1316
D(DM2R(-1))	-0.203726	0.192405	-1.058837	0.2976
C	-8338.266	9704.123	-0.859250	0.3966
@TREND(1970)	858.1859	476.8124	1.799840	0.0813

R-squared	0.190122	Mean dependent var	3209.499
Adjusted R-squared	0.114196	S.D. dependent var	27776.49
S.E. of regression	26142.45	Akaike info criterion	23.28495
Sum squared resid	2.19E+10	Schwarz criterion	23.46089
Log likelihood	-415.1291	F-statistic	2.504036
Durbin-Watson stat	1.958883	Prob(F-statistic)	0.076832

ADF Test Statistic	-0.137582	1% Critical Value*	-2.6280
		5% Critical Value	-1.9504
		10% Critical Value	-1.6206

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DM2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:47
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DM2R(-1)	-0.017498	0.127186	-0.137582	0.8914
D(DM2R(-1))	-0.306625	0.192860	-1.589888	0.1211

R-squared	0.073763	Mean dependent var	3209.499
Adjusted R-squared	0.046521	S.D. dependent var	27776.49
S.E. of regression	27122.70	Akaike info criterion	23.30808
Sum squared resid	2.50E+10	Schwarz criterion	23.39606
Log likelihood	-417.5455	Durbin-Watson stat	1.994603

ADF Test Statistic	-7.539771	1% Critical Value*	-3.6228
		5% Critical Value	-2.9446
		10% Critical Value	-2.6105

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDM2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:56
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDM2R(-1)	-1.327507	0.176067	-7.539771	0.0000
C	3796.364	4485.932	0.846282	0.4033
R-squared	0.625749	Mean dependent var	1417.583	
Adjusted R-squared	0.614742	S.D. dependent var	43256.48	
S.E. of regression	26848.94	Akaike info criterion	23.28779	
Sum squared resid	2.45E+10	Schwarz criterion	23.37577	
Log likelihood	-417.1803	F-statistic	56.84814	
Durbin-Watson stat	2.041079	Prob(F-statistic)	0.000000	

ADF Test Statistic	-7.635912	1% Critical Value*	-4.2324
		5% Critical Value	-3.5386
		10% Critical Value	-3.2009

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDM2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:57
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDM2R(-1)	-1.338204	0.175251	-7.635912	0.0000
C	-6615.396	9841.640	-0.672184	0.5061
@TREND(1970)	508.8258	428.7602	1.186738	0.2438
R-squared	0.641067	Mean dependent var	1417.583	
Adjusted R-squared	0.619314	S.D. dependent var	43256.48	
S.E. of regression	26689.15	Akaike info criterion	23.30156	
Sum squared resid	2.35E+10	Schwarz criterion	23.43352	
Log likelihood	-416.4280	F-statistic	29.46962	
Durbin-Watson stat	2.113661	Prob(F-statistic)	0.000000	

ADF Test Statistic	-7.529410	1% Critical Value*	-2.6280
		5% Critical Value	-1.9504
		10% Critical Value	-1.6206

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(DDM2R)
 Method: Least Squares
 Date: 01/10/10 Time: 20:55
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDM2R(-1)	-1.317027	0.174918	-7.529410	0.0000
R-squared	0.617866	Mean dependent var	1417.583	
Adjusted R-squared	0.617866	S.D. dependent var	43256.48	
S.E. of regression	26739.86	Akaike info criterion	23.25308	
Sum squared resid	2.50E+10	Schwarz criterion	23.29707	
Log likelihood	-417.5555	Durbin-Watson stat	2.011242	

:BCDPIB PIBR :

Vector Autoregression Estimates
 Date: 01/20/10 Time: 17:44
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting
 endpoints

Standard errors in () & t-statistics in []

BCDPIB	DGPIBR	
0.009095 (0.01443) [0.63044]	-0.629666 (0.11045) [-5.70085]	DGPIBR(-1)
0.015581 (0.01345) [1.15800]	-0.249805 (0.10301) [-2.42505]	DGPIBR(-2)
-0.660041 (0.16417) [-4.02043]	0.002061 (1.25689) [0.00164]	BCDPIB(-1)
-0.358189 (0.16350) [-2.19078]	-0.286826 (1.25174) [-0.22914]	BCDPIB(-2)
0.017796 (0.08810) [0.20201]	-0.452616 (0.67445) [-0.67109]	C
0.379775	0.547655	R-squared
0.299745	0.489287	Adj. R-squared
8.630406	505.8566	Sum sq. resids
0.527636	4.039549	S.E. equation
4.745455	9.382925	F-statistic
-25.37369	-98.65100	Log likelihood
1.687427	5.758389	Akaike AIC
1.907361	5.978322	Schwarz SC
0.008840	-0.655833	Mean dependent
0.630531	5.652552	S.D. dependent
4.461541	Determinant Residual Covariance	
-129.0825	Log Likelihood (d.f. adjusted)	
7.726804	Akaike Information Criteria	
8.166670	Schwarz Criteria	

:(TRr) (M2r) (Ph) (Gr)

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Vector Autoregression Estimates
 Date: 01/23/10 Time: 11:31
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints
 Standard errors in () & t-statistics in []

DDTRR	DDPH	DDM2R	DDGR	
-42.56696 (20.1513) [-2.11236]	-0.001059 (0.00285) [-0.37155]	-26.88711 (12.4572) [-2.15835]	-1.644171 (0.24687) [-6.66009]	DDGR(-1)
-0.602505 (0.30376) [-1.98350]	-8.36E-05 (4.3E-05) [-1.94582]	-0.173211 (0.18778) [-0.92242]	-0.001945 (0.00372) [-0.52273]	DDM2R(-1)
2157.077 (1481.88) [1.45563]	-0.310603 (0.20954) [-1.48228]	-645.9339 (916.076) [-0.70511]	-0.690210 (18.1542) [-0.03802]	DDPH(-1)
-0.634381 (0.22352) [-2.83811]	-3.47E-05 (3.2E-05) [-1.09894]	0.167289 (0.13818) [1.21068]	0.003765 (0.00274) [1.37494]	DDTRR(-1)
3684.467 (7122.22) [0.51732]	0.909037 (1.00711) [0.90262]	3020.259 (4402.85) [0.68598]	46.91776 (87.2527) [0.53772]	C
0.521892	0.299280	0.212404	0.678069	R-squared
0.460201	0.208864	0.110779	0.636529	Adj. R-squared
5.57E+10	1112.794	2.13E+10	8352508.	Sum sq. resids
42370.58	5.991377	26192.82	519.0720	S.E. equation
8.459736	3.310046	2.090071	16.32345	F-statistic
-431.9418	-112.8418	-414.6269	-273.4637	Log likelihood
24.27454	6.546765	23.31260	15.47021	Akaike AIC
24.49448	6.766699	23.53254	15.69014	Schwarz SC
4929.382	0.689722	3209.499	90.91528	Mean dependent
57669.79	6.735984	27776.49	860.9793	S.D. dependent
		4.27E+24		Determinant Residual Covariance
		-1225.158		Log Likelihood (d.f. adjusted)
		69.17544		Akaike Information Criteria

Response of DGPIBR to Cholesky (d.f. adjusted) One S.D. Innovations

Period	DGPIBR	DBCDPIB
1	4.039549 (0.47607)	0.000000 (0.00000)
2	-2.543711 (0.53691)	0.001078 (0.65721)
3	0.613017 (0.42744)	-0.151368 (0.77089)
4	0.225547 (0.39976)	0.194118 (0.73265)
5	-0.298191 (0.28761)	-0.095841 (0.45735)
6	0.151772 (0.15959)	-0.015702 (0.22121)
7	-0.036748 (0.13484)	0.056285 (0.21580)
8	-0.011957 (0.09631)	-0.037090 (0.15297)
9	0.021404 (0.05016)	0.005398 (0.06422)
10	-0.015182 (0.04083)	0.010358 (0.04336)

Cholesky Ordering: DGPIBR DBCD...
Standard Errors: Analytic

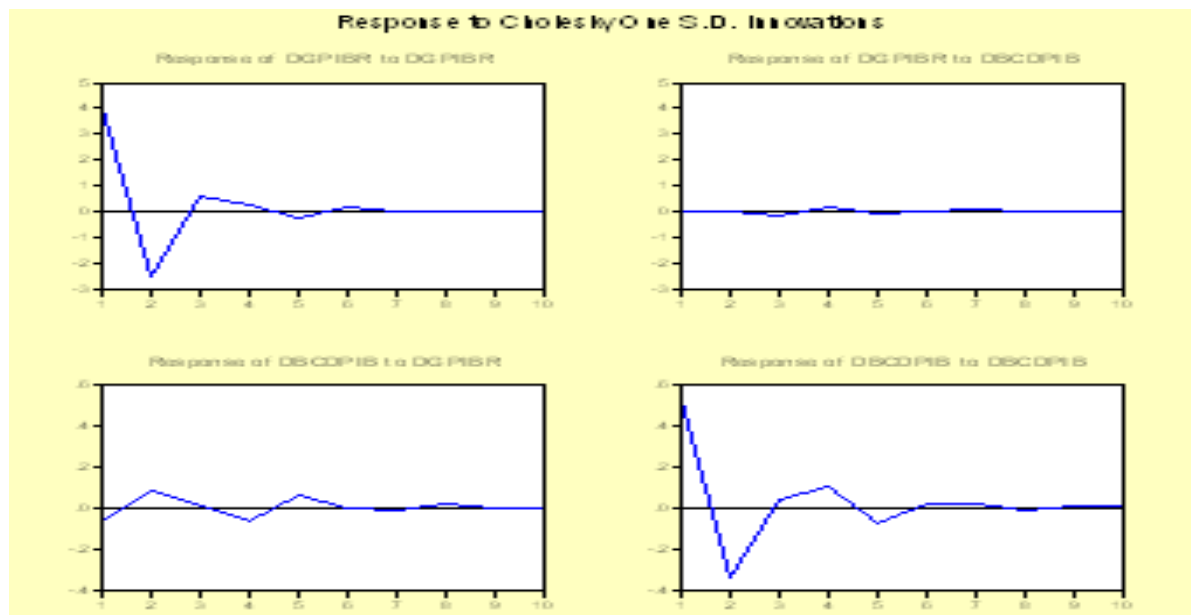
Response of DBCDPIB to Cholesky (d.f. adjusted) One S.D. Innovations

Period	DGPIBR	DBCDPIB
1	-0.070620 (0.08754)	0.522889 (0.06162)
2	0.083353 (0.08229)	-0.345128 (0.09499)
3	0.010083 (0.05704)	0.040515 (0.10328)
4	-0.070569 (0.05718)	0.095519 (0.09950)
5	0.054569 (0.04494)	-0.078152 (0.06778)
6	-0.009939 (0.02654)	0.019522 (0.04363)
7	-0.016252 (0.02426)	0.013472 (0.04346)
8	0.016317 (0.01795)	-0.015617 (0.02901)
9	-0.005630 (0.00986)	0.006022 (0.01390)
10	-0.002120 (0.00870)	0.001090 (0.01319)

Cholesky Ordering: DGPIBR DBCD...
Standard Errors: Analytic

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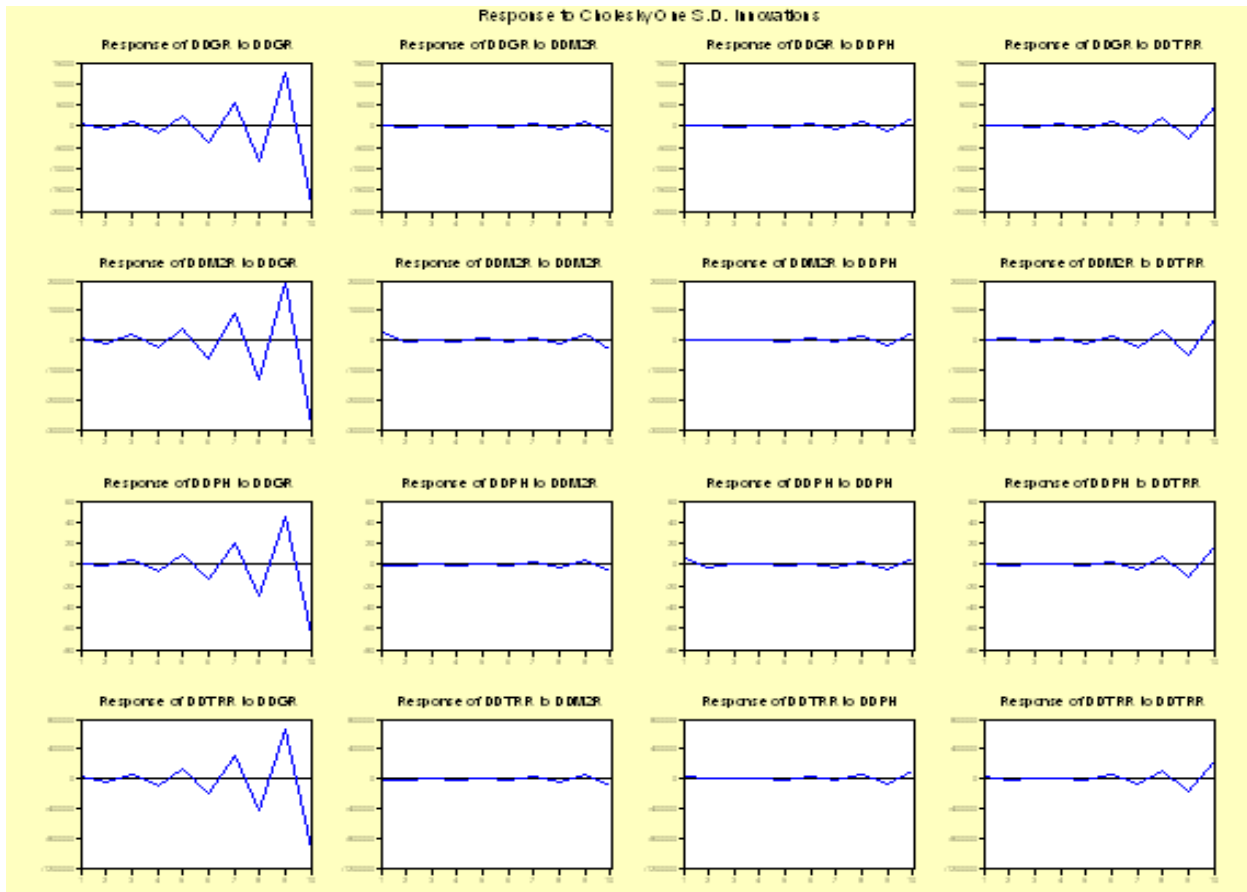
:(TRr) (M2r) (Ph) (Gr)

-2

Response of DDGR:					Response of DDM2R:				
Period	DDGR	DDM2R	DDPH	DDTRR	Period	DDGR	DDM2R	DDPH	DDTRR
1	519.0720 (61.1732)	0.000000 (0.000000)	0.000000 (0.000000)	0.000000 (0.000000)	1	6003.995 (4307.74)	25495.41 (3004.66)	0.000000 (0.000000)	0.000000 (0.000000)
2	-787.2606 (143.510)	-93.75150 (93.7236)	80.37559 (82.8649)	100.7927 (74.2631)	2	-12014.49 (5672.94)	-5675.904 (4678.16)	-15.84674 (4134.55)	4478.449 (3736.59)
3	1178.916 (356.966)	127.5327 (164.345)	-136.5249 (166.601)	-237.7310 (161.679)	3	18319.23 (10444.6)	2668.710 (3456.28)	-760.7932 (3813.34)	-5726.149 (4022.57)
4	-1750.551 (773.765)	-174.4872 (260.838)	195.4654 (269.832)	408.4328 (283.137)	4	-27255.36 (18275.1)	-2928.855 (4601.64)	1969.561 (4732.47)	7424.465 (5487.26)
5	2592.025 (1526.66)	251.6620 (404.647)	-276.4572 (410.691)	-636.2815 (472.023)	5	40427.77 (31629.1)	4093.856 (6769.73)	-3579.887 (6851.30)	-10394.84 (8773.31)
6	-3835.485 (2835.77)	-370.8895 (624.581)	397.2706 (614.775)	957.9005 (783.246)	6	-59904.70 (54189.0)	-5938.875 (10264.8)	5751.758 (10134.8)	15124.65 (14305.0)
7	5675.234 (5058.11)	549.5065 (965.000)	-579.1081 (920.394)	-1425.068 (1303.22)	7	88710.60 (91797.5)	8700.424 (15757.8)	-8793.348 (15112.1)	-22301.15 (23316.7)
8	-8398.024 (8766.90)	-814.4421 (1494.75)	851.2288 (1386.21)	2111.890 (2167.74)	8	-131323.5 (153751.)	-12811.00 (24324.5)	13174.38 (22715.6)	32999.59 (37978.5)
9	12427.83 (14876.2)	1206.451 (2320.71)	-1256.259 (2103.03)	-3126.212 (3591.51)	9	194373.7 (254798.)	18915.71 (37660.5)	-19582.28 (34403.9)	-48859.05 (61765.7)
10	-18391.95 (24835.8)	-1786.315 (3608.88)	1857.230 (3212.14)	4626.489 (5914.62)	10	-287674.2 (418243.)	-27967.00 (58409.0)	29021.62 (52446.4)	72333.62 (100170.)

Response of DDTRR:					Response of DDPH:				
Period	DDGR	DDM2R	DDPH	DDTRR	Period	DDGR	DDM2R	DDPH	DDTRR
1	20822.57 (6621.67)	-11937.52 (5987.10)	22416.72 (5185.26)	26770.75 (3154.96)	1	0.776516 (0.99436)	-1.141276 (0.98096)	5.830189 (0.68709)	0.000000 (0.00000)
2	-37247.18 (10268.5)	-10250.00 (8011.58)	-1644.568 (7164.04)	-16982.84 (6309.71)	2	-2.015799 (1.34952)	-1.361728 (1.15263)	-2.589502 (0.99117)	-0.929864 (0.85321)
3	60030.73 (21266.9)	10975.52 (8734.20)	-7954.270 (8915.89)	1779.071 (8973.11)	3	3.757502 (2.50735)	1.352620 (0.86699)	0.777659 (0.93958)	0.397695 (0.99003)
4	-91197.41 (41224.0)	-11081.54 (13184.5)	12993.34 (13413.8)	13298.77 (14322.3)	4	-6.031441 (4.22002)	-1.159421 (0.98706)	0.242870 (1.00688)	0.544950 (1.21546)
5	135780.7 (76959.6)	13720.99 (20735.6)	-17225.87 (21065.8)	-29120.00 (24047.3)	5	9.172350 (6.92547)	1.174550 (1.46394)	-0.898306 (1.47322)	-1.684123 (1.90020)
6	-201043.7 (139666.)	-19349.79 (32186.4)	22914.88 (32279.7)	48187.88 (40053.8)	6	-13.68830 (11.4031)	-1.450003 (2.25694)	1.469235 (2.28844)	3.076979 (3.12294)
7	297369.3 (247159.)	28513.20 (49656.7)	-31743.56 (48617.0)	-73819.75 (66151.8)	7	20.30215 (18.8861)	2.011503 (3.47263)	-2.153599 (3.48054)	-4.907725 (5.05632)
8	-439878.0 (427929.)	-42382.12 (76638.6)	45440.92 (72982.4)	110340.8 (108995.)	8	-30.05755 (31.3135)	-2.924101 (5.33790)	3.119547 (5.22682)	7.461062 (8.11734)
9	650814.9 (727477.)	62965.89 (118564.)	-66269.58 (110010.)	-163683.1 (179336.)	9	44.48171 (51.7533)	4.313330 (8.21784)	-4.549599 (7.84179)	-11.14398 (13.0263)
10	-963040.0 (1218153)	-93391.89 (183850.)	97499.85 (166898.)	242310.1 (294226.)	10	-65.82469 (85.0657)	-6.385038 (12.6805)	6.681619 (11.8182)	16.54009 (20.9359)

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:(BCDPIB) (PIBR)

Variance Decomposition of DGPIBR

Period	S.E.	DBCPIB	DGPIBR
1	0.527636	1.791373	98.20863
2	0.635973	1.794570	98.20543
3	0.637342	1.995950	98.00405
4	0.648312	2.101364	97.89864
5	0.655282	2.105518	97.89448
6	0.655648	2.108924	97.89108
7	0.655987	2.124260	97.87574
8	0.656376	2.129403	97.87060
9	0.656428	2.129385	97.87062
10	0.656432	2.130000	97.87000

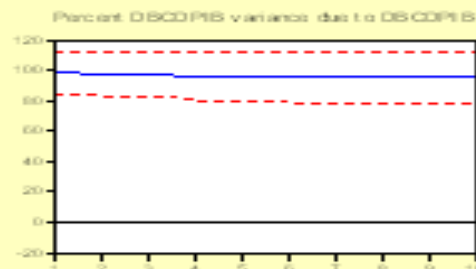
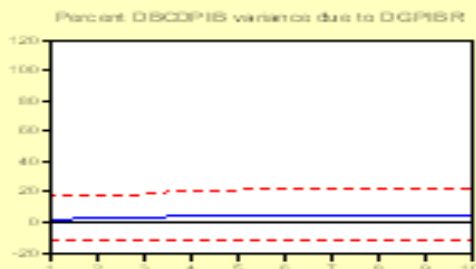
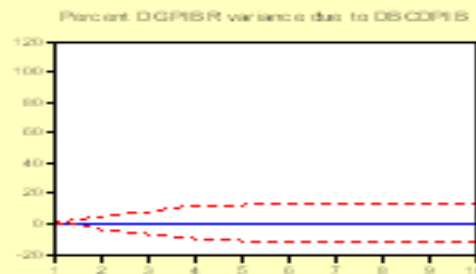
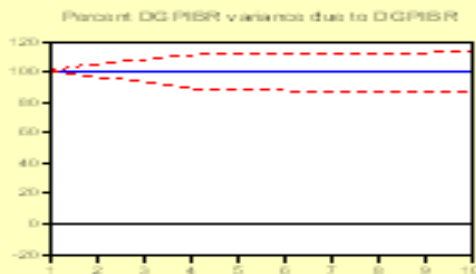
Cholesky Ordering: DBCPIB DGPIBR

Variance Decomposition of DBCPIB

Period	S.E.	DBCPIB	DGPIBR
1	0.527636	100.0000	0.000000
2	0.635973	99.67223	0.327772
3	0.637342	99.61514	0.384860
4	0.648312	98.85100	1.148998
5	0.655282	98.43223	1.567768
6	0.655648	98.42180	1.578201
7	0.655987	98.37590	1.624103
8	0.656376	98.33180	1.668196
9	0.656428	98.32678	1.673221
10	0.656432	98.32591	1.674086

Cholesky Ordering: DBCPIB DGPIBR

Variance Decomposition ± 2 S.E.



:(TRr) (M2r) (Ph) (Gr)**-2**

Variance Decomposition of DDGR:

Period	S.E.	DDGR	DDM2R	DDPH	DDTRR
1	519.0720	100.0000	0.000000	0.000000	0.000000
2	956.3596	97.22195	0.960979	0.706327	1.110748
3	1547.865	95.12379	1.045706	1.047599	2.782902
4	2386.585	93.81475	0.974400	1.111454	4.099392
5	3599.860	93.07882	0.916996	1.078283	4.925897
6	5374.281	92.69508	0.887697	1.030224	5.386994
7	7984.943	92.50617	0.875715	0.992678	5.625435
8	11837.83	92.41727	0.871783	0.968726	5.742225
9	17532.60	92.37686	0.870936	0.955035	5.797163
10	25955.74	92.35899	0.871027	0.947752	5.822235

Variance Decomposition of DDM2R:

Period	S.E.	DDGR	DDM2R	DDPH	DDTRR
1	26192.82	5.254314	94.74569	0.000000	0.000000
2	29710.01	20.43720	77.29055	2.84E-05	2.272217
3	35479.13	40.99168	54.76415	0.046002	4.198174
4	45488.50	60.83719	33.72951	0.215456	5.217852
5	61977.71	75.32080	18.60577	0.449694	5.623728
6	87902.89	83.88628	9.705836	0.651703	5.756184
7	127463.1	88.33339	5.081966	0.785872	5.798767
8	186867.3	90.48633	2.834476	0.862684	5.816514
9	275370.6	91.49324	1.777137	0.902966	5.826659
10	406745.6	91.95661	1.287302	0.922960	5.833131

Variance Decomposition of DDPH:

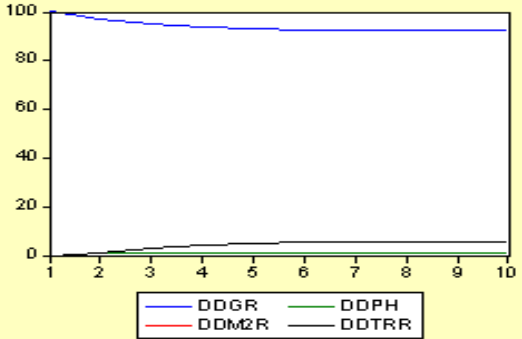
Period	S.E.	DDGR	DDM2R	DDPH	DDTRR
1	5.991377	1.679763	3.628507	94.69173	0.000000
2	7.027411	9.449162	6.392316	82.40768	1.750846
3	8.129934	28.42123	7.544190	62.48712	1.547463
4	10.20658	52.95310	6.076979	39.70303	1.266894
5	13.90428	72.05098	3.988131	21.81116	2.149728
6	19.86020	82.82003	2.487839	11.23805	3.454081
7	28.97197	88.02294	1.651094	5.833384	4.492583
8	42.62371	90.39610	1.233459	3.230744	5.139700
9	62.91975	91.46293	1.035998	2.005468	5.495605
10	93.00953	91.94337	0.945381	1.433842	5.677410

Variance Decomposition of DDTRR:

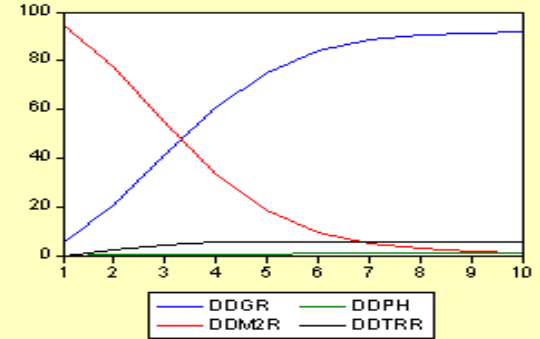
Period	S.E.	DDGR	DDM2R	DDPH	DDTRR
1	42370.58	24.15127	7.937784	27.99081	39.92014
2	59823.09	50.88104	6.917587	14.11685	28.08452
3	85845.14	73.61018	4.994021	7.714135	13.68166
4	127101.7	85.06174	3.038280	4.564027	7.335956
5	189536.8	89.57187	1.890355	2.878399	5.659377
6	282071.5	91.24256	1.324097	1.959588	5.473756
7	418644.1	91.87631	1.064979	1.464536	5.594177
8	620315.8	92.13236	0.951880	1.203681	5.712081
9	918422.7	92.24392	0.904263	1.069747	5.782070
10	1359371.	92.29580	0.884767	1.002741	5.816691

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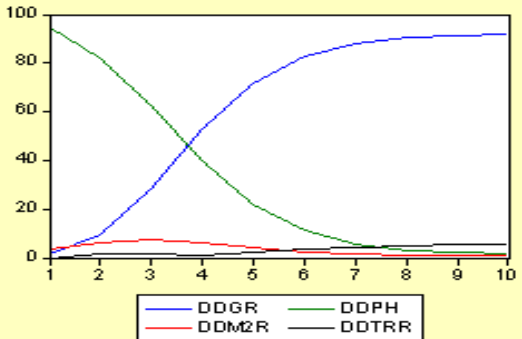
Variance Decomposition of DDGR



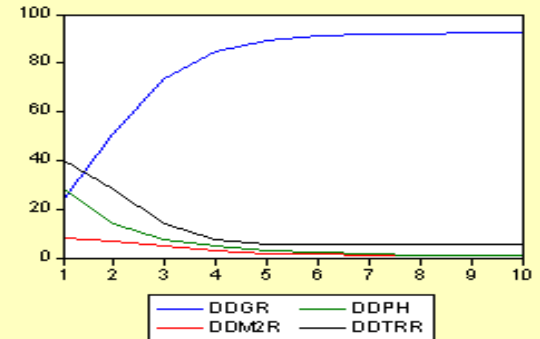
Variance Decomposition of DDM2R



Variance Decomposition of DDPH



Variance Decomposition of DDTRR



:(BCDPIB) (PIBR)

-1

Pairwise Granger Causality Tests
Date: 01/20/10 Time: 19:33
Sample: 1970 2008
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
DGPIBR does not Granger Cause DBCDPIB	37	0.08792	0.76865
DBCDPIB does not Granger Cause DGPIBR		0.00445	0.94722

:(TRr) (M2r) (Ph) (Gr)

-2

Pairwise Granger Causality Tests
Date: 01/23/10 Time: 12:03
Sample: 1970 2008
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
DDM2R does not Granger Cause DDGR	36	1.19803	0.28164
DDGR does not Granger Cause DDM2R		3.29867	0.07843
DDPH does not Granger Cause DDGR	36	1.58013	0.21757
DDGR does not Granger Cause DDPH		2.64051	0.11368
DDTRR does not Granger Cause DDGR	36	4.36200	0.04454
DDGR does not Granger Cause DDTRR		13.8133	0.00075
DDPH does not Granger Cause DDM2R	36	0.06114	0.80623
DDM2R does not Granger Cause DDPH		4.23715	0.04752
DDTRR does not Granger Cause DDM2R	36	0.02184	0.88341
DDM2R does not Granger Cause DDTRR		7.77321	0.00873
DDTRR does not Granger Cause DDPH	36	1.64452	0.20864
DDPH does not Granger Cause DDTRR		5.78647	0.02191

: -2 :

Dependent Variable: DGPIBR
 Method: Least Squares
 Date: 01/20/10 Time: 21:48
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DGPIBR(-1)	-0.633322	0.105459	-6.005392	0.0000
DGPIBR(-2)	-0.249921	0.098387	-2.540185	0.0158
R-squared	0.539973	Mean dependent var	-0.655833	
Adjusted R-squared	0.526443	S.D. dependent var	5.652552	
S.E. of regression	3.889831	Akaike info criterion	5.608561	
Sum squared resid	514.4467	Schwarz criterion	5.696534	
Log likelihood	-98.95410	Durbin-Watson stat	1.865408	

Dependent Variable: DBCDPIB
 Method: Least Squares
 Date: 01/20/10 Time: 22:02
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DBC DPIB(-1)	-0.680018	0.158922	-4.278950	0.0001
DBC DPIB(-2)	-0.375418	0.158946	-2.361924	0.0240
R-squared	0.350891	Mean dependent var	0.008840	
Adjusted R-squared	0.331799	S.D. dependent var	0.630531	
S.E. of regression	0.515419	Akaike info criterion	1.566279	
Sum squared resid	9.032321	Schwarz criterion	1.654252	
Log likelihood	-26.19301	Durbin-Watson stat	2.218804	

: -4 :

Dependent Variable: DDPH
 Method: Least Squares
 Date: 01/20/10 Time: 22:09
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDTRR(-1)	-6.26E-05	2.18E-05	-2.873821	0.0069
DDM2R(-1)	-8.28E-05	3.98E-05	-2.080911	0.0450
R-squared	0.232953	Mean dependent var	0.689722	
Adjusted R-squared	0.210393	S.D. dependent var	6.735984	
S.E. of regression	5.985586	Akaike info criterion	6.470538	
Sum squared resid	1218.126	Schwarz criterion	6.558512	
Log likelihood	-114.4697	Durbin-Watson stat	2.367685	

Dependent Variable: DDGR
 Method: Least Squares
 Date: 01/23/10 Time: 12:12
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints
 Convergence achieved after 10 iterations
 Backcast: 1972

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDGR(-1)	-1.580986	0.243093	-6.503639	0.0000
DDTRR(-1)	0.005063	0.002381	2.126755	0.0410
MA(1)	-0.706907	0.154112	-4.586975	0.0001
R-squared	0.745851	Mean dependent var	90.91526	
Adjusted R-squared	0.730448	S.D. dependent var	860.9790	
S.E. of regression	447.0065	Akaike info criterion	15.12268	
Sum squared resid	6593888.	Schwarz criterion	15.25464	
Log likelihood	-269.2082	Durbin-Watson stat	1.676700	
Inverted MA Roots	.71			

: -6 : (M2r) -5

Dependent Variable: DTRR
 Method: Least Squares
 Date: 01/23/10 Time: 12:17
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDGR(-1)	-49.05469	15.00167	-3.269948	0.0025
DDPH(-1)	1808.583	1031.644	1.753108	0.0889
C	17736.29	6568.411	2.700240	0.0108
R-squared	0.317745	Mean dependent var	19874.77	
Adjusted R-squared	0.276396	S.D. dependent var	46165.09	
S.E. of regression	39270.29	Akaike info criterion	24.07398	
Sum squared resid	5.09E+10	Schwarz criterion	24.20594	
Log likelihood	-430.3316	F-statistic	7.684507	
Durbin-Watson stat	1.668572	Prob(F-statistic)	0.001820	

Dependent Variable: DDM2R
 Method: Least Squares
 Date: 01/21/10 Time: 07:14
 Sample(adjusted): 1973 2008
 Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDGR(-1)	-22.75113	9.857725	-2.307950	0.0270
R-squared	0.120168	Mean dependent var	3209.499	
Adjusted R-squared	0.120168	S.D. dependent var	27776.49	
S.E. of regression	26054.16	Akaike info criterion	23.20113	
Sum squared resid	2.38E+10	Schwarz criterion	23.24511	
Log likelihood	-416.6203	Durbin-Watson stat	2.389472	