

No.28

**A Quarterly Econometric Model
for the Brazilian Economy (1)**

October , 2000

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9/15/00

A Quarterly Econometric Model for the Brazilian Economy

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September 15, 2000

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1. Introduction

This paper presents the initial prototype quarterly econometric model for the Brazilian economy. The Brazilian economy is rapidly changes such as exchange rate regime and a new framework for monetary policy. It is important to have a systematic view of the national economy as a whole since the economic structure has changed. Thus it is useful to make a prototype quarterly econometric model for the Brazilian economy.

This prototype modeling is designed to be used both for forecasting and for a policy simulation such as fiscal and monetary policies on a variety of macro-economic aggregate variables.

2. Estimation of Quarterly Econometric Model

The estimated result of this model is as follows. This simple model is composed of seven behavioral equations and one identity. As the lack of simultaneity in this model, we are estimated by OLS. The sample period is from 1992 to 1999.

First, we estimated the aggregate supply side. The production function (GDPR) is given by the real domestic capital stock (KR) multiplied by the capacity utilization rate (NUCI) and employed labor (EMP) as Cobb-Douglas-type function of equation (1) in Table 1 and Figure 1. This equation also includes in time trend as exogenous trend. Due to the lack of employment and wage data before 1990, the sample period is from 1992 to 1999. The estimation results are reasonable: capital and labor account for roughly 50 percent and 35 percent respectively. It is reasonable results, comparing with IPEA(1998). Although the sign of the estimated trend term, which implies productivity of growth rate, is positive, this value is very small (0.00125). The domestic capital stock is calculated according to identity of equation (2) in Table 2 and Figure 2.

Next, we estimated the labor demand function (EMP) of equation (3) in Table 3 and Figure 3. Employment (EMP) depends on one-lag of employment (EMP_{-1}), the real wage ($W / PGEN_{-1}$). Nominal wages (W) are determined by the Price of general goods (PGEN) and its own lagged ($W / PGEN_{-1}$) in Table 4 and Figure 4.

Finally, we estimated the aggregate demand side. Aggregate demand is given by individually estimated equation for private consumption and aggregate investment and government consumption and net export as exogenous variables as prototype model. The real private consumption (CPR) is estimated as a function of real disposable income (YDR), real interest rate (SELICR) and its own lagged (CPR_{-1}) in Table 5 and Figure 5. The real total private investment (IR) is estimated as a function of real GDP (GDPR), real interest rate (SELICR) and imports per domestic capital stock (IMR / KR_{-1}) in Table 6 and Figure 6. The disposable income (YDR) is a statistic equation of real GDP(GDPR) in Table 7 and Figure 7.

3. Final Test of the Model

The historical simulation is very important to evaluate how well the model can simulate the real economy. The model has been simulated over the period from 1992.II

to 1999.III, using the dynamic Gauss-Seidel method.

Figure 8 to Figure 15 shows the results of the final test. As the results of this final test suggest that this model is good performance, we will carry some policy simulations.

4. Conclusion

In this paper, we have conducted the prototype quarterly econometric model for the Brazilian economy and found this model was good performance. However, there is something to be improved in this model. It will be necessary not only to combine the monetary-fiscal block and the balance of payment block from IPEA, but also to improve the estimation methods.

Reference

- Eustaquio J.Reis, Marco A.F.H. Cavalcanti, A.S.de Castro, J.L.Rossi, Jr. and E.R. de Araujo, "A Brazilian Quarterly Economic Model", paper presented at the Project LINK world conference, 1998.
- Fukuchi, Takao, "An Investigation of Virtuous Circle Between Real and Monetary Aspects of Brazilian Economy", Discussion Papers, IPEA, 2000.
- Obayashi, mamoru, "A Quarterly Econometric Model for the Brazilian Economy", paper presented at IPEA seminar, March 2000.
- Tokunaga, suminori, "Primary commodity, FDI and Economic Development in Indonesia: An Econometric Model of the Indonesian Economy(1987-97)", Journal of International and regional Economics (Nagoya City University), Vol.1, pp.130-154.

Table 1. GDP

Dependent Variable: LOG(GDP)				
Method: Least Squares				
Date: 09/14/00 Time: 12:26				
Sample(adjusted): 1992:2 1999:4				
Included observations: 31 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.262740	0.804685	-1.569235	0.1297
LOG(KR(-1)*NUCI)	0.513522	0.069524	7.386303	0.0000
LOG(EMP(-1))	0.342059	0.190599	1.794648	0.0853
@TREND	0.001249	0.000606	2.060576	0.0503
@SEAS(1)	-0.047496	0.005966	-7.960918	0.0000
@SEAS(2)	0.006552	0.006244	1.049269	0.3045
@SEAS(3)	0.008890	0.006354	1.399235	0.1745
R-squared	0.981386	Mean dependent var	8.109302	
Adjusted R-squared	0.976733	S.D. dependent var	0.071688	
S.E. of regression	0.010935	Akaike info criterion	-5.998020	
Sum squared resid	0.002870	Schwarz criterion	-5.674216	
Log likelihood	99.96930	F-statistic	210.8959	
Durbin-Watson stat	1.670389	Prob(F-statistic)	0.000000	

Figure 1. GDP

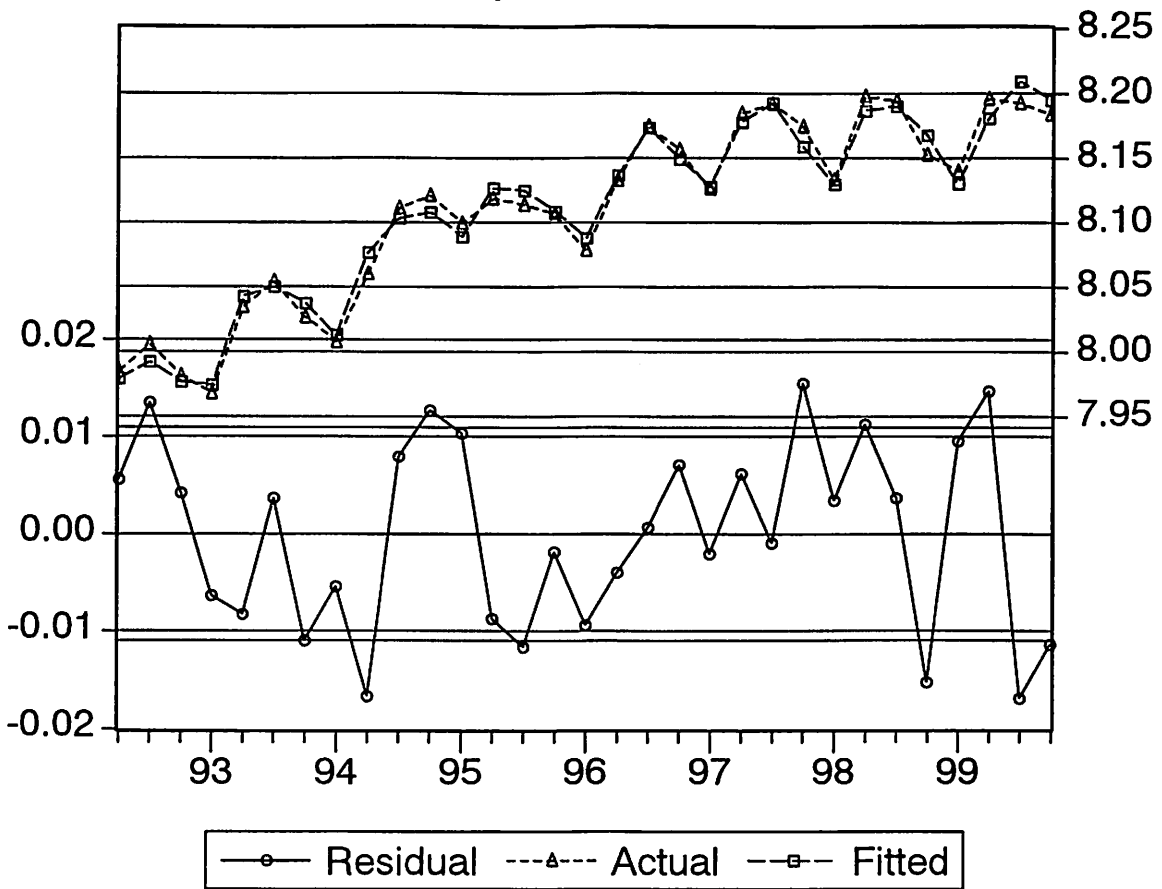


Figure 1.

Table 2. KR

Dependent Variable: KR Method: Least Squares Date: 09/14/00 Time: 12:08 Sample(adjusted): 1980:2 1999:4 Included observations: 79 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
KR(-1)	1.001098	0.004909	203.9246	0.0000
IR	0.751819	0.165430	4.544637	0.0000
@TREND	-4.417522	1.637369	-2.697938	0.0087
@SEAS(1)	-11.44773	39.83809	-0.287356	0.7747
@SEAS(2)	-10.37123	39.04397	-0.265629	0.7913
@SEAS(3)	-27.27414	39.40060	-0.692226	0.4910
R-squared	0.999747	Mean dependent var	33735.97	
Adjusted R-squared	0.999730	S.D. dependent var	7512.009	
S.E. of regression	123.5379	Akaike info criterion	12.54388	
Sum squared resid	1114098.	Schwarz criterion	12.72384	
Log likelihood	-489.4834	Durbin-Watson stat	0.608323	

Figure 2. KR

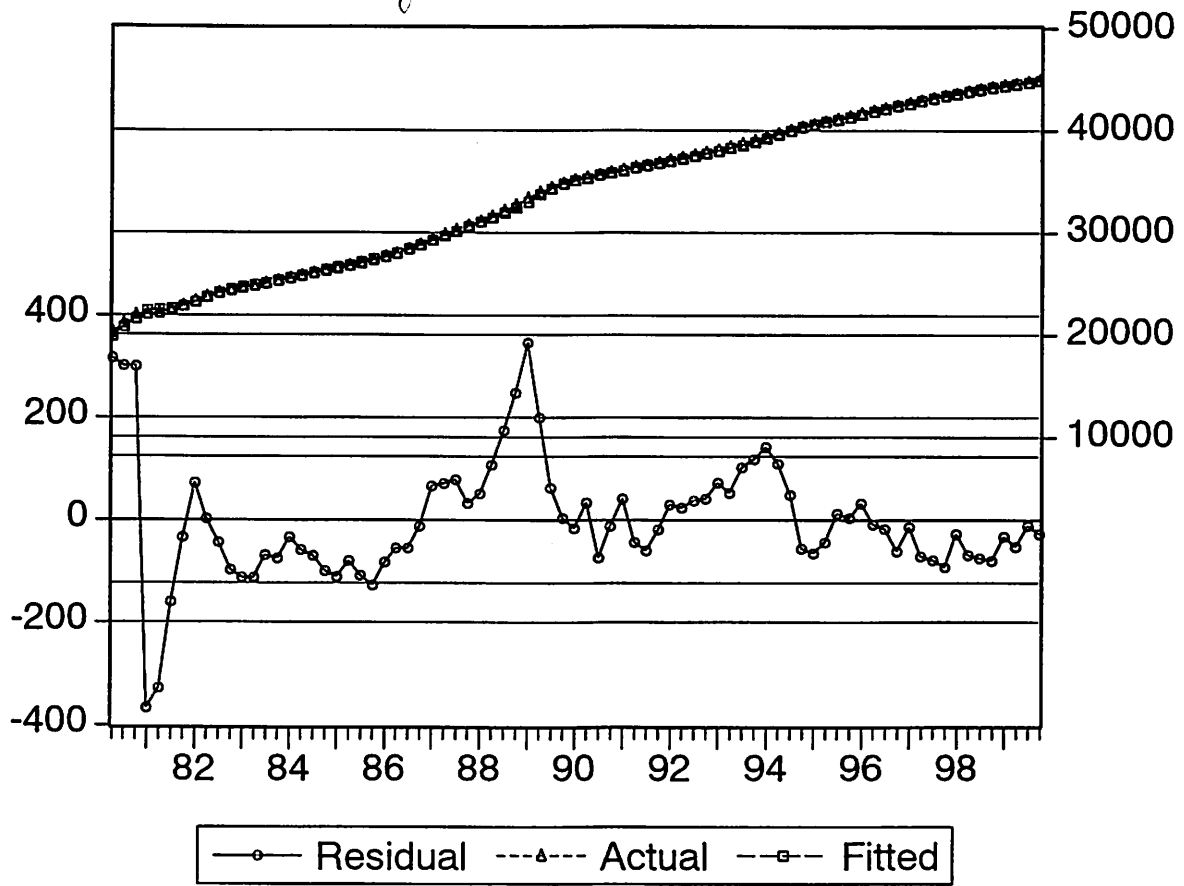


Table 3. EMP

Dependent Variable: EMP				
Method: Least Squares				
Date: 09/14/00 Time: 14:30				
Sample: 1992:2 1999:3				
Included observations: 30				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.134890	3.978107	1.793539	0.0855
EMP(-1)	0.909202	0.052260	17.39770	0.0000
W(-1)/PGEN(-1)	0.031645	0.027037	1.170434	0.2533
@SEAS(1)	-2.564841	0.388003	-6.610357	0.0000
@SEAS(2)	-0.399171	0.373779	-1.067932	0.2962
@SEAS(3)	-0.070728	0.372949	-0.189646	0.8512
R-squared	0.966828	Mean dependent var		104.5995
Adjusted R-squared	0.959917	S.D. dependent var		3.578732
S.E. of regression	0.716492	Akaike info criterion		2.347956
Sum squared resid	12.32065	Schwarz criterion		2.628196
Log likelihood	-29.21934	F-statistic		139.8985
Durbin-Watson stat	1.829784	Prob(F-statistic)		0.000000

Figure 3. EMP

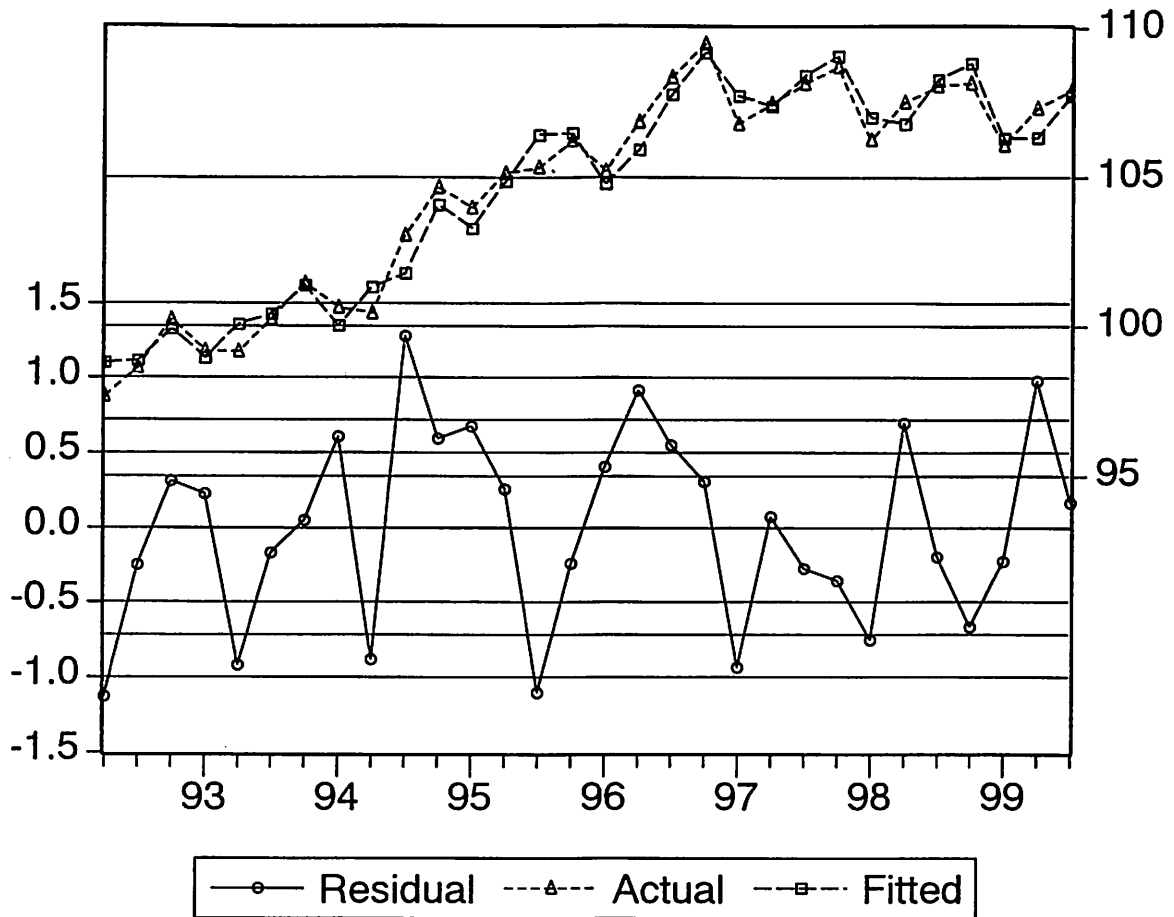


Table 4. W

Dependent Variable: W Method: Least Squares Date: 09/14/00 Time: 14:43 Sample: 1992:2 1999:3 Included observations: 30				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4866146.	1715054.	-2.837314	0.0091
PGEN(-1)	96.22983	4.386691	21.93677	0.0000
W(-1)/PGEN(-1)	52945.30	17116.98	3.093145	0.0050
@SEAS(1)	-203691.7	252667.8	-0.806164	0.4281
@SEAS(2)	168930.4	240779.7	0.701597	0.4897
@SEAS(3)	27475.62	239349.1	0.114793	0.9096
R-squared	0.979409	Mean dependent var		4701075.
Adjusted R-squared	0.975119	S.D. dependent var		2931134.
S.E. of regression	462350.7	Akaike info criterion		29.10289
Sum squared resid	5.13E+12	Schwarz criterion		29.38313
Log likelihood	-430.5434	F-statistic		228.3076
Durbin-Watson stat	0.585992	Prob(F-statistic)		0.000000

Figure 4. W

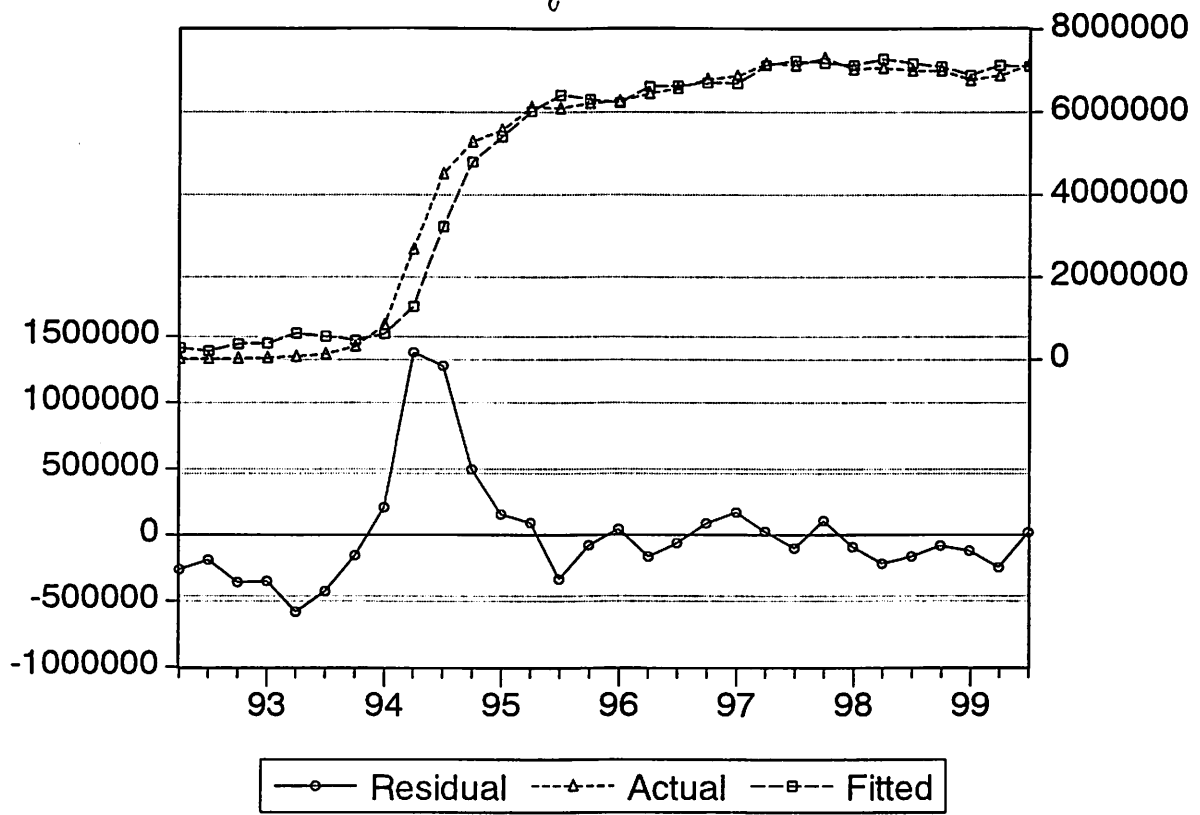


Table 5. CPR

Dependent Variable: CPR				
Method: Least Squares				
Date: 09/14/00 Time: 12:47				
Sample(adjusted): 1992:2 1999:3				
Included observations: 30 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-533.3373	783.7806	-0.680468	0.5030
YDR(-1)	0.699568	0.479917	1.457686	0.1584
SELICR	-7.046221	3.593918	-1.960596	0.0621
CPR(-1)	0.477828	0.245116	1.949394	0.0635
@SEAS(1)	32.26768	92.58360	0.348525	0.7306
@SEAS(2)	207.6232	106.2049	1.954931	0.0629
@SEAS(3)	140.3383	78.21185	1.794336	0.0859
R-squared	0.750894	Mean dependent var	2041.107	
Adjusted R-squared	0.685910	S.D. dependent var	262.0834	
S.E. of regression	146.8813	Akaike info criterion	13.01809	
Sum squared resid	496204.6	Schwarz criterion	13.34504	
Log likelihood	-188.2714	F-statistic	11.55504	
Durbin-Watson stat	1.937024	Prob(F-statistic)	0.000006	

Figure 5. CPR

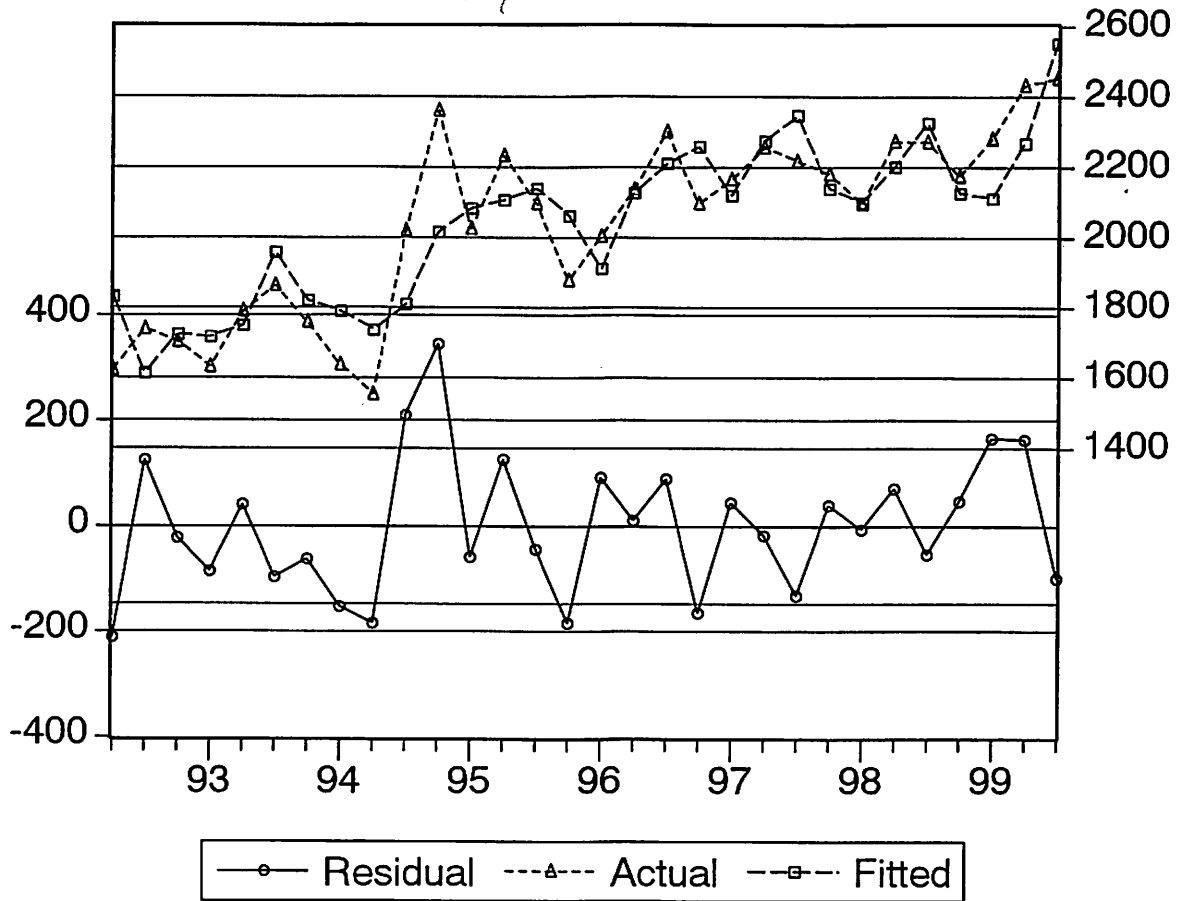


Table 6. IR

Dependent Variable: IR				
Method: Least Squares				
Date: 09/14/00 Time: 16:59				
Sample(adjusted): 1992:2 1999:4				
Included observations: 31 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1200.083	386.3956	-3.105839	0.0050
GDPR(-1)/GDPR(-2)	1645.386	374.4913	4.393655	0.0002
SELICR(-4)	-1.098222	0.523857	-2.096417	0.0472
IMR(-1)/KR(-1)	881.2495	84.82106	10.38951	0.0000
@SEAS(1)	17.91920	21.54052	0.831883	0.4140
@SEAS(2)	92.44021	23.77501	3.888125	0.0007
@SEAS(3)	-51.30141	21.36145	-2.401589	0.0248
D971	-46.57959	34.98700	-1.331340	0.1961
R-squared	0.888411	Mean dependent var	670.6138	
Adjusted R-squared	0.854449	S.D. dependent var	82.75601	
S.E. of regression	31.57239	Akaike info criterion	9.960079	
Sum squared resid	22926.77	Schwarz criterion	10.33014	
Log likelihood	-146.3812	F-statistic	26.15900	
Durbin-Watson stat	1.703665	Prob(F-statistic)	0.000000	

Figure 6. IR

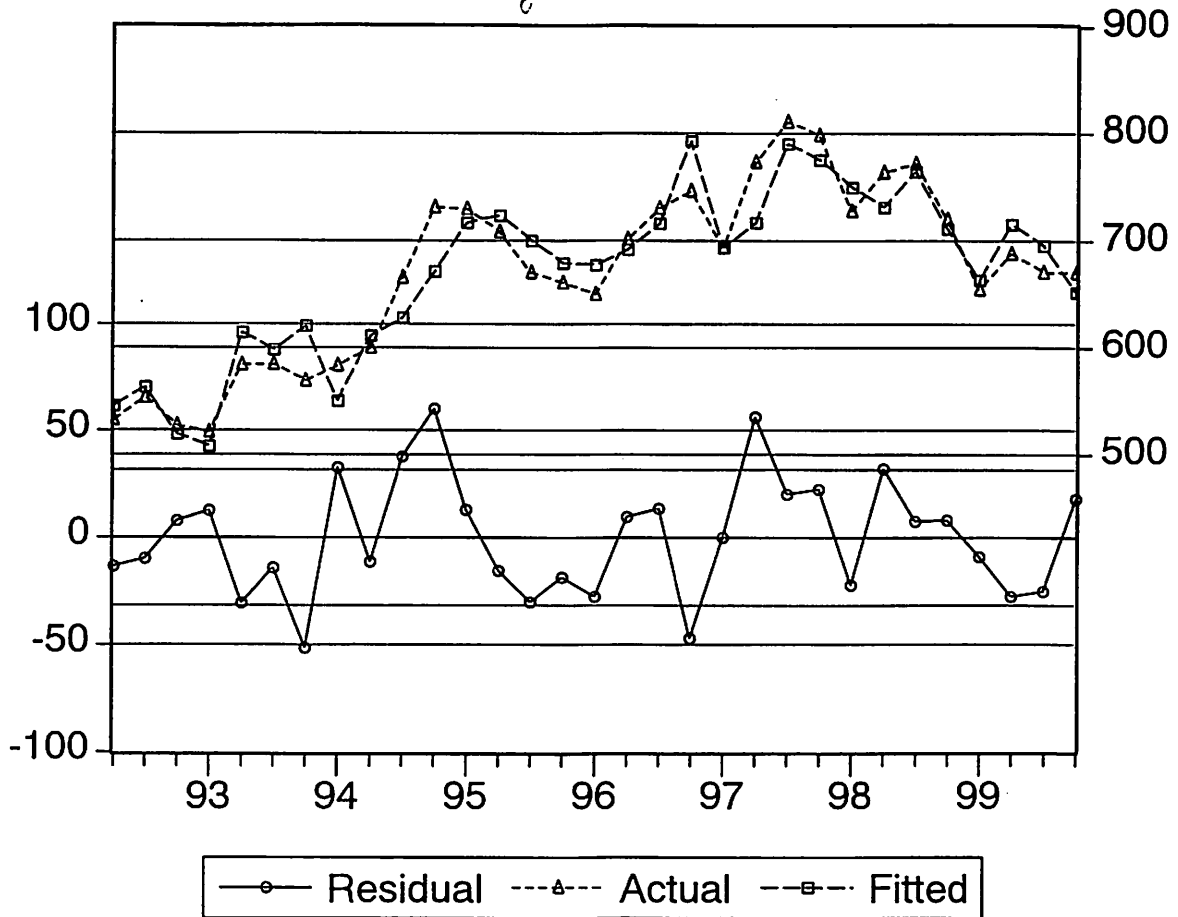


Table 7. YDR

Dependent Variable: YDR Method: Least Squares Date: 09/14/00 Time: 14:27 Sample(adjusted): 1992:2 1999:3 Included observations: 30 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	550.4815	102.8230	5.353678	0.0000
GDPR	0.548932	0.030777	17.83598	0.0000
@SEAS(1)	-30.20356	20.11717	-1.501383	0.1458
@SEAS(2)	46.26047	19.37291	2.387894	0.0248
@SEAS(3)	84.03334	19.53608	4.301443	0.0002
R-squared	0.946777	Mean dependent var		2403.500
Adjusted R-squared	0.938262	S.D. dependent var		150.3718
S.E. of regression	37.36315	Akaike info criterion		10.23026
Sum squared resid	34900.13	Schwarz criterion		10.46379
Log likelihood	-148.4539	F-statistic		111.1812
Durbin-Watson stat	2.030060	Prob(F-statistic)		0.000000

Figure 7. YDR

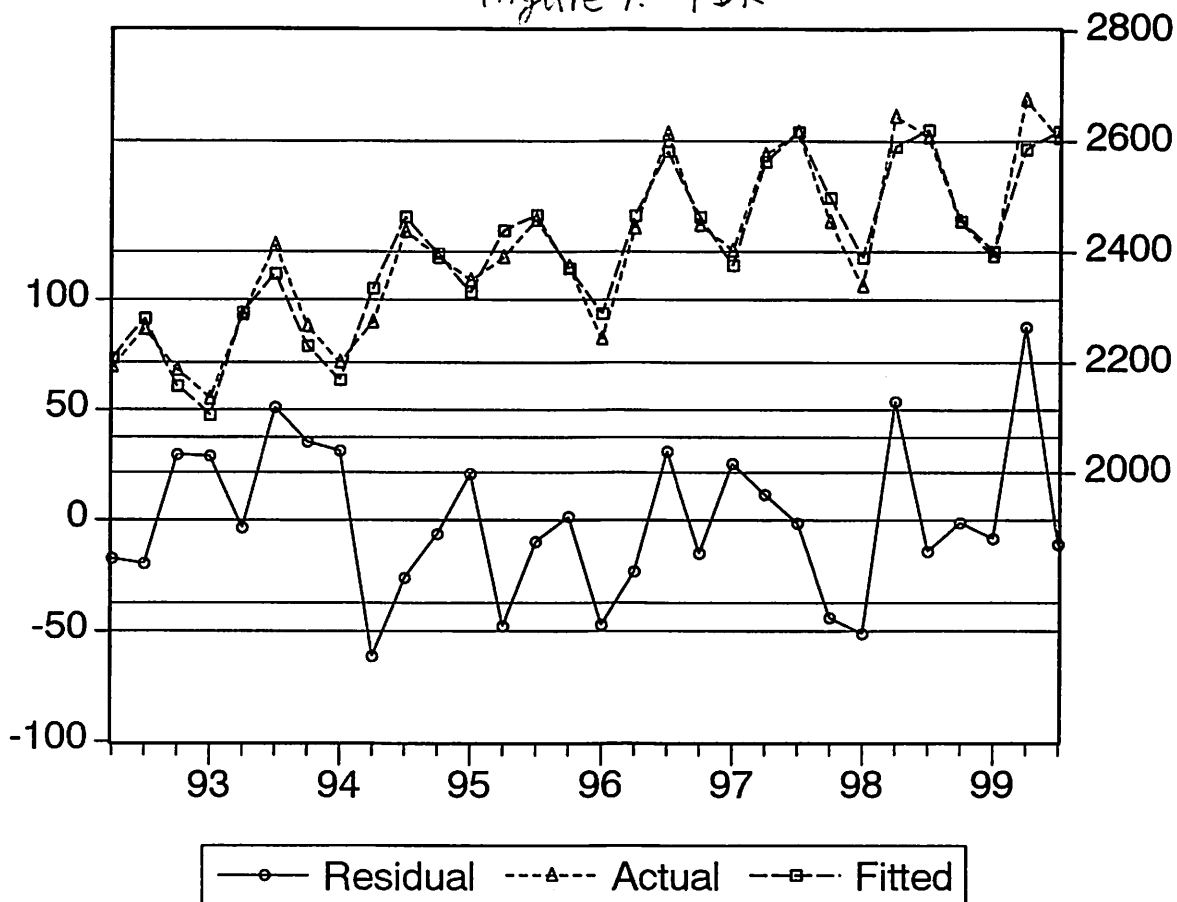


Figure 8. Final Test (GDPR)

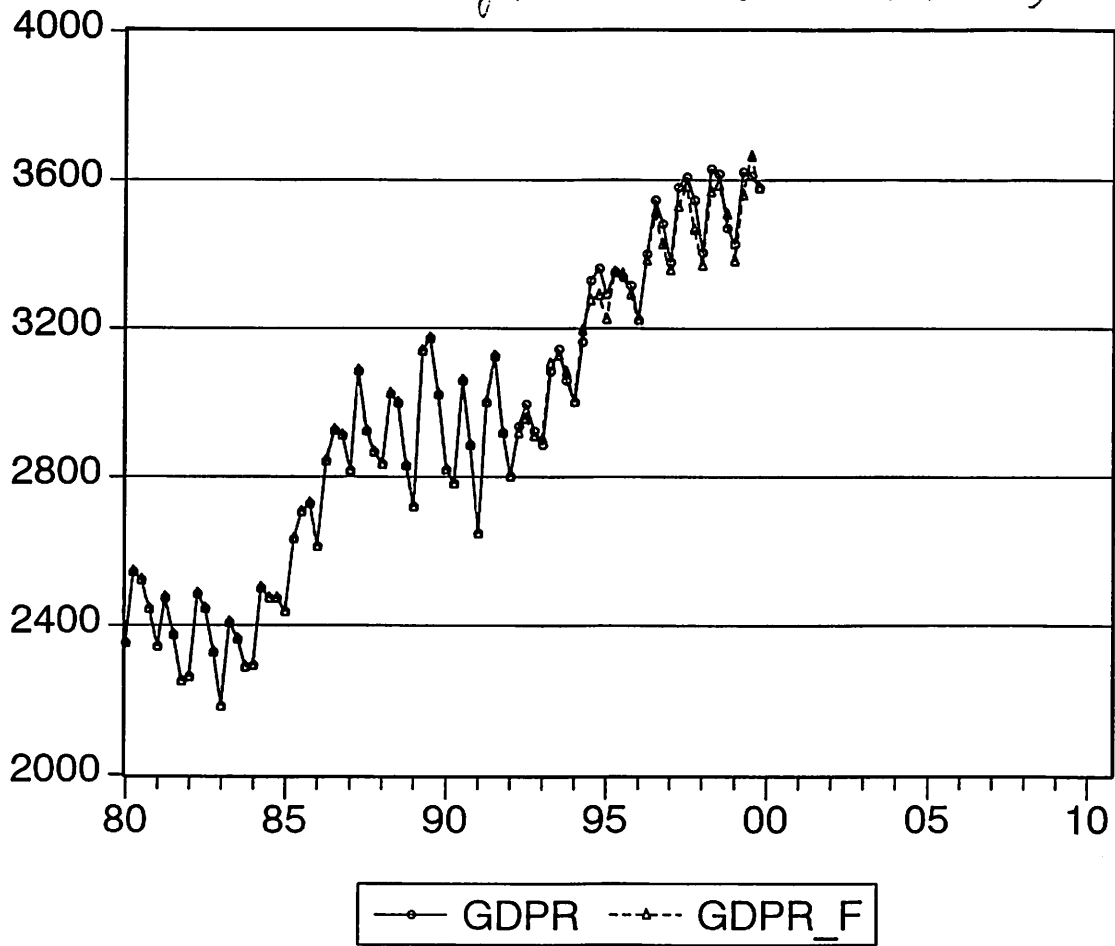


Figure 9. Final Test (KR)

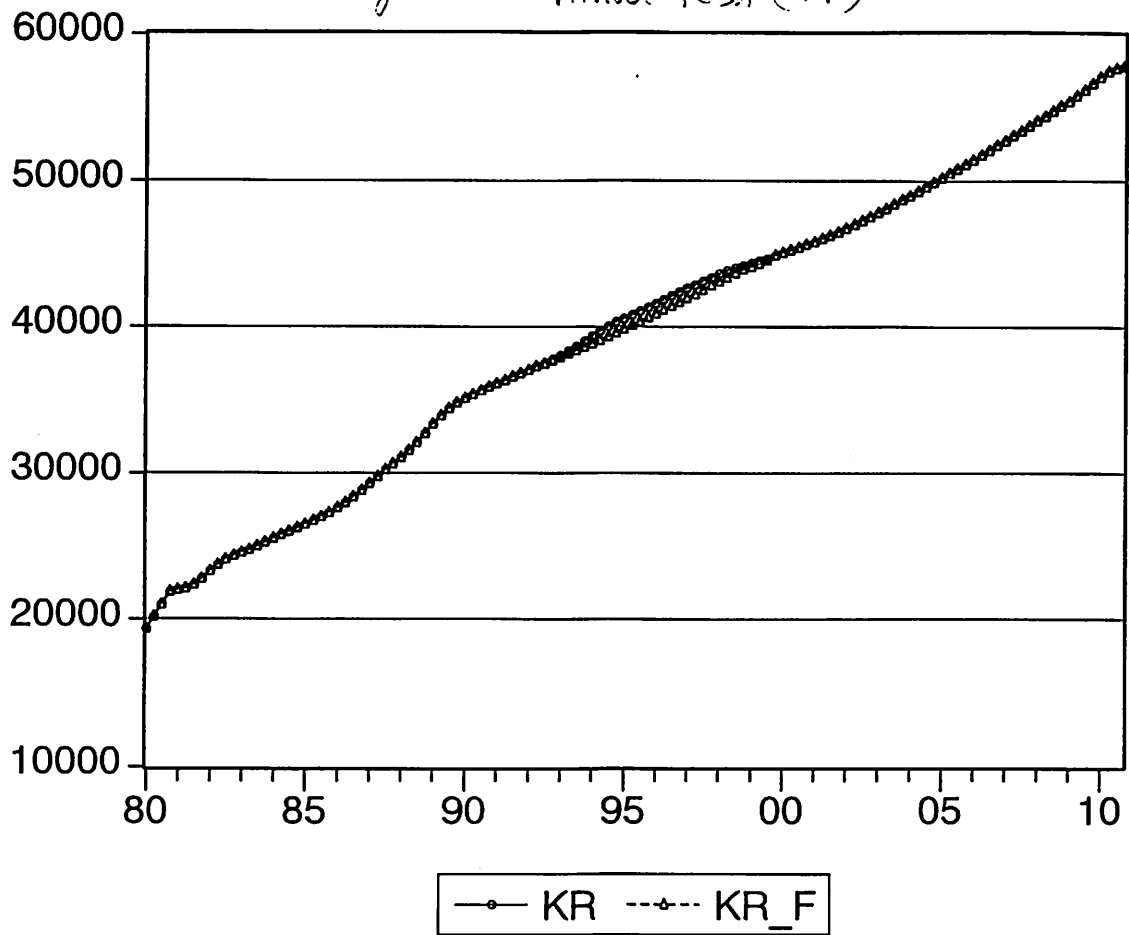


Figure 10. Final Test (CPR)

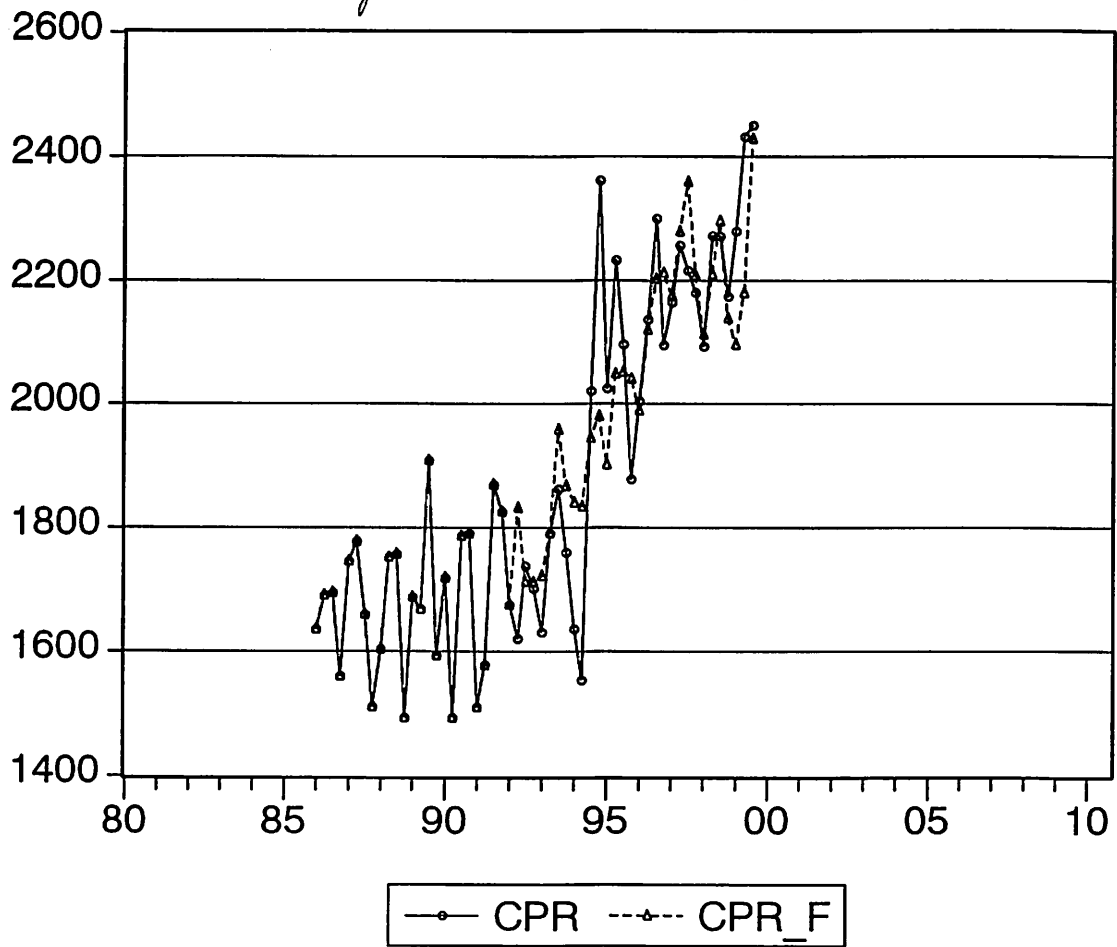


Figure 11. Final Test (IR)

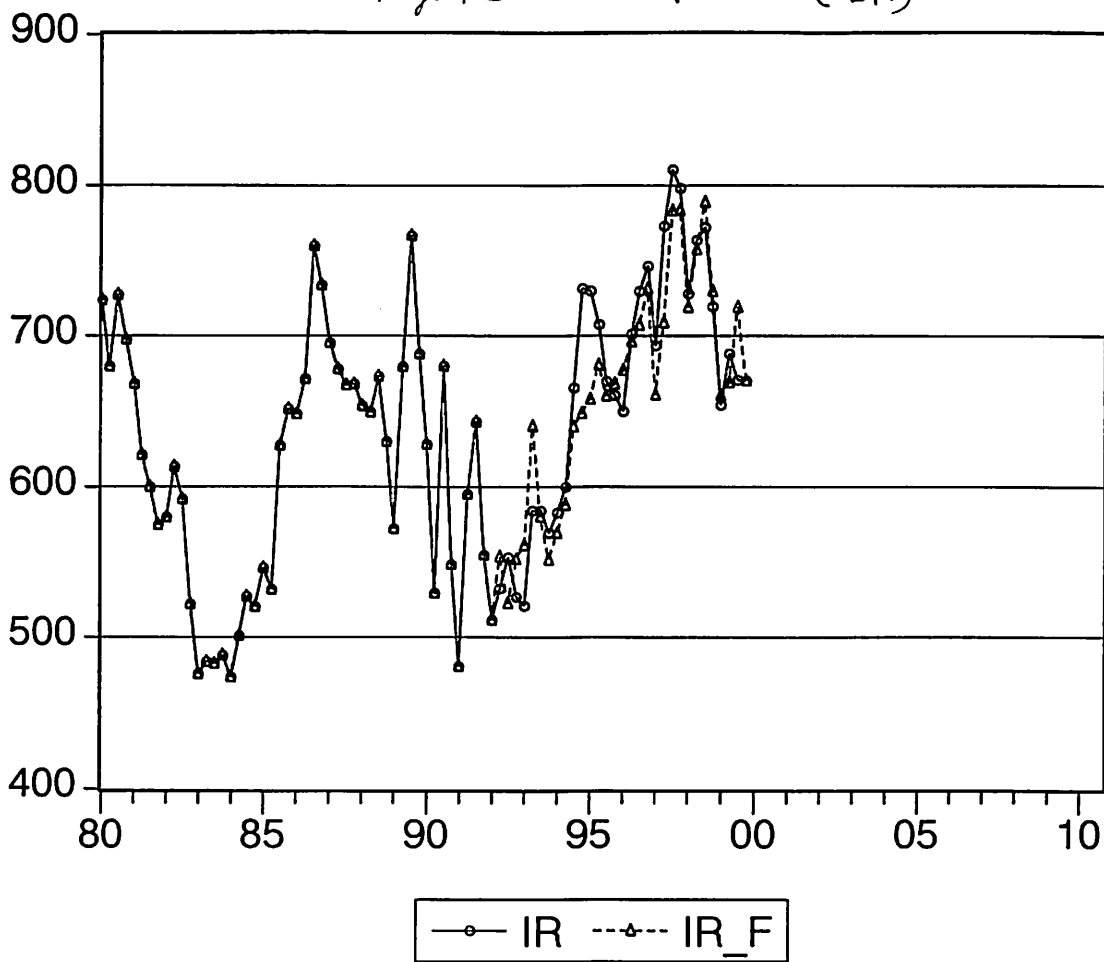


Figure 12. Final test (NX)

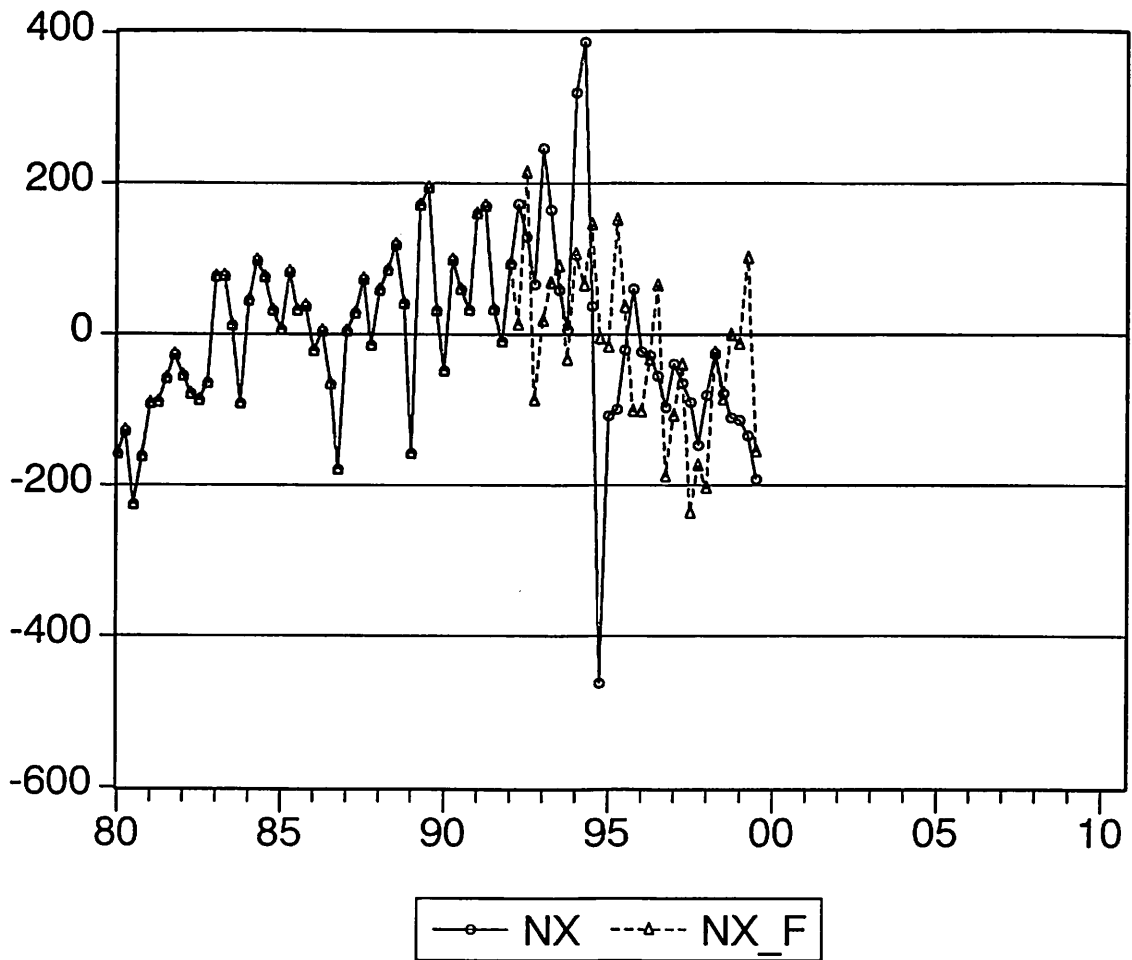


Figure 13. Final Test (YDR)

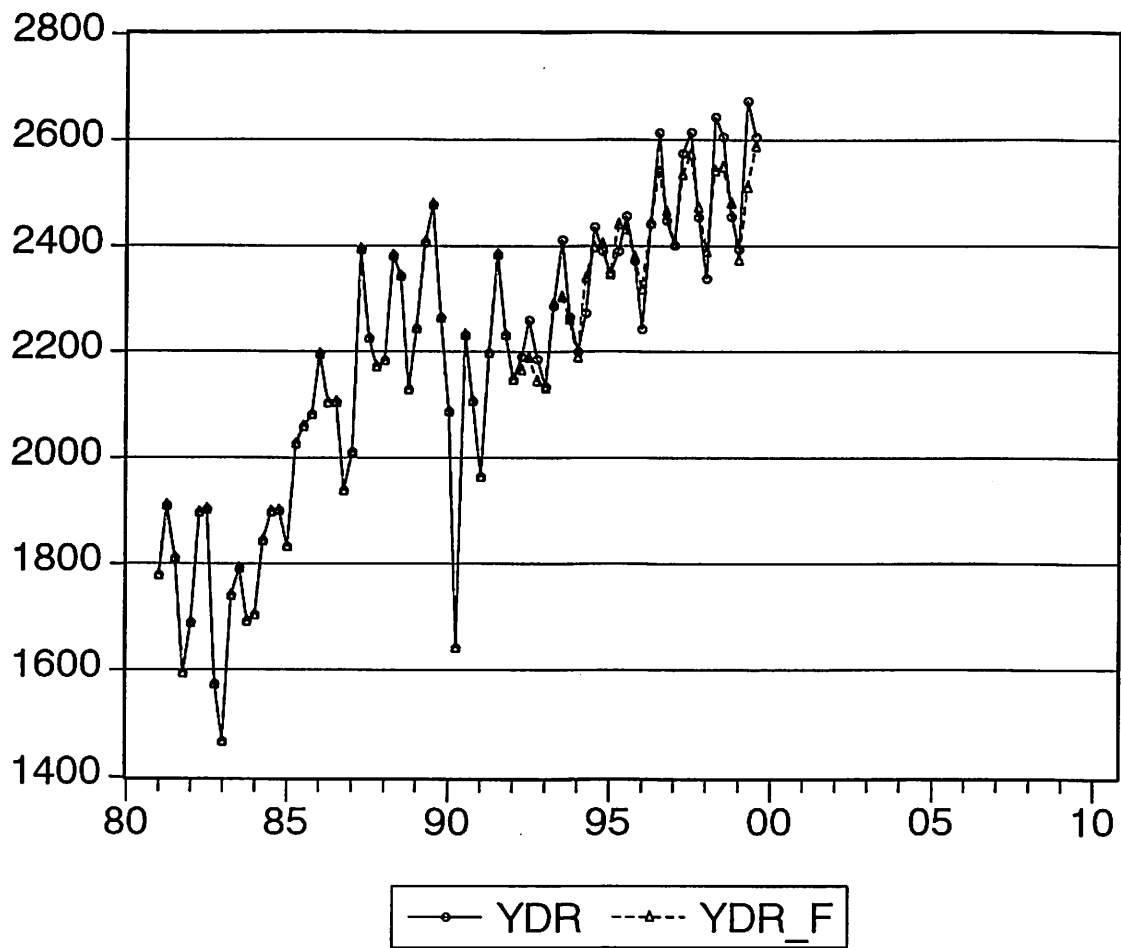
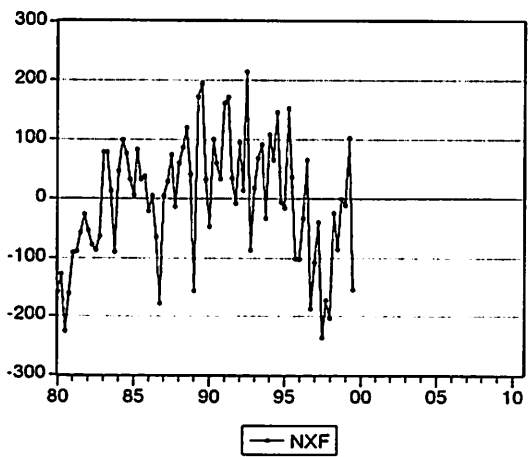
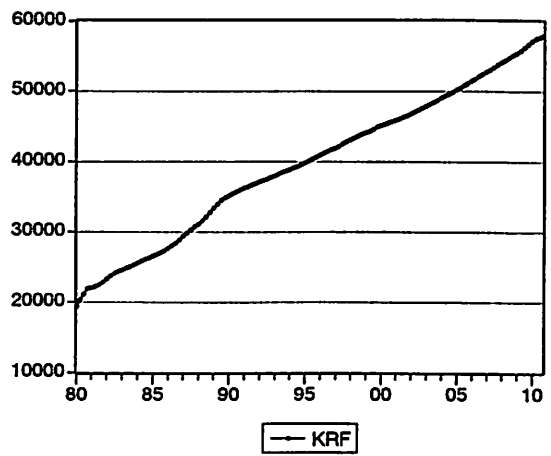
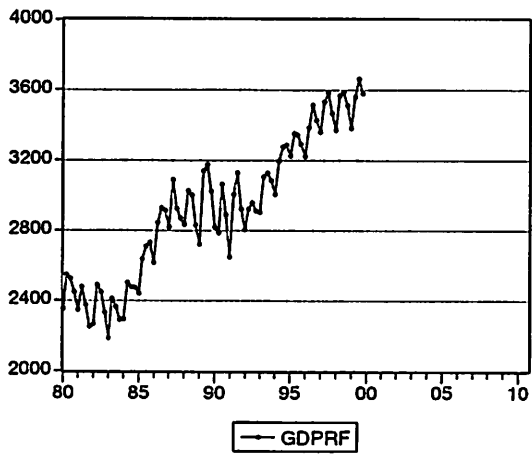
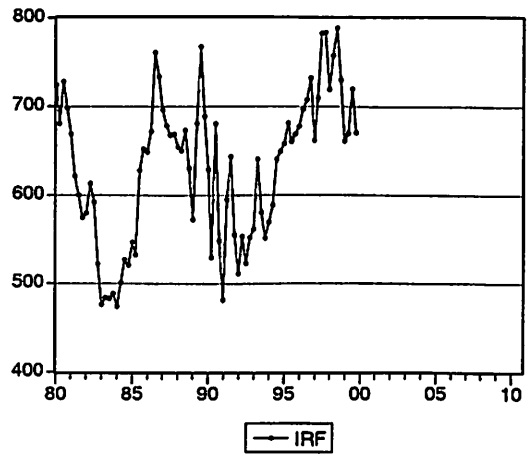
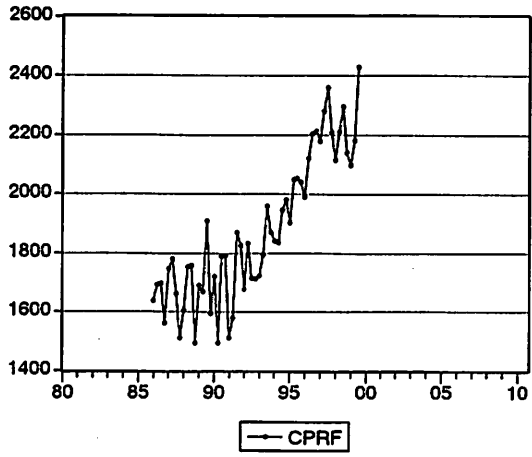


Figure 14. Final Test



	D971	DQ1	DQ2	DQ3	GDPR	GDP
1980Q1	0.0000	1.0000	0.0000	0.0000	2352.8794	0.0008
1980Q2	0.0000	0.0000	1.0000	0.0000	2544.8166	0.0011
1980Q3	0.0000	0.0000	0.0000	1.0000	2521.6653	0.0013
1980Q4	0.0000	0.0000	0.0000	0.0000	2444.7379	0.0016
1981Q1	0.0000	1.0000	0.0000	0.0000	2344.5366	0.0018
1981Q2	0.0000	0.0000	1.0000	0.0000	2475.5639	0.0022
1981Q3	0.0000	0.0000	0.0000	1.0000	2374.5054	0.0025
1981Q4	0.0000	0.0000	0.0000	0.0000	2250.2691	0.0027
1982Q1	0.0000	1.0000	0.0000	0.0000	2262.3324	0.0033
1982Q2	0.0000	0.0000	1.0000	0.0000	2486.0981	0.0044
1982Q3	0.0000	0.0000	0.0000	1.0000	2446.2424	0.0052
1982Q4	0.0000	0.0000	0.0000	0.0000	2328.5945	0.0057
1983Q1	0.0000	1.0000	0.0000	0.0000	2183.0846	0.0060
1983Q2	0.0000	0.0000	1.0000	0.0000	2408.2209	0.0086
1983Q3	0.0000	0.0000	0.0000	1.0000	2363.0697	0.0117
1983Q4	0.0000	0.0000	0.0000	0.0000	2289.8605	0.0155
1984Q1	0.0000	1.0000	0.0000	0.0000	2294.4705	0.0193
1984Q2	0.0000	0.0000	1.0000	0.0000	2501.2137	0.0276
1984Q3	0.0000	0.0000	0.0000	1.0000	2474.3942	0.0364
1984Q4	0.0000	0.0000	0.0000	0.0000	2473.3460	0.0498
1985Q1	0.0000	1.0000	0.0000	0.0000	2437.2983	0.0722
1985Q2	0.0000	0.0000	1.0000	0.0000	2634.5839	0.1007
1985Q3	0.0000	0.0000	0.0000	1.0000	2706.8680	0.1368
1985Q4	0.0000	0.0000	0.0000	0.0000	2729.5331	0.1908
1986Q1	0.0000	1.0000	0.0000	0.0000	2613.6180	0.2834
1986Q2	0.0000	0.0000	1.0000	0.0000	2842.9923	0.3330
1986Q3	0.0000	0.0000	0.0000	1.0000	2926.1485	0.3508
1986Q4	0.0000	0.0000	0.0000	0.0000	2912.5948	0.3733
1987Q1	0.0000	1.0000	0.0000	0.0000	2816.5617	0.4654
1987Q2	0.0000	0.0000	1.0000	0.0000	3086.1379	0.9031
1987Q3	0.0000	0.0000	0.0000	1.0000	2923.9146	1.2283
1987Q4	0.0000	0.0000	0.0000	0.0000	2867.4655	1.6529
1988Q1	0.0000	1.0000	0.0000	0.0000	2833.8927	2.4777
1988Q2	0.0000	0.0000	1.0000	0.0000	3023.8833	4.5125
1988Q3	0.0000	0.0000	0.0000	1.0000	2999.1790	8.1471
1988Q4	0.0000	0.0000	0.0000	0.0000	2830.1081	15.7798
1989Q1	0.0000	1.0000	0.0000	0.0000	2719.6403	27.7408
1989Q2	0.0000	0.0000	1.0000	0.0000	3140.1867	42.5262
1989Q3	0.0000	0.0000	0.0000	1.0000	3174.4328	101.4919
1989Q4	0.0000	0.0000	0.0000	0.0000	3022.1146	276.1729
1990Q1	0.0000	1.0000	0.0000	0.0000	2818.6829	1150.4530
1990Q2	0.0000	0.0000	1.0000	0.0000	2783.2713	2215.0420
1990Q3	0.0000	0.0000	0.0000	1.0000	3060.3579	3382.8794
1990Q4	0.0000	0.0000	0.0000	0.0000	2886.4824	4800.4201
1991Q1	0.0000	1.0000	0.0000	0.0000	2647.4244	7157.3629
1991Q2	0.0000	0.0000	1.0000	0.0000	3001.9565	10567.0268
1991Q3	0.0000	0.0000	0.0000	1.0000	3126.4983	15705.4612
1991Q4	0.0000	0.0000	0.0000	0.0000	2918.0832	26856.1484
1992Q1	0.0000	1.0000	0.0000	0.0000	2802.2250	48644.0384
1992Q2	0.0000	0.0000	1.0000	0.0000	2935.4960	89945.0239
1992Q3	0.0000	0.0000	0.0000	1.0000	2996.8873	172545.0037
1992Q4	0.0000	0.0000	0.0000	0.0000	2924.8485	329824.7015
1993Q1	0.0000	1.0000	0.0000	0.0000	2886.2549	630297.3848
1993Q2	0.0000	0.0000	1.0000	0.0000	3084.7219	1457541.7730
1993Q3	0.0000	0.0000	0.0000	1.0000	3145.2028	3485171.8403
1993Q4	0.0000	0.0000	0.0000	0.0000	3059.8926	8524103.1837

1994Q1	0.0000	1.0000	0.0000	0.0000	3002.5457	21726749.7011
1994Q2	0.0000	0.0000	1.0000	0.0000	3164.6203	67118938.4374
1994Q3	0.0000	0.0000	0.0000	1.0000	3329.9173	125341395.1194
1994Q4	0.0000	0.0000	0.0000	0.0000	3362.9880	135017595.7421
1995Q1	0.0000	1.0000	0.0000	0.0000	3291.3198	150099536.5054
1995Q2	0.0000	0.0000	1.0000	0.0000	3354.2569	160790725.8560
1995Q3	0.0000	0.0000	0.0000	1.0000	3337.8896	167465962.1895
1995Q4	0.0000	0.0000	0.0000	0.0000	3315.2941	167835292.4491
1996Q1	0.0000	1.0000	0.0000	0.0000	3222.6549	177468640.6025
1996Q2	0.0000	0.0000	1.0000	0.0000	3402.7871	192354149.0092
1996Q3	0.0000	0.0000	0.0000	1.0000	3547.3032	205581877.8649
1996Q4	0.0000	0.0000	0.0000	0.0000	3483.5578	203482059.5234
1997Q1	1.0000	1.0000	0.0000	0.0000	3380.3338	202233412.2822
1997Q2	0.0000	0.0000	1.0000	0.0000	3582.1344	218481109.8663
1997Q3	0.0000	0.0000	0.0000	1.0000	3609.4741	221954768.8621
1997Q4	0.0000	0.0000	0.0000	0.0000	3547.4719	221441734.9894
1998Q1	0.0000	1.0000	0.0000	0.0000	3404.9737	216652913.4142
1998Q2	0.0000	0.0000	1.0000	0.0000	3631.7620	231711754.9664
1998Q3	0.0000	0.0000	0.0000	1.0000	3618.4461	230309319.6023
1998Q4	0.0000	0.0000	0.0000	0.0000	3470.9212	221140144.0171
1999Q1	0.0000	1.0000	0.0000	0.0000	3427.1610	230265965.7674
1999Q2	0.0000	0.0000	1.0000	0.0000	3623.8141	250529477.1506
1999Q3	0.0000	0.0000	0.0000	1.0000	3611.7662	258833686.2492
1999Q4	0.0000	0.0000	0.0000	0.0000	3579.6068	270777249.4792
2000Q1	0.0000	1.0000	0.0000	0.0000		
2000Q2	0.0000	0.0000	1.0000	0.0000		
2000Q3	0.0000	0.0000	0.0000	1.0000		
2000Q4	0.0000	0.0000	0.0000	0.0000		
2001Q1	0.0000	1.0000	0.0000	0.0000		
2001Q2	0.0000	0.0000	1.0000	0.0000		
2001Q3	0.0000	0.0000	0.0000	1.0000		
2001Q4	0.0000	0.0000	0.0000	0.0000		
2002Q1	0.0000	1.0000	0.0000	0.0000		
2002Q2	0.0000	0.0000	1.0000	0.0000		
2002Q3	0.0000	0.0000	0.0000	1.0000		
2002Q4	0.0000	0.0000	0.0000	0.0000		
2003Q1	0.0000	1.0000	0.0000	0.0000		
2003Q2	0.0000	0.0000	1.0000	0.0000		
2003Q3	0.0000	0.0000	0.0000	1.0000		
2003Q4	0.0000	0.0000	0.0000	0.0000		
2004Q1	0.0000	1.0000	0.0000	0.0000		
2004Q2	0.0000	0.0000	1.0000	0.0000		
2004Q3	0.0000	0.0000	0.0000	1.0000		
2004Q4	0.0000	0.0000	0.0000	0.0000		
2005Q1	0.0000	1.0000	0.0000	0.0000		
2005Q2	0.0000	0.0000	1.0000	0.0000		
2005Q3	0.0000	0.0000	0.0000	1.0000		
2005Q4	0.0000	0.0000	0.0000	0.0000		
2006Q1	0.0000	1.0000	0.0000	0.0000		
2006Q2	0.0000	0.0000	1.0000	0.0000		
2006Q3	0.0000	0.0000	0.0000	1.0000		
2006Q4	0.0000	0.0000	0.0000	0.0000		
2007Q1	0.0000	1.0000	0.0000	0.0000		
2007Q2	0.0000	0.0000	1.0000	0.0000		
2007Q3	0.0000	0.0000	0.0000	1.0000		
2007Q4	0.0000	0.0000	0.0000	0.0000		
2008Q1	0.0000	1.0000	0.0000	0.0000		

2008Q2	0.0000	0.0000	1.0000	0.0000
2008Q3	0.0000	0.0000	0.0000	1.0000
2008Q4	0.0000	0.0000	0.0000	0.0000
2009Q1	0.0000	1.0000	0.0000	0.0000
2009Q2	0.0000	0.0000	1.0000	0.0000
2009Q3	0.0000	0.0000	0.0000	1.0000
2009Q4	0.0000	0.0000	0.0000	0.0000
2010Q1	0.0000	1.0000	0.0000	0.0000
2010Q2	0.0000	0.0000	1.0000	0.0000
2010Q3	0.0000	0.0000	0.0000	1.0000
2010Q4	0.0000	0.0000	0.0000	0.0000

YDR	YD	CPR	IR
#####	#####		724.0800
#####	#####		679.9112
#####	#####		727.1581
#####	#####		697.4821
1778.8923	0.0013		668.3992
1910.8744	0.0017		621.1535
1811.8499	0.0019		599.9532
1594.3679	0.0019		574.7681
1689.8789	0.0025		579.9468
1896.7618	0.0034		613.4381
1902.9417	0.0040		591.9499
1573.9422	0.0038		522.1592
1465.4630	0.0040		475.9565
1740.0303	0.0062		483.9203
1792.3732	0.0089		482.6786
1691.9381	0.0115		488.1837
1703.3792	0.0143		473.7092
1843.7944	0.0204		501.2683
1897.7804	0.0279		527.3920
1900.9987	0.0383		520.4531
1832.7043	0.0543		546.4561
2026.0870	0.0774		532.0556
2058.6343	0.1040		627.4636
2081.7707	0.1455		651.7780
2195.8309	0.2381	1636.4513	648.1695
2103.2725	0.2464	1690.9617	671.4817
2104.7665	0.2524	1695.6450	760.1321
1938.3479	0.2484	1560.8513	733.6980
2011.1382	0.3323	1745.9602	695.4323
2393.6635	0.7005	1778.3005	677.8605
2225.1790	0.9348	1660.2253	667.3896
2171.0824	1.2515	1511.3498	668.1978
2183.9471	1.9095	1604.6832	653.7409
2381.8750	3.5544	1752.8188	649.7790
2342.5103	6.3633	1757.8445	673.1696
2128.6342	11.8686	1493.4435	630.1266
2243.5864	22.8850	1688.5952	572.1356
2407.1896	32.5995	1668.5371	679.8808
2477.9128	79.2230	1909.1738	766.8687
2263.8235	206.8772	1593.6180	688.1308
2088.4332	852.3996	1719.4202	628.2911
1642.1597	1306.8983	1493.7616	529.5095
2232.1909	2467.4345	1786.9909	680.0249
2106.7186	3503.6189	1791.1520	548.5694
1964.1735	5310.1809	1510.3332	481.0623
2197.6483	7735.8243	1578.2091	595.0862
2384.4266	11977.7834	1869.9191	643.2708
2231.1805	20534.3411	1826.0720	555.0537
2146.5209	37261.6219	1676.1302	511.3201
2190.8591	67128.9875	1621.2927	532.2934
2259.9495	130116.0031	1738.0477	553.2198
2185.6581	246468.8467	1701.5711	526.8196
2133.7065	465956.6235	1631.6601	520.7217
2286.5948	1080423.9509	1790.4080	584.1396
2412.1335	2672864.1088	1861.8869	584.2535
2265.5637	6311299.6107	1759.6220	569.1306

2199.8231	15918160.8522	1637.0203	583.0613
2272.3253	48194111.4874	1553.3951	600.0490
2436.3302	91705889.5785	2020.2581	665.6277
2390.1106	95958411.6409	2361.1718	731.4323
2348.0739	107083121.1938	2024.7578	729.7623
2390.2901	114581705.5059	2233.0584	707.9507
2456.8437	123262822.8039	2095.8398	670.0712
2371.8088	120071766.1296	1877.6971	660.4339
2242.1122	123471054.9735	2003.6568	649.8188
2441.5713	138018149.2656	2136.6479	701.1912
2612.9043	151429341.4085	2300.2875	729.8559
2447.6575	142972911.4123	2095.3209	746.2961
2401.3255	143662806.9999	2164.5069	693.7885
2574.7223	157037153.7574	2256.7027	773.0538
2614.5068	160771970.7486	2216.5303	810.7602
2453.7702	153170241.2879	2179.8584	798.2220
2337.9932	148762689.5904	2093.3861	727.9530
2644.0933	168697043.1548	2272.0250	763.7054
2606.6139	165907535.1618	2271.0391	772.1474
2454.7967	156400579.9450	2174.0940	719.6651
2393.1419	160791723.8567	2279.2744	654.3484
2673.6543	184840944.1158	2431.4250	688.0525
2606.0775	186761992.3204	2450.7685	670.9856
			670.2162

IMACHR	ICONSR	NX	KR	NUCI
281.3526	423.8134	-158.3474	19373.6652	84.0000
279.0955	383.0551	-127.9364	20208.0270	85.0000
314.6862	393.4765	-225.9288	21042.3887	84.0000
290.7706	388.4855	-161.8346	21876.7505	82.0000
252.8012	398.1259	-91.2962	22007.5322	78.0000
245.0775	359.8448	-89.6136	22138.3139	76.0000
214.6241	369.6439	-58.2709	22399.8774	74.0000
194.7860	364.9579	-27.1622	22792.2226	74.0000
192.8296	371.9625	-55.1276	23279.6669	76.0000
207.4425	389.9620	-78.7120	23719.4802	77.0000
209.5036	366.9714	-86.9915	24075.9799	76.0000
175.4235	333.0834	-63.9825	24349.1660	73.0000
147.5653	315.9503	77.1119	24556.4283	74.0000
151.8453	319.4159	77.7759	24767.3263	72.0000
159.3159	310.7396	11.7979	24999.2499	73.0000
163.6601	311.7646	-91.2557	25252.1991	72.0000
153.9480	307.3715	45.4415	25520.5608	74.0000
174.8320	313.3266	98.2144	25781.8824	74.0000
193.6680	319.9407	75.4645	26030.5509	76.0000
178.5373	328.2998	31.7967	26266.5662	77.0000
181.6923	350.4728	5.9838	26495.7786	77.0000
169.3837	348.7522	82.4510	26741.5886	77.0000
215.6864	395.3680	31.9833	27009.8464	80.0000
208.5094	426.2174	37.5494	27300.5520	81.0000
216.3937	414.8319	-22.0707	27617.6344	81.0000
240.6882	413.2333	4.4994	27976.8100	82.0000
260.9393	479.3131	-65.7284	28382.0079	86.0000
249.7668	464.7426	-178.6914	28833.2279	84.0000
235.6781	441.5689	4.7941	29319.1403	83.0000
238.6719	421.4582	28.5574	29794.4257	76.0000
235.3773	414.5635	73.2223	30247.7544	80.0000
228.3579	422.3612	-13.8835	30679.1263	79.0000
226.8414	409.8043	58.6078	31103.0102	80.0000
224.5731	408.2057	85.0524	31577.2816	79.0000
230.4154	425.1435	118.8058	32116.4093	80.0000
219.4749	394.1721	40.8744	32720.3932	78.0000
192.5287	364.6406	-157.8942	33362.7681	79.0000
213.9111	448.1830	171.2591	33937.6726	83.0000
258.6245	488.1847	193.6814	34418.6414	83.0000
222.8678	447.2555	31.8833	34805.6745	79.0000
211.2132	400.6519	-48.3738	35112.0111	61.0000
164.2487	351.4125	99.1786	35390.6079	77.0000
218.9536	443.2895	59.5214	35654.7041	79.0000
198.5845	335.6461	32.7487	35904.2997	68.0000
169.8399	298.6505	160.3417	36141.6280	74.0000
199.9734	379.5534	170.2899	36375.6224	78.0000
222.7631	403.6921	33.6954	36608.5160	78.0000
193.6828	346.8651	-9.2588	36840.3090	69.0000
168.8978	329.0530	93.5530	37072.4670	72.0000
176.6010	341.7739	173.0080	37310.8527	73.0000
188.0853	350.6704	129.7980	37556.9318	74.0000
189.8616	323.1932	66.8657	37810.7042	72.0000
161.7391	345.3583	246.3785	38075.6233	77.0000
199.1013	369.7684	165.0130	38365.5022	79.0000
210.0817	358.8964	58.7697	38683.7941	79.0000
209.0023	345.2535	5.8322	39030.4989	77.0000

206.3940	361.4278	320.7691	39395.4749	79.0000
213.9096	370.4482	387.6893	39738.1542	80.0000
263.7623	384.4757	37.2664	40048.3951	83.0000
307.9124	404.4428	-461.8926	40326.1974	83.0000
312.1096	398.6133	-107.9048	40578.2225	86.0000
298.1894	391.2981	-98.7567	40831.1154	83.0000
287.2980	365.3182	-19.9630	41091.5374	81.0000
280.7760	362.4758	60.3736	41359.4884	79.0000
245.6513	387.2271	-23.0301	41632.2870	82.0000
272.3042	410.6195	-27.7743	41899.2068	81.0000
290.3312	420.5160	-55.2586	42157.5663	85.0000
317.2774	409.6105	-96.3992	42407.3655	81.0000
257.0929	418.6152	-38.8788	42650.0593	84.0000
306.0169	446.9128	-63.9062	42891.4677	84.0000
331.5067	458.1556	-89.4128	43133.0456	85.0000
332.4704	444.9966	-146.6204	43374.7930	80.0000
279.4593	429.5374	-80.2990	43613.1352	82.0000
289.5904	454.2136	-24.1340	43833.7735	83.0000
305.2567	446.7884	-77.5375	44033.1333	82.0000
280.8233	420.1235	-110.1644	44211.2145	79.0000
227.8211	409.4676	-113.5688	44372.6699	80.0000
239.2235	430.8893	-134.2523	44536.1108	80.0000
224.4797	428.9981	-191.9582	44706.1900	83.0000
235.0185	417.7177		44882.9074	81.3000
			45065.7091	83.1000
			45252.3792	
			45442.3636	
			45635.6625	
			45833.8689	
			46043.3559	
			46265.7165	
			46500.9508	
			46748.4636	
			47005.8739	
			47272.5865	
			47548.6012	
			47832.5702	
			48119.1011	
			48406.8460	
			48695.8047	
			48986.5056	
			49281.0614	
			49580.0003	
			49883.3223	
			50190.8464	
			50501.8479	
			50816.1459	
			51133.7404	
			51454.2391	
			51776.0736	
			52098.8517	
			52422.5734	
			52747.8098	
			53076.8452	
			53410.2506	
			53748.0260	
			54088.8519	

54427.4498
54762.5002
55094.0030
55429.0406
55795.9415
56201.7879
56646.5799
57103.6707
57466.4739
57708.3427
57829.2770

TAXBR	TAXB	CGR	SELICR	PGEN
#####	#####		-22.6426	0.0000
#####	#####		-30.5661	0.0000
#####	#####		-18.6470	0.0000
#####	#####		-31.9213	0.0000
0.2413	0.0004		-8.8466	0.0000
0.2281	0.0005		-7.3116	0.0000
0.2370	0.0006		-1.8113	0.0000
0.2915	0.0008		11.3856	0.0000
0.2530	0.0008		-1.5844	0.0000
0.2371	0.0010		-4.5229	0.0000
0.2221	0.0012		20.0625	0.0000
0.3241	0.0018		30.6924	0.0000
0.3287	0.0020		-2.2781	0.0000
0.2775	0.0024		43.5932	0.0000
0.2415	0.0028		-12.5829	0.0000
0.2611	0.0041		6.3117	0.0000
0.2576	0.0050		7.3686	0.0000
0.2628	0.0073		-2.1895	0.0000
0.2330	0.0085		11.5178	0.0000
0.2314	0.0115		-2.3905	0.0000
0.2481	0.0179		8.5112	0.0000
0.2310	0.0233		36.8117	0.0000
0.2395	0.0328		-17.8979	0.0000
0.2373	0.0453		-27.5302	0.0001
0.1599	0.0453	230.0484	-7.0393	0.0001
0.2602	0.0866	640.6385	-1.2813	0.0001
0.2807	0.0985	618.4954	3.7880	0.0001
0.3345	0.1249	670.7718	-7.5352	0.0001
0.2860	0.1331	529.4056	3.4754	0.0001
0.2244	0.2026	539.8351	-18.8384	0.0003
0.2390	0.2935	442.9764	13.2928	0.0004
0.2429	0.4014	684.4563	-9.6940	0.0005
0.2293	0.5683	582.6885	-1.4540	0.0008
0.2123	0.9581	491.0395	2.2340	0.0014
0.2189	1.7838	412.2177	11.0454	0.0025
0.2479	3.9112	682.1709	18.1350	0.0052
0.1750	4.8558	267.3505	109.6585	0.0098
0.2334	9.9267	635.4052	-4.7750	0.0130
0.2194	22.2689	481.3859	38.0860	0.0306
0.2509	69.2957	866.3634	92.8716	0.0875
0.2591	298.0534	548.4488	-9.6182	0.4110
0.4100	908.1437	682.1204	-37.3730	0.8014
0.2706	915.4449	545.3678	5.6383	1.1131
0.2701	1296.8012	452.0631	34.2705	1.6746
0.2581	1847.1820	613.0269	-33.7331	2.7220
0.2679	2831.2025	583.5633	33.5535	3.5441
0.2373	3727.6778	573.5496	18.9662	5.0577
0.2354	6321.8073	509.7726	75.8176	9.2663
0.2340	11382.4165	584.9065	50.1048	17.8655
0.2537	22816.0364	520.5718	20.5448	31.5343
0.2459	42429.0007	505.8886	42.7805	59.2543
0.2527	83355.8548	733.2949	21.8478	116.0561
0.2607	164340.7614	599.5302	17.6041	235.8376
0.2587	377117.8222	604.1980	28.0274	510.2785
0.2331	812307.7315	497.6746	14.8009	1196.6795
0.2596	2212803.5730	697.4208	31.5412	3008.4640

0.2673	5808588.8489	486.8033	19.2198	8454.4824
0.2820	18924826.9501	708.2095	36.6940	24780.2314
0.2684	33635505.5409	544.8330	18.1964	43978.7587
0.2893	39059184.1012	666.8940	17.0986	46908.0027
0.2866	43016415.3115	683.7766	30.5566	48775.9905
0.2874	46209020.3500	471.6600	25.0959	51269.7859
0.2640	44203139.3857	599.1257	29.2823	53660.0909
0.2846	47763526.3196	684.4277	17.8368	54144.9628
0.3043	53997585.6290	660.1169	20.3862	55781.2028
0.2825	54335999.7436	603.1169	10.4595	57259.4060
0.2634	54152536.4564	537.6323	17.6984	58703.8496
0.2974	60509148.1111	671.7820	19.1017	59167.4927
0.2896	58570605.2823	629.4711	13.0822	60914.0045
0.2812	61443956.1089	582.1843	16.2287	62100.6065
0.2757	61182798.1135	678.9043	19.6913	62610.0980
0.3083	68271493.7015	648.8498	30.4251	63557.1387
0.3134	67890223.8238	743.6266	22.3695	64646.5894
0.2720	63014711.8116	626.0680	15.4937	64822.4642
0.2796	64401784.4405	587.9326	30.8405	64667.2286
0.2928	64739564.0721	641.2047	35.2406	64731.7995
0.3017	69474241.9108	639.7527	20.2049	68263.7427
0.2622	65688533.0348	610.3137	24.0968	70240.5281
0.2784	72071693.9288	671.1385	12.7660	72810.8357
			7.1092	76854.9239
			15.2624	79073.7767
			16.5185	79925.8775

EMP	WR	W	PPROD
			0.7196
			0.8664
			1.0766
			1.3374
			1.6305
			1.9662
			2.2791
			2.6457
			3.1291
			3.7697
			4.4751
			5.1583
			6.4355
			8.4369
			11.9999
			16.9175
			22.4132
			29.5833
			39.2544
			54.5141
			75.4364
			96.5085
			125.3935
			173.9916
			261.8550
			278.2625
			283.7893
			301.2753
			394.3233
			706.7715
			1021.1233
			1405.7177
			2271.2842
			3896.9557
			7189.0723
			14721.1200
			27381.4719
			35394.0857
			84422.2054
			244593.0817
			1167193.4544
			2256899.5209
			3065729.8534
			4618000.9628
			7516372.6398
			9734014.2380
			13675674.5216
			25131452.4554
			48411901.7027
			83846947.7741
			158978797.7201
			312452611.8771
			624890776.2327
			1350579225.6719
			3167267254.3591
			7929499330.6120
85.0167			4.4751
86.1000			5.1583
84.0767			6.4355
83.9400			8.4369
84.2267			11.9999
84.6733			16.9175
85.0633			22.4132
87.1067			29.5833
88.9800			39.2544
91.1833			54.5141
89.9767			75.4364
91.1600			96.5085
91.9067			125.3935
94.0767			173.9916
92.9933			261.8550
95.9367			278.2625
98.7967			283.7893
100.6433			301.2753
99.6433			394.3233
99.7567			706.7715
100.8367			1021.1233
102.2833			1405.7177
101.4467			2271.2842
102.3133			3896.9557
105.2000			7189.0723
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104.6867			27381.4719
105.1733			35394.0857
108.4500			84422.2054
109.2167			244593.0817
107.5467			1167193.4544
108.0267			2256899.5209
112.1233			3065729.8534
113.7367			4618000.9628
97.9678			7516372.6398
98.7062			9734014.2380
100.1619			13675674.5216
99.9677			25131452.4554
97.9722	93.7443	1674.7871	48411901.7027
97.6529	95.0581	2997.5940	83846947.7741
98.6075	98.8290	5856.0477	158978797.7201
100.2262	102.6601	11914.3346	312452611.8771
99.1683	100.2875	23651.5752	624890776.2327
99.1567	100.7593	51415.3011	1350579225.6719
100.2369	98.5257	117903.6453	3167267254.3591
101.4381	101.9348	306667.1768	7929499330.6120

100.6316	97.5703	824906.3376	22095351784.7849
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106.2305	114.7331	6212220.4210	125447129879.0170
105.1929	112.1207	6254227.1110	127568673034.9540
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106.7798	112.6267	6860541.1917	139016036114.6130
107.4560	115.1073	7148232.6373	141623574774.3000
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107.4978	108.8785	7057771.9384	147137160678.4310
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108.1327	108.1479	7000605.6628	146892692440.9160
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107.8814	97.7219	7115215.0765	173405548515.4520
109.8533	98.9430	7604259.8028	187209364831.9080
109.5471	97.9246	7743270.3235	193532515281.9530
112.4209			195375706829.1310