

**BYLAAG: E-VIEWS RESULTATE VAN DIE MODEL VAN
VOORRAADINVESTERING IN SUID-AFRIKA**

1 Die langtermynskatting

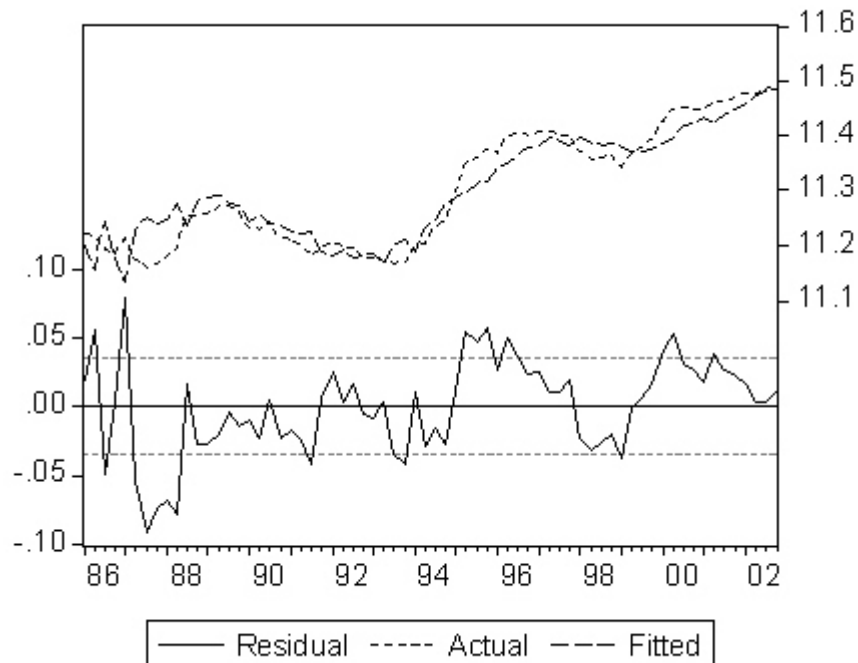
1.1 Resultate van die skatting

Dependent Variable: LOG(I)
Method: Least Squares

Sample: 1986:1 2002:4
Included observations: 68

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(Q)	0.289613	0.074169	3.904741	0.0002
LOG(S)	0.688721	0.079097	8.707274	0.0000
R-squared	0.897075	Mean dependent var	11.30288	
Adjusted R-squared	0.895516	S.D. dependent var	0.108205	
S.E. of regression	0.034976	Akaike info criterion	-3.839331	
Sum squared resid	0.080740	Schwarz criterion	-3.774052	
Log likelihood	132.5373	Durbin-Watson stat	0.935867	

1.2 Die werklike waardes, geskatte waardes en reswaarde van die langtermynskatting



1.3 Die ADF-waarde van die reswaarde van die langtermynskatting

ADF Test Statistic	-4.477544	1% Critical Value*	-3.5297
		5% Critical Value	-2.9048
		10% -Critical Value	-2.5896

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

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(RESID01)

Method: Least Squares

Sample(adjusted): 1986:2 2002:4

Included observations: 67 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-0.470166	0.105005	-4.477544	0.0000
C	-0.000217	0.003642	-0.059482	0.9528
R-squared	0.235729	Mean dependent var	-9.62E-05	
Adjusted R-squared	0.223971	S.D. dependent var	0.033836	
S.E. of regression	0.029807	Akaike info criterion	-4.158761	
Sum squared resid	0.057749	Schwarz criterion	-4.092950	
Log likelihood	141.3185	F-statistic	20.04840	
Durbin-Watson stat	2.061410	Prob(F-statistic)	0.000031	

1.4 Die MacKinnon kritiese waardes van die ADF-waarde om vir die nul hipotese van geen kointegrasie te toets

n=3 Model	Persentasie waarskynlikheid	
		Waarde
Konstante	1	-4.5109
	5	-3.8686
	10	-3.5442
Konstante en neiging	1	-4.9504
	5	-4.2990
	10	-3.9706

2 Die korttermyn skatting

2.1 Resultate van die skatting

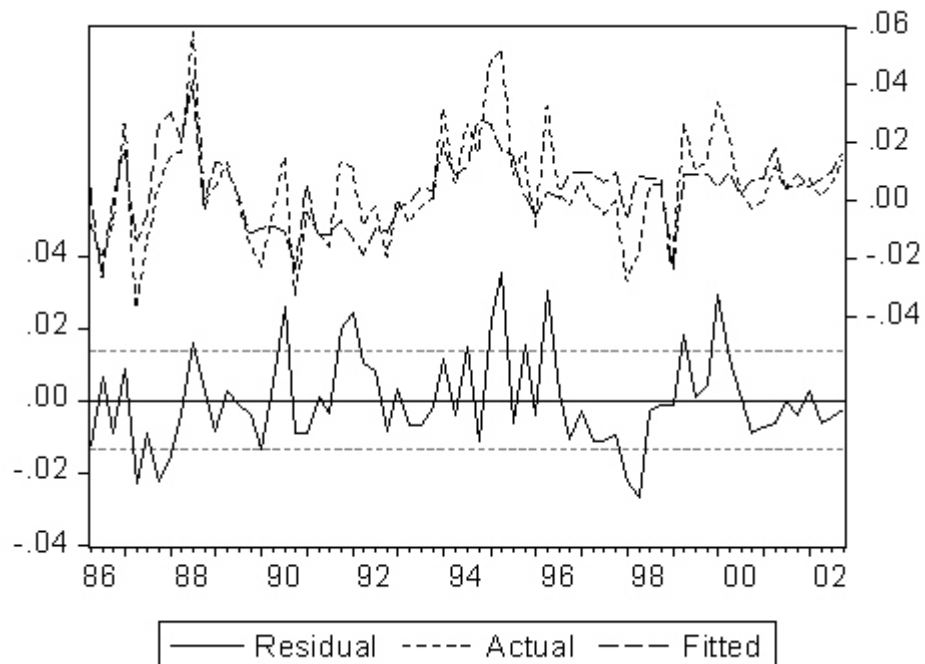
Dependent Variable: DLOG(I)
Method: Least Squares

Sample(adjusted): 1986:2 2002:4

Included observations: 67 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-0.201461	0.049856	-4.052580	0.0001
DLOG(U(-1))	0.080374	0.042258	1.901972	0.0620
DLOG(G_S(-1))	0.546729	0.156976	3.482874	0.0009
DLOG(R(-2))	-0.066428	0.029942	-2.218541	0.0303
DLOG(P(-3))	-0.212407	0.089753	-2.366577	0.0212
DLOG(Q(-2))	0.527176	0.167815	3.141407	0.0026
C	0.005767	0.003333	1.730424	0.0887
R-squared	0.505009	Mean dependent var	0.004114	
Adjusted R-squared	0.455510	S.D. dependent var	0.018508	
S.E. of regression	0.013657	Akaike info criterion	-5.650502	
Sum squared resid	0.011191	Schwarz criterion	-5.420161	
Log likelihood	196.2918	F-statistic	10.20240	
Durbin-Watson stat	1.528573	Prob(F-statistic)	0.000000	

2.2 Die werklike waardes, geskatte waardes en reswaarde van die korttermynskatting



2.3 Diagnostiese toetse,

2.3.1 Die ADF-waarde van die reswaarde van die korttermynskatting

ADF Test Statistic	-6.396613	1% Critical Value*	-3.5312
		5% Critical Value	-2.9055
		10% Critical Value	-2.5899

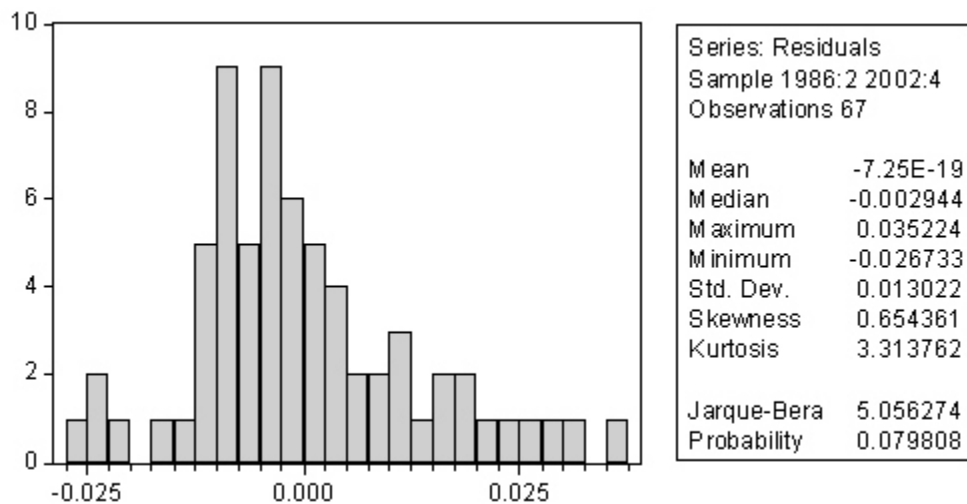
*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(RESID01ECM)
 Method: Least Squares

Sample(adjusted): 1986:3 2002:4
 Included observations: 66 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01ECM(-1)	-0.773875	0.120982	-6.396613	0.0000
C	0.000171	0.001578	0.108332	0.9141
R-squared	0.389992	Mean dependent var	0.000143	
Adjusted R-squared	0.380461	S.D. dependent var	0.016282	
S.E. of regression	0.012816	Akaike info criterion	-5.846400	
Sum squared resid	0.010512	Schwarz criterion	-5.780047	
Log likelihood	194.9312	F-statistic	40.91666	
Durbin-Watson stat	2.032189	Prob(F-statistic)	0.000000	

2.3.2 Histogram normaliteit



2.3.3 ARCH heteroskedastisiteit

ARCH Test:

F-statistic	0.234316	Probability	0.917923
Obs*R-squared	1.001871	Probability	0.909512

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Sample(adjusted): 1987:2 2002:4

Included observations: 63 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000171	5.77E-05	2.957071	0.0045
RESID^2(-1)	0.037494	0.131258	0.285647	0.7762
RESID^2(-2)	-0.014241	0.130900	-0.108790	0.9137
RESID^2(-3)	-0.094400	0.130888	-0.721229	0.4737
RESID^2(-4)	0.078798	0.131945	0.597203	0.5527
R-squared	0.015903	Mean dependent var	0.000172	
Adjusted R-squared	-0.051966	S.D. dependent var	0.000263	
S.E. of regression	0.000270	Akaike info criterion	-13.52143	
Sum squared resid	4.22E-06	Schwarz criterion	-13.35134	
Log likelihood	430.9251	F-statistic	0.234316	
Durbin-Watson stat	1.940100	Prob(F-statistic)	0.917923	

2.3.4 White heteroskedastisiteit

White Heteroskedasticity Test:

F-statistic	0.301256	Probability	0.986547
Obs*R-squared	4.203931	Probability	0.979469

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Sample: 1986:2 2002:4

Included observations: 67

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.50E-05	8.73E-05	0.974037	0.3344
RESID01(-1)	-0.000373	0.001055	-0.353491	0.7251
RESID01(-1)^2	0.008439	0.024029	0.351193	0.7268
DLOG(U(-1))	-0.000673	0.000859	-0.783285	0.4369
(DLOG(U(-1)))^2	-0.004530	0.015011	-0.301787	0.7640
DLOG(G_S(-1))	0.000731	0.003854	0.189719	0.8502
(DLOG(G_S(-1)))^2	-0.012616	0.209946	-0.060090	0.9523
DLOG(R(-2))	-0.000297	0.000684	-0.433754	0.6662
(DLOG(R(-2)))^2	-0.002195	0.004171	-0.526354	0.6008
DLOG(P(-3))	0.005878	0.004920	1.194854	0.2374
(DLOG(P(-3)))^2	-0.075763	0.066704	-1.135809	0.2611
DLOG(Q(-2))	0.002265	0.003588	0.631263	0.5305
(DLOG(Q(-2)))^2	0.015764	0.197542	0.079801	0.9367
R-squared	0.062745	Mean dependent var	0.000167	
Adjusted R-squared	-0.145534	S.D. dependent var	0.000256	
S.E. of regression	0.000274	Akaike info criterion	-13.39466	
Sum squared resid	4.05E-06	Schwarz criterion	-12.96688	
Log likelihood	461.7210	F-statistic	0.301256	
Durbin-Watson stat	1.840923	Prob(F-statistic)	0.986547	

2.3.5 Breusch-Godfrey reekskorrelasie-LM-toets

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.681362	Probability	0.167161
Obs*R-squared	7.183765	Probability	0.126490

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-0.087638	0.061084	-1.434702	0.1569
DLOG(U(-1))	-0.012569	0.041943	-0.299662	0.7655
DLOG(G_S(-1))	0.082719	0.161674	0.511644	0.6109
DLOG(R(-2))	-0.010641	0.029998	-0.354707	0.7241
DLOG(P(-3))	-0.005318	0.089459	-0.059448	0.9528
DLOG(Q(-2))	-0.067363	0.167533	-0.402088	0.6892
C	-1.54E-05	0.003311	-0.004642	0.9963
RESID(-1)	0.282642	0.144184	1.960285	0.0549
RESID(-2)	0.222784	0.148096	1.504324	0.1381
RESID(-3)	0.038246	0.139182	0.274793	0.7845
RESID(-4)	-0.003506	0.134675	-0.026036	0.9793
R-squared	0.107220	Mean dependent var	-7.25E-19	
Adjusted R-squared	-0.052205	S.D. dependent var	0.013022	
S.E. of regression	0.013357	Akaike info criterion	-5.644515	
Sum squared resid	0.009991	Schwarz criterion	-5.282550	
Log likelihood	200.0913	F-statistic	0.672545	
Durbin-Watson stat	2.040803	Prob(F-statistic)	0.744825	

2.3.6 Ramsey-reset-toets

Ramsey RESET Test:

F-statistic	0.394508	Probability	0.675806
Log likelihood ratio	0.905306	Probability	0.635939

Test Equation:

Dependent Variable: DLOG(I)

Method: Least Squares

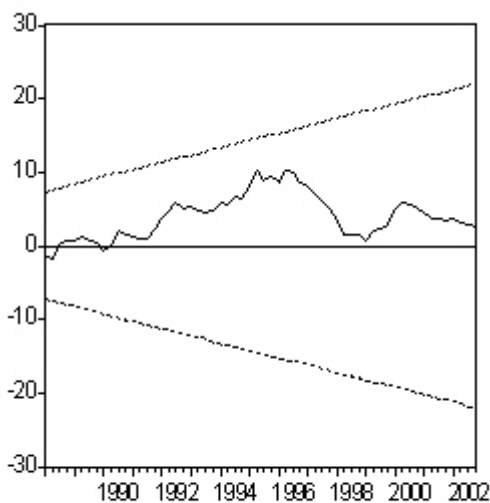
Sample: 1986:2 2002:4

Included observations: 67

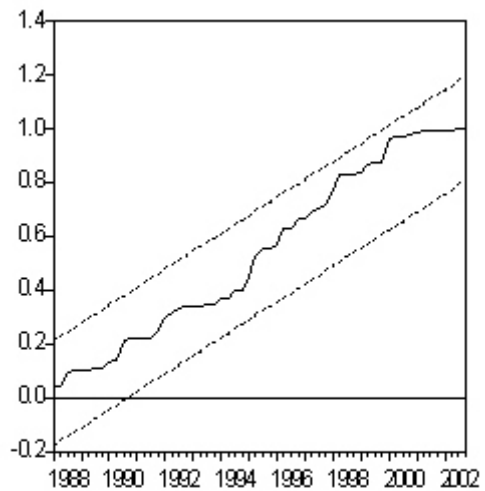
Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-0.161868	0.069108	-2.342253	0.0226
DLOG(U(-1))	0.069409	0.044776	1.550122	0.1266
DLOG(G_S(-1))	0.449851	0.195238	2.304114	0.0248
DLOG(R(-2))	-0.058340	0.032437	-1.798548	0.0773
DLOG(P(-3))	-0.214472	0.093813	-2.286158	0.0259
DLOG(Q(-2))	0.459102	0.198960	2.307508	0.0246
C	0.005782	0.003509	1.647808	0.1048
FITTED^2	1.244073	10.11630	0.122977	0.9026
FITTED^3	203.6316	355.0185	0.573580	0.5685

R-squared	0.511653	Mean dependent var	0.004114
Adjusted R-squared	0.444294	S.D. dependent var	0.018508
S.E. of regression	0.013797	Akaike info criterion	-5.604313
Sum squared resid	0.011041	Schwarz criterion	-5.308160
Log likelihood	196.7445	F-statistic	7.595992
Durbin-Watson stat	1.577967	Prob(F-statistic)	0.000001

2.3.7 CUSUM-toetse



— CUSUM ---- 5%Significance



— CUSUM of Squares ---- 5%Significance

2.4 Die derde-stap-prosedure van Engle en Yoo

Dependent Variable: RESID02ECM
 Method: Least Squares

Sample(adjusted): 1986:2 2002:4
 Included observations: 67 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
(0.201461)*(LOG(Q))	0.216893	0.135720	1.598089	0.1149
(0.201461)*(LOG(S))	-0.231310	0.144739	-1.598118	0.1149
R-squared	0.037807	Mean dependent var	1.11E-18	
Adjusted R-squared	0.023004	S.D. dependent var	0.013043	
S.E. of regression	0.012892	Akaike info criterion	-5.835014	
Sum squared resid	0.010803	Schwarz criterion	-5.769203	
Log likelihood	197.4730	Durbin-Watson stat	1.539417	

2.5 Die berekening van die aangepaste koëffisiënte en t-waardes

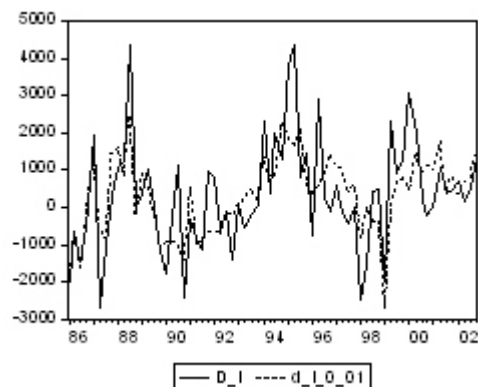
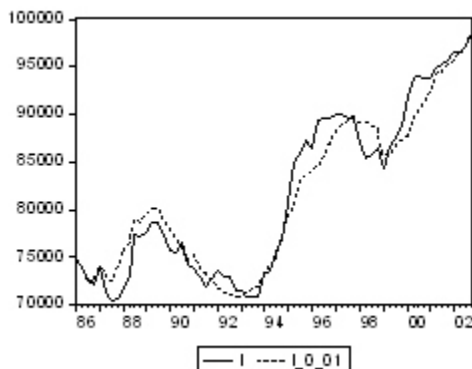
Variable	Engle en Yoo koëffisiënte	Engle en Granger koëffisiënte	Nuwe koëffisiënte	Engle en Yoo Std. fout	Nuwe t-waardes
	a	b	a+b	c	(a+b)/c
LOG(Q)	0.21689	0.28961	0.50651	0.13572	3.7319 > 1.96
LOG(S)	-0.23131	0.68872	0.45741	0.14474	3.1602 > 1.96

2.6 Die model

$$\text{LOG}(I) = + 0.005767173255 + 0.08037429731 * \text{DLOG}(U(-1)) + 0.546729735 * \text{DLOG}(G_S(-1)) - 0.0664289227 * \text{DLOG}(R(-2)) - 0.2124070937 * \text{DLOG}(P(-3)) + 0.527176855 * \text{DLOG}(Q(-2)) - (0.201461403 * (\log(i(-1)) - 0.50651 * \text{LOG}(Q(-1)) - 0.45741 * \text{LOG}(S(-1)))) + \text{LOG}(I(-1))$$

$$d_i = d(i)$$

2.7 Die werklike waardes, geskatte waardes en reswaarde van die model



3 E-views resultate van die SARB95-model van voorraad-investering in Suid-Afrika

Dependent Variable: D_I				
Method: Least Squares				
Sample: 1975:1 2002:4				
Included observations: 112				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
S(-1)	0.146384	0.036960	3.960573	0.0001
T*S(-1)	0.000226	9.60E-05	2.357465	0.0203
I(-2)	-0.181253	0.029404	-6.164151	0.0000
S-G_S	-0.128004	0.038581	-3.317834	0.0012
C	2595.999	1931.763	1.343849	0.1819
PDL01	-55.58614	8.715783	-6.377641	0.0000
PDL02	7.867614	2.290983	3.434165	0.0009
R-squared	0.465504	Mean dependent var	121.0982	
Adjusted R-squared	0.434961	S.D. dependent var	1732.735	
S.E. of regression	1302.481	Akaike info criterion	17.24239	
Sum squared resid	1.78E+08	Schwarz criterion	17.41230	
Log likelihood	-958.5739	F-statistic	15.24109	
Durbin-Watson stat	1.595565	Prob(F-statistic)	0.000000	
Lag Distribution	i	Coefficient	Std. Error	T-Statistic
* .	0	-46.3218	7.26315	-6.37764
* .	1	-74.1149	11.6210	-6.37764
* .	2	-83.3792	13.0737	-6.37764
* .	3	-74.1149	11.6210	-6.37764
* .	4	-46.3218	7.26315	-6.37764
Sum of Lags		-324.252	50.8421	-6.37764
Lag Distribution	i	Coefficient	Std. Error	T-Statistic
. *	0	6.55634	1.90915	3.43417
. *	1	10.4902	3.05464	3.43417
. *	2	11.8014	3.43647	3.43417
. *	3	10.4902	3.05464	3.43417
. *	4	6.55634	1.90915	3.43417
Sum of Lags		45.8944	13.3641	3.43417