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# **LAMPIRAN**

## Lampiran 1. Hasil Uji Stasioneritas Data

Null Hypothesis: PERUMAHAN has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=8)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.918758	0.0049
Test critical values:		
1% level	-3.639407	
5% level	-2.951125	
10% level	-2.614300	

\*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(PERUMAHAN)

Method: Least Squares

Date: 08/06/21 Time: 12:24

Sample (adjusted): 3/21/2020 4/23/2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PERUMAHAN(-1)	-0.582436	0.148628	-3.918758	0.0004
C	8.734278	2.236836	3.904747	0.0005
R-squared	0.324277	Mean dependent var	0.117647	
Adjusted R-squared	0.303160	S.D. dependent var	2.868478	
S.E. of regression	2.394517	Akaike info criterion	4.641262	
Sum squared resid	183.4788	Schwarz criterion	4.731048	
Log likelihood	-76.90146	Hannan-Quinn criter.	4.671882	
F-statistic	15.35666	Durbin-Watson stat	2.308046	
Prob(F-statistic)	0.000440			

## Lampiran 2. Korelogram Plot ACF dan PACF

Date: 08/06/21 Time: 12:27  
 Sample (adjusted): 3/20/2020 4/23/2020  
 Included observations: 35 after adjustments

	Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
1	0.414	0.414	6.5192	0.011		
2	0.292	0.146	9.8619	0.007		
3	0.102	-0.075	10.286	0.016		
4	0.027	-0.037	10.316	0.035		
5	-0.020	-0.018	10.333	0.066		
6	-0.003	0.027	10.334	0.111		
7	0.111	0.146	10.903	0.143		
8	-0.020	-0.135	10.921	0.206		
9	-0.004	-0.021	10.922	0.281		
10	-0.057	-0.028	11.092	0.350		
11	-0.034	0.016	11.154	0.430		
12	-0.058	-0.022	11.343	0.500		
13	-0.107	-0.103	12.015	0.526		
14	0.105	0.214	12.694	0.551		
15	-0.006	-0.074	12.696	0.626		
16	0.131	0.117	13.867	0.609		
17	-0.058	-0.185	14.105	0.660		
18	-0.107	-0.124	14.982	0.663		
19	-0.205	-0.076	18.370	0.498		
20	-0.300	-0.169	26.141	0.161		
21	-0.296	-0.161	34.270	0.034		
22	-0.146	0.153	36.383	0.028		
23	-0.115	-0.122	37.799	0.027		
24	-0.154	-0.061	40.586	0.018		
25	-0.085	-0.007	41.515	0.020		
26	-0.035	0.061	41.696	0.026		
27	-0.027	0.068	41.815	0.034		
28	0.014	-0.032	41.849	0.045		
29	0.009	-0.022	41.868	0.058		
30	-0.004	-0.133	41.873	0.073		

### Lampiran 3. Estimasi Parameter Model ARIMA (1,0,0)

Dependent Variable: PERUMAHAN  
 Method: ARMA Maximum Likelihood (OPG - BHHH)  
 Date: 08/06/21 Time: 12:28  
 Sample: 3/20/2020 4/23/2020  
 Included observations: 35  
 Convergence achieved after 6 iterations  
 Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.56464	0.915742	15.90475	0.0000
AR(1)	0.466641	0.205040	2.275857	0.0297
SIGMASQ	6.008155	0.876462	6.855008	0.0000
R-squared	0.199479	Mean dependent var	14.74286	
Adjusted R-squared	0.149446	S.D. dependent var	2.779577	
S.E. of regression	2.563478	Akaike info criterion	4.809440	
Sum squared resid	210.2854	Schwarz criterion	4.942756	
Log likelihood	-81.16520	Hannan-Quinn criter.	4.855461	
F-statistic	3.986985	Durbin-Watson stat	2.132883	
Prob(F-statistic)	0.028442			
Inverted AR Roots	.47			

#### Lampiran 4. Estimasi Parameter Model ARIMA (1,0,1)

Dependent Variable: PERUMAHAN  
 Method: ARMA Maximum Likelihood (OPG - BHHH)  
 Date: 08/06/21 Time: 12:29  
 Sample: 3/20/2020 4/23/2020  
 Included observations: 35  
 Convergence achieved after 43 iterations  
 Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.24618	1.288237	11.05867	0.0000
AR(1)	0.778738	0.204582	3.806481	0.0006
MA(1)	-0.365255	0.323382	-1.129483	0.2674
SIGMASQ	5.737813	0.911236	6.296733	0.0000
R-squared	0.235499	Mean dependent var		14.74286
Adjusted R-squared	0.161515	S.D. dependent var		2.779577
S.E. of regression	2.545226	Akaike info criterion		4.825136
Sum squared resid	200.8235	Schwarz criterion		5.002890
Log likelihood	-80.43988	Hannan-Quinn criter.		4.886496
F-statistic	3.183111	Durbin-Watson stat		2.028974
Prob(F-statistic)	0.037504			
Inverted AR Roots	.78			
Inverted MA Roots	.37			

### Lampiran 5. Estimasi parameter Model ARIMA (0,0,1)

Dependent Variable: PERUMAHAN  
 Method: ARMA Maximum Likelihood (OPG - BHHH)  
 Date: 08/06/21 Time: 12:29  
 Sample: 3/20/2020 4/23/2020  
 Included observations: 35  
 Convergence achieved after 27 iterations  
 Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.69401	0.750466	19.57985	0.0000
MA(1)	0.308389	0.231955	1.329522	0.1931
SIGMASQ	6.534051	0.961560	6.795260	0.0000
R-squared	0.129409	Mean dependent var	14.74286	
Adjusted R-squared	0.074997	S.D. dependent var	2.779577	
S.E. of regression	2.673316	Akaike info criterion	4.889188	
Sum squared resid	228.6918	Schwarz criterion	5.022504	
Log likelihood	-82.56079	Hannan-Quinn criter.	4.935209	
F-statistic	2.378322	Durbin-Watson stat	1.712036	
Prob(F-statistic)	0.108900			
Inverted MA Roots	-.31			

**Lampiran 6. Hasil Uji Asumsi Residual (*White Noise*) Model ARIMA  
(1,0,0)**

Date: 08/06/21 Time: 12:31  
 Sample (adjusted): 3/20/2020 4/23/2020  
 Q-statistic probabilities adjusted for 1 ARMA term

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
-0.132	-0.132	1	-0.132	0.6682	
0.141	0.126	2	0.141	1.4519	0.228
-0.027	0.006	3	-0.027	1.4816	0.477
-0.016	-0.038	4	-0.016	1.4929	0.684
-0.027	-0.032	5	-0.027	1.5239	0.822
-0.058	-0.059	6	-0.058	1.6746	0.892
0.182	0.182	7	0.182	3.2047	0.783
-0.102	-0.050	8	-0.102	3.6992	0.814
0.037	-0.034	9	0.037	3.7674	0.877
-0.060	-0.044	10	-0.060	3.9568	0.914
0.008	0.003	11	0.008	3.9604	0.949
-0.005	0.021	12	-0.005	3.9616	0.971
-0.185	-0.191	13	-0.185	5.9859	0.917
0.192	0.127	14	0.192	8.2653	0.826
-0.148	-0.053	15	-0.148	9.6756	0.785
0.225	0.179	16	0.225	13.130	0.592

**Lampiran 7. Output Hasil Estimasi Parameter Model ARIMA  
Intervensi Orde b=0, r=0, s=8**

The ARIMA Procedure								
Conditional Least Squares Estimation								
Parameter	Estimate	Standard Error	t Value	Approx Pr >  t	Lag	Variable	Shift	
AR1,1	0.98625	0.02983	33.06	<.0001	1	perumahan	0	
NUM1	9.27688	3.23113	2.87	0.0059	0	Intervensi	0	
NUM1,1	6.73956	3.23652	2.08	0.0422	8	Intervensi	0	

Variance Estimate	10.20471
Std Error Estimate	3.194481
AIC	291.9173
SBC	297.9934
Number of Residuals	56

\* AIC and SBC do not include log determinant.

**Lampiran 8. Output Hasil Uji Diagnostik Model ARIMA Intervensi**

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	3.16	5	0.6759	-0.202	0.003	0.021	0.078	-0.071	0.010
12	7.42	11	0.7644	0.021	-0.126	-0.005	0.083	0.130	-0.141
18	12.16	17	0.7901	0.156	0.022	-0.167	0.016	0.087	0.007
24	15.79	23	0.8642	-0.155	0.052	0.084	-0.051	0.039	0.046

**Lampiran 9. Output Hasil Estimasi Parameter dan Uji Diagnostik Model ARIMA Intervensi Orde b=0, r=0, s=0**

**The ARIMA Procedure**

Conditional Least Squares Estimation								
Parameter	Estimate	Standard Error	t Value	Approx Pr >  t	Lag	Variable	Shift	
AR1,1	0.97441	0.03066	31.78	<.0001	1	perumahan	0	
NUM1	9.36884	3.08011	3.04	0.0034	0	Intervensi	0	
	<b>Variance Estimate</b>				9.313026			
	<b>Std Error Estimate</b>				3.051725			
	<b>AIC</b>				326.4027			
	<b>SBC</b>				330.7205			
	<b>Number of Residuals</b>				64			

\* AIC and SBC do not include log determinant.

**Autocorrelation Check of Residuals**

To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations						
6	9.45	5	0.0922	-0.357	0.019	0.088	0.058	-0.019	-0.032	
12	15.27	11	0.1706	0.189	-0.152	-0.018	0.109	0.058	-0.049	
18	34.74	17	0.0067	-0.138	0.325	-0.275	0.125	0.100	0.039	
24	59.37	23	<.0001	-0.151	0.006	0.387	-0.276	0.016	0.031	

**Lampiran 10. Output Hasil Estimasi Parameter dan Uji Diagnostik Model ARIMA Intervensi Orde b=1, r=0, s=0**

**The ARIMA Procedure**

Conditional Least Squares Estimation								
Parameter	Estimate	Standard Error	t Value	Approx Pr >  t	Lag	Variable	Shift	
AR1,1	0.99402	0.02301	43.20	<.0001	1	perumahan	0	
NUM1	-2.86017	3.28301	-0.87	0.3871	0	Intervensi	1	
	Variance Estimate				10.4474			
	Std Error Estimate				3.232244			
	AIC				328.5741			
	SBC				332.8604			
	Number of Residuals				63			

\* AIC and SBC do not include log determinant.

**Autocorrelation Check of Residuals**

To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations						
6	10.26	5	0.0682	-0.315	0.009	0.022	0.132	-0.180	0.049	
12	16.22	11	0.1331	0.169	-0.203	0.009	0.052	0.071	-0.050	
18	32.67	17	0.0124	-0.156	0.261	-0.247	0.163	0.092	0.073	
24	44.84	23	0.0042	-0.211	0.120	0.105	-0.224	0.076	0.007	

**Lampiran 11. Output Hasil Estimasi Parameter dan Uji Diagnostik Model ARIMA Intervensi Orde b=3, r=0, s=2**

**The ARIMA Procedure**

Conditional Least Squares Estimation								
Parameter	Estimate	Standard Error	t Value	Approx Pr >  t	Lag	Variable	Shift	
AR1,1	0.98223	0.03192	30.77	<.0001	1	perumahan	0	
NUM1	1.45500	4.04873	0.36	0.7207	0	Intervensi	3	
NUM1,1	1.55659	4.03650	0.39	0.7012	2	Intervensi	3	

  

	Variance Estimate	15.80519	
	Std Error Estimate	3.975574	
	AIC	333.2157	
	SBC	339.4484	
	Number of Residuals	59	

\* AIC and SBC do not include log determinant.

**Autocorrelation Check of Residuals**

To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations							
6	7.49	5	0.1864	-0.339	-0.000	-0.024	0.069	-0.022	-0.004		
12	11.05	11	0.4392	0.162	-0.143	0.008	-0.001	0.063	-0.007		
18	27.59	17	0.0500	-0.081	0.263	-0.245	0.256	-0.033	-0.016		
24	32.35	23	0.0931	-0.087	0.003	0.148	-0.130	0.052	-0.030		

**Lampiran 12. Output Hasil Estimasi Parameter dan Uji Diagnostik Model ARIMA Intervensi Orde b=8, r=0, s=0**

**The ARIMA Procedure**

Conditional Least Squares Estimation								
Parameter	Estimate	Standard Error	t Value	Approx Pr >  t	Lag	Variable	Shift	
AR1,1	0.99888	0.02324	42.97	<.0001	1	perumahan	0	
NUM1	-6.97246	3.44681	-2.02	0.0480	0	Intervensi	8	
	<b>Variance Estimate</b>				11.55506			
	<b>Std Error Estimate</b>				3.399273			
	<b>AIC</b>				297.9234			
	<b>SBC</b>				301.9741			
	<b>Number of Residuals</b>				56			

\* AIC and SBC do not include log determinant.

**Autocorrelation Check of Residuals**

To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations						
6	4.34	5	0.5022	-0.242	-0.018	0.011	0.076	-0.081	-0.029	
12	9.15	11	0.6078	0.099	-0.118	0.004	0.065	0.121	-0.159	
18	15.93	17	0.5287	0.131	0.070	-0.229	0.038	0.099	0.014	
24	19.09	23	0.6959	-0.140	-0.021	0.065	-0.075	0.044	0.052	

**Lampiran 13. Output Hasil Estimasi Parameter dan Uji Diagnostik Model ARIMA Intervensi Orde b=10, r=0, s=5**

**The ARIMA Procedure**

Conditional Least Squares Estimation								
Parameter	Estimate	Standard Error	t Value	Approx Pr >  t	Lag	Variable	Shift	
AR1,1	0.98806	0.03223	30.66	<.0001	1	perumahan	0	
NUM1	1.25766	3.81811	0.33	0.7434	0	Intervensi	10	
NUM1,1	1.75602	3.81155	0.46	0.6472	5	Intervensi	10	

  

Variance Estimate	14.13176
Std Error Estimate	3.759224
AIC	271.733
SBC	277.4085
Number of Residuals	49

\* AIC and SBC do not include log determinant.

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	13.82	5	0.0168	-0.329	0.014	0.031	0.141	-0.208	0.280
12	17.61	11	0.0911	0.016	-0.219	-0.008	0.063	0.059	-0.074
18	21.62	17	0.1996	-0.058	0.155	-0.126	0.055	0.091	0.017
24	35.55	23	0.0458	-0.197	0.269	0.088	-0.183	0.079	0.028

**Lampiran 14. Output Hasil Estimasi Parameter dan Uji Diagnostik Model ARIMA Intervensi Orde b=18, r=0, s=3**

**The ARIMA Procedure**

Conditional Least Squares Estimation								
Parameter	Estimate	Standard Error	t Value	Approx Pr >  t	Lag	Variable	Shift	
AR1,1	0.97701	0.04313	22.66	<.0001	1	perumahan	0	
NUM1	-0.48236	4.92776	-0.10	0.9225	0	Intervensi	18	
NUM1,1	0.51180	4.90932	0.10	0.9175	3	Intervensi	18	

  

	Variance Estimate	23.45903	
	Std Error Estimate	4.843452	
	AIC	260.5949	
	SBC	265.8785	
	Number of Residuals	43	

\* AIC and SBC do not include log determinant.

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	4.49	5	0.4811	-0.254	-0.106	0.074	0.040	-0.086	0.072
12	7.94	11	0.7185	0.114	-0.167	-0.012	0.114	0.043	-0.072
18	15.79	17	0.5388	-0.049	0.294	-0.117	-0.012	0.113	0.005
24	26.52	23	0.2770	-0.147	0.074	0.212	-0.205	0.023	0.080

**Lampiran 15. Syntax Pemodelan ARIMA Intervensi Orde b=0, r=0, s=8**

```
data perumahan;
input perumahan Intervensi;
cards;
9 0
8 0
10 0
13 0
13 0
19 0
14 0
15 0
13 0
14 0
16 0
15 0
15 0
15 0
16 0
13 0
13 0
15 0
15 0
15 0
17 0
14 0
24 0
18 0
16 0
17 0
16 0
16 0
16 0
13 0
14 0
16 0
15 0
14 0
13 0
22 1
19 1
19 1
20 1
```

19 1  
17 1  
18 1  
24 1  
17 1  
18 1  
19 1  
19 1  
19 1  
25 1  
19 1  
17 1

17 1  
19 1  
18 1  
18 1  
17 1  
16 1  
14 1  
15 1  
17 1  
16 1  
15 1  
20 1  
17 1

```
.    1
.    1
.    1
;

proc arima data=perumahan;
    identify var=perumahan crosscorr = Intervensi nlag=12 noint;
run;
    estimate p=(1) input=(0 $ (8) Intervensi) method=cls noconstant;
    forecast lead=34 out=for noint;
run;

proc print data=for;
run;

proc univariate data=for normal;
var residual;
run;
```