

**Lampiran 1. Data Tingkat Hunian Hotel  
di Propinsi DIY Tahun  
1991-2003**

## Lampiran 1

Data Tingkat Hunian Hotel Rata-Rata di Propinsi DIY Tahun 1991-2003

<b>Tahun</b>	<b>Bulan</b>	<b>Wisman</b>
1991	1	27,00
1991	2	30,60
1991	3	25,80
1991	4	29,30
1991	5	27,00
1991	6	31,60
1991	7	31,90
1991	8	29,10
1991	9	27,50
1991	10	26,60
1991	11	27,60
1991	12	33,00
1992	1	25,30
1992	2	30,60
1992	3	23,10
1992	4	27,80
1992	5	26,30
1992	6	28,60
1992	7	31,50
1992	8	31,50
1992	9	29,30
1992	10	27,70
1992	11	26,80
1992	12	32,60
1993	1	26,10
1993	2	25,40
1993	3	27,90
1993	4	27,80
1993	5	29,10
1993	6	38,00
1993	7	37,60
1993	8	38,20
1993	9	31,20
1993	10	30,20
1993	11	32,30
1993	12	34,30

## Lanjutan Lampiran 1

<b>Tahun</b>	<b>Bulan</b>	<b>Wisman</b>
1994	1	31,00
1994	2	27,80
1994	3	32,30
1994	4	27,20
1994	5	30,30
1994	6	34,07
1994	7	36,00
1994	8	31,50
1994	9	32,10
1994	10	35,00
1994	11	30,30
1994	12	35,40
1995	1	32,40
1995	2	25,30
1995	3	28,20
1995	4	25,70
1995	5	35,40
1995	6	36,80
1995	7	37,50
1995	8	30,70
1995	9	31,10
1995	10	36,70
1995	11	28,10
1995	12	33,20
1996	1	25,10
1996	2	22,80
1996	3	23,50
1996	4	26,00
1996	5	29,80
1996	6	34,70
1996	7	36,40
1996	8	34,20
1996	9	33,20
1996	10	31,40
1996	11	30,80
1996	12	34,90

## Lanjutan Lampiran 1

<b>Tahun</b>	<b>Bulan</b>	<b>Wisman</b>
1997	1	28,80
1997	2	33,70
1997	3	29,90
1997	4	25,80
1997	5	25,80
1997	6	36,20
1997	7	37,70
1997	8	34,30
1997	9	32,30
1997	10	33,30
1997	11	34,90
1997	12	36,30
1998	1	27,90
1998	2	28,40
1998	3	27,20
1998	4	29,00
1998	5	25,20
1998	6	24,90
1998	7	32,60
1998	8	27,90
1998	9	28,40
1998	10	31,60
1998	11	28,50
1998	12	28,60
1999	1	28,50
1999	2	30,47
1999	3	30,44
1999	4	29,43
1999	5	30,37
1999	6	31,29
1999	7	35,09
1999	8	35,77
1999	9	35,64
1999	10	35,20
1999	11	35,39
1999	12	33,76

## Lanjutan Lampiran 1

<b>Tahun</b>	<b>Bulan</b>	<b>Wisman</b>
2000	1	35,58
2000	2	29,75
2000	3	30,79
2000	4	30,91
2000	5	31,45
2000	6	36,83
2000	7	36,68
2000	8	34,43
2000	9	34,69
2000	10	36,55
2000	11	35,10
2000	12	32,77
2001	1	32,89
2001	2	22,17
2001	3	27,62
2001	4	26,30
2001	5	27,57
2001	6	29,61
2001	7	31,41
2001	8	27,86
2001	9	25,87
2001	10	27,73
2001	11	25,01
2001	12	30,78
2002	1	27,99
2002	2	29,18
2002	3	32,07
2002	4	24,54
2002	5	29,16
2002	6	32,49
2002	7	31,47
2002	8	29,87
2002	9	28,91
2002	10	27,49
2002	11	19,86
2002	12	28,47

## Lanjutan Lampiran 1

<b>Tahun</b>	<b>Bulan</b>	<b>Wisman</b>
2003	1	24,89
2003	2	20,13
2003	3	19,16
2003	4	20,91
2003	5	21,26
2003	6	23,52
2003	7	26,10
2003	8	23,14
2003	9	23,22
2003	10	21,09
2003	11	17,63
2003	12	26,30

**Lampiran 2. Hasil Pemulusan dengan  
Model *Exponential*  
*Smoothing* Holt-Winter**

## Lampiran 2

## Hasil Pemulusan Data Jumlah Tingkat Hunian Hotel di Propinsi DIY

Tahun	Periode (t)	Jumlah Penghuni Hotel	LEVEL	TREN1	SEAS1	FITS1	RESI1
1991	1	2700	2810,69	14,7731	0,96054	2699,57	0,428
	2	3060	3031,37	35,3641	0,92544	2588,41	471,587
	3	2580	2960,7	24,7603	0,91594	2824,12	-244,124
	4	2930	3090,61	35,2757	0,9066	2692,88	237,122
	5	2700	3014,09	24,0959	0,94329	2965,12	-265,119
	6	3160	2994,84	19,7609	1,07623	3276,89	-116,89
	7	3190	2930,78	11,3786	1,13236	3428,32	-238,315
	8	2910	2872,61	4,4236	1,04738	3092,78	-182,776
	9	2750	2812,31	-2,0478	1,00931	2913,86	-163,858
	10	2660	2717,88	-11,2868	1,02603	2898,2	-238,202
	11	2760	2775,9	-4,3558	0,96197	2593,94	166,063
	12	3300	2882,38	6,7282	1,08869	3000,05	299,947
1992	13	2530	2787,05	-3,4784	0,95526	2775,1	-245,095
	14	3060	2992,76	17,4409	0,93514	2576,01	483,986
	15	2310	2814,92	-2,0873	0,90641	2757,17	-447,167
	16	2780	2914,26	8,0553	0,91133	2550,12	229,883
	17	2630	2868,63	2,6873	0,94064	2756,59	-126,591
	18	2860	2785,77	-5,8681	1,07127	3090,19	-230,188
	19	3150	2780,66	-5,7919	1,13241	3147,84	2,158
	20	3150	2867,93	3,5139	1,05247	2906,33	243,668
	21	2930	2884,06	4,7758	1,00997	2898,16	31,839
	22	2770	2813,19	-2,7889	1,02189	2964,04	-194,039
	23	2680	2800,62	-3,7666	0,96146	2703,51	-23,514
	24	3260	2875,88	4,1359	1,09318	3044,91	215,085
1993	25	2610	2820,91	-1,7751	0,95226	2751,16	-141,163
	26	2540	2777,95	-5,8934	0,93306	2636,28	-96,281
	27	2790	2894,46	6,3475	0,91216	2512,62	277,382
	28	2780	2960,68	12,3339	0,9141	2643,61	136,391
	29	2910	3021,26	17,1587	0,9429	2796,54	113,459
	30	3800	3241,93	37,51	1,08135	3254,96	545,043
	31	3760	3295,81	39,1471	1,13325	3713,65	46,345
	32	3820	3452,79	50,9305	1,05786	3509,96	310,043
	33	3120	3337,92	34,3499	1,00244	3538,65	-418,646
	34	3020	3205,48	17,6711	1,01392	3446,1	-426,099
	35	3230	3277,67	23,1236	0,96386	3098,94	131,058
	36	3430	3235,53	16,5971	1,08987	3608,36	-178,364



## Lanjutan Lampiran 2

## Hasil Pemulusan Data Jumlah Tingkat Hunian Hotel di Propinsi DIY

Tahun	Periode (t)	Jumlah Penghuni Hotel	LEVE1	TREN1	SEAS1	FITS1	RESI1
1994	37	3100	3253,45	16,7289	0,95231	3096,86	3,137
	38	2780	3153,88	5,0996	0,9279	3051,27	-271,27
	39	3230	3311,81	20,3822	0,91847	2881,5	348,502
	40	2720	3189,56	6,1189	0,90797	3045,95	-325,95
	41	3030	3202,81	6,832	0,94321	3013,19	16,808
	42	3470	3209,36	6,8038	1,08134	3470,76	-0,761
	43	3600	3200,38	5,2256	1,13241	3644,71	-44,713
	44	3150	3114,45	-3,8905	1,05322	3391,09	-241,089
	45	3210	3147,2	-0,2255	1,00419	3118,15	91,848
	46	3500	3268,97	11,9735	1,01959	3190,78	309,22
	47	3030	3226,01	6,4798	0,9614	3162,38	-132,38
48	3540	3238,73	7,1039	1,09019	3522,99	17,005	
1995	49	3240	3308,39	13,3602	0,95502	3091,05	148,948
	50	2530	3083,69	-10,4463	0,91715	3082,25	-552,251
	51	2820	3072,07	-10,5635	0,91842	2822,69	-2,691
	52	2570	2969,1	-19,8038	0,90373	2779,75	-209,745
	53	3540	3270,84	12,3497	0,95712	2781,81	758,188
	54	3680	3331,18	17,1496	1,08368	3550,24	129,758
	55	3750	3333,61	15,6771	1,13166	3791,69	-41,689
	56	3070	3175,52	-1,6992	1,04457	3527,52	-457,525
	57	3110	3143,1	-4,7716	1,00272	3187,13	-77,132
	58	3670	3322,79	13,6742	1,02808	3199,82	470,181
	59	2810	3171	-2,8715	0,95388	3207,68	-397,675
60	3320	3119,02	-7,7828	1,08761	3453,86	-133,855	
1996	61	2510	2918,03	-27,103	0,94553	2971,28	-461,28
	62	2280	2728,94	-43,3022	0,90899	2651,43	-371,427
	63	2350	2634,88	-48,378	0,91577	2466,54	-116,545
	64	2600	2702,69	-36,7592	0,90956	2337,49	262,508
	65	2980	2844,96	-18,8559	0,96615	2551,61	428,388
	66	3470	2976,49	-3,8178	1,09189	3062,59	407,411
	67	3640	3070,21	5,9359	1,13705	3364,05	275,948
	68	3420	3155,31	13,8529	1,0485	3213,25	206,746
	69	3320	3225,9	19,5259	1,00537	3177,79	142,212
	70	3140	3168,94	11,8781	1,02436	3336,57	-196,565
	71	3080	3200,06	13,8024	0,95474	3034,11	45,89
72	3490	3211,87	13,6024	1,08751	3495,44	-5,44	

## Lanjutan Lampiran 2

## Hasil Pemulusan Data Jumlah Tingkat Hunian Hotel di Propinsi DIY

Tahun	Periode (t)	Jumlah Penghuni Hotel	LEVE1	TREN1	SEAS1	FITS1	RES11
1997	73	2880	3153,64	6,4199	0,9423	3049,78	-169,781
	74	3370	3379,01	28,3143	0,91782	2872,46	497,542
	75	2990	3350,4	22,6223	0,91343	3120,31	-130,313
	76	2580	3158,43	1,1633	0,90029	3067,95	-487,954
	77	2580	2963,91	-18,4053	0,95659	3052,66	-472,657
	78	3620	3093,44	-3,6115	1,09972	3216,17	403,829
	79	3770	3180,13	5,4187	1,1419	3513,3	256,696
	80	3430	3219,86	8,8497	1,05018	3340,07	89,934
	81	3230	3222,33	8,2115	1,00507	3246,04	-16,038
	82	3330	3238,65	9,0219	1,02475	3309,25	20,753
	83	3490	3410,78	25,3335	0,96159	3100,67	389,331
	84	3630	3396,83	21,4047	1,08562	3736,81	-106,814
1998	85	2790	3235,28	3,1088	0,93431	3221,01	-431,006
	86	2840	3180,74	-2,6553	0,91533	2972,26	-132,261
	87	2720	3097,96	-10,6678	0,90989	2902,97	-182,972
	88	2900	3140,86	-5,3117	0,90259	2779,45	120,55
	89	2520	2935,08	-25,3587	0,94678	2999,42	-479,417
	90	2490	2651,51	-51,1791	1,08366	3199,88	-709,882
	91	3260	2702,16	-40,9964	1,14835	2969,31	290,689
	92	2790	2659,37	-41,1755	1,05007	2794,7	-4,7
	93	2840	2701,19	-32,8761	1,0097	2631,47	208,535
	94	3160	2834,46	-16,2612	1,03376	2734,35	425,653
	95	2850	2876,46	-10,4351	0,96451	2709,94	140,056
	96	2860	2773,39	-19,699	1,08018	3111,43	-251,428
1999	97	2850	2872,37	-7,8312	0,9401	2572,79	277,206
	98	3047	3050,27	10,7419	0,92369	2621,99	425,011
	99	3044	3174,79	22,1199	0,91478	2785,18	258,818
	100	2943	3222,39	24,6683	0,90366	2885,5	57,504
	101	3037	3231,32	23,0937	0,94609	3074,27	-37,27
	102	3129	3107,62	8,4148	1,07598	3526,67	-397,673
	103	3509	3091,9	6,0008	1,14701	3578,3	-69,303
	104	3577	3221,31	18,342	1,05611	3253,02	323,979
	105	3564	3355,7	29,9465	1,01494	3271,07	292,926
	106	3520	3393,41	30,723	1,03411	3499,93	20,069
	107	3539	3522,17	40,5271	0,96853	3302,6	236,402
	108	3376	3387,78	23,0349	1,07182	3848,37	-472,37

## Lanjutan Lampiran 2

## Hasil Pemulusan Data Jumlah Tingkat Hunian Hotel di Propinsi DIY

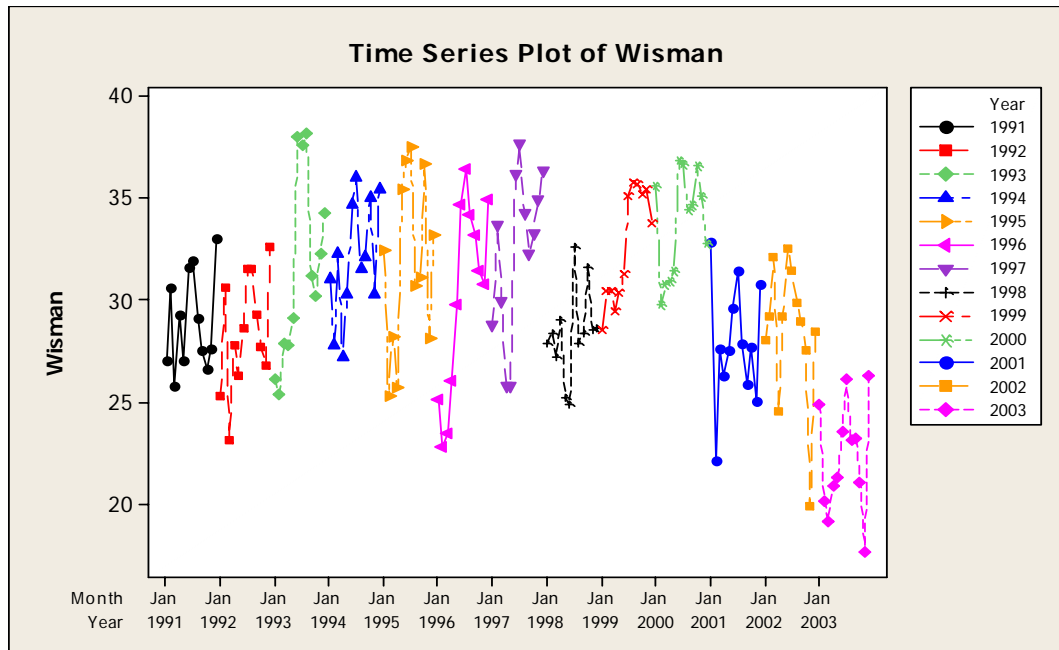
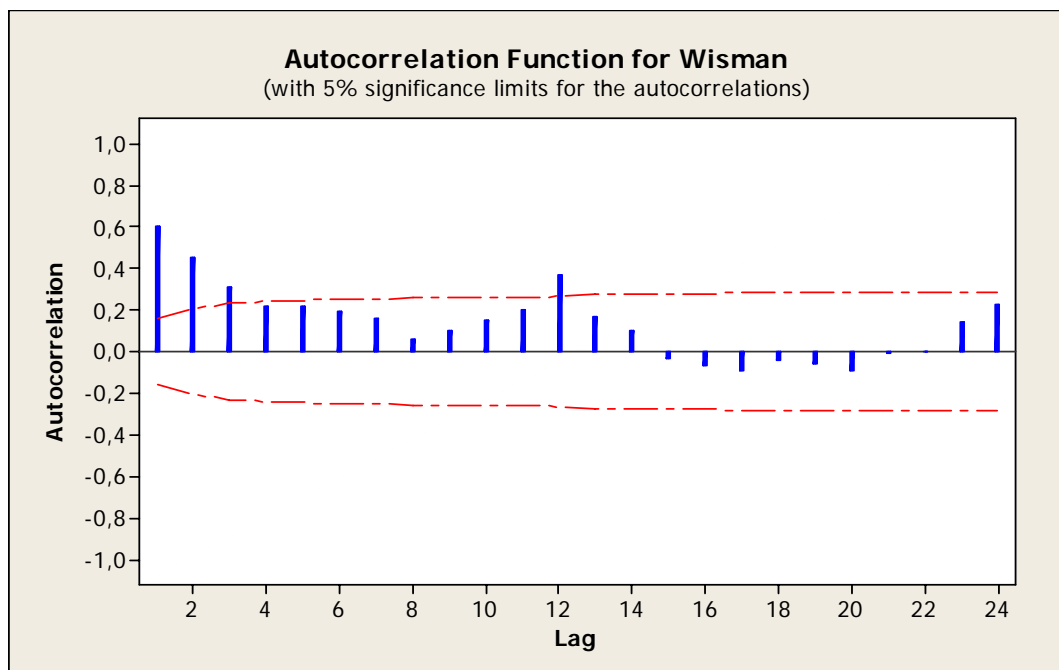
Tahun	Periode (t)	Jumlah Penghuni Hotel	LEVE1	TREN1	SEAS1	FITS1	RESI1
2000	109	3558	3560,37	37,9909	0,94602	3206,5	351,503
	110	2975	3447,33	22,8879	0,91762	3323,76	-348,761
	111	3079	3428,47	18,7124	0,91311	3174,49	-95,491
	112	3091	3436,52	17,6467	0,90324	3115,08	-24,076
	113	3145	3402,18	12,4479	0,94392	3267,96	-122,963
	114	3683	3417,95	12,7797	1,07614	3674,08	8,924
	115	3668	3337,59	3,4663	1,1422	3935,06	-267,062
	116	3443	3308,67	0,2273	1,05456	3528,52	-85,518
	117	3469	3352,52	4,5894	1,01692	3358,32	110,68
	118	3655	3428,04	11,6825	1,03732	3471,62	183,378
	119	3510	3513,44	19,0551	0,97158	3331,49	178,515
	120	3277	3342,47	0,052	1,06268	3786,2	-509,197
2001	121	3289	3396,18	5,4177	0,94826	3162,1	126,903
	122	2217	3007,37	-34,0045	0,89957	3121,36	-904,362
	123	2762	2993,95	-31,9461	0,91405	2715,01	46,987
	124	2630	2941,9	-33,9567	0,90231	2675,4	-45,401
	125	2757	2913,08	-33,4431	0,94417	2744,88	12,121
	126	2961	2828,38	-38,5684	1,07321	3098,89	-137,887
	127	3141	2773,87	-40,1632	1,14122	3186,54	-45,542
	128	2786	2696,97	-43,8367	1,0524	2882,85	-96,848
	129	2587	2609,46	-48,2036	1,01437	2698,02	-111,018
	130	2773	2606,05	-43,7247	1,04	2656,85	116,15
	131	2501	2567,05	-43,2517	0,97185	2489,51	11,49
	132	3078	2672,86	-28,3455	1,07157	2681,99	396,011
2002	133	2799	2767,4	-16,0579	0,95458	2507,7	291,299
	134	2918	2948,31	3,6389	0,90859	2475,03	442,968
	135	3207	3174,59	25,9033	0,92367	2698,23	508,771
	136	2454	3008,17	6,6707	0,89366	2887,85	-433,847
	137	2916	3044,27	9,6138	0,94554	2846,53	69,47
	138	3249	3043,27	8,5529	1,07265	3277,47	-28,465
	139	3147	2934,13	-3,2171	1,13435	3482,8	-335,803
	140	2987	2893,85	-6,9227	1,05038	3084,5	-97,496
	141	2891	2872,18	-8,3976	1,01358	2928,4	-37,4
	142	2749	2775,58	-17,2177	1,03504	2978,32	-229,322
	143	1986	2472,43	-45,8113	0,95499	2680,72	-694,72
	144	2847	2518,71	-36,6017	1,07744	2600,28	246,718

**Lampiran 3. *PlotTime Series* Data Tingkat  
Hunian Hotel di Propinsi DIY  
Tahun 1991-2003**

**3a. *Plot Time Series***

**3b. *Grafik ACF***

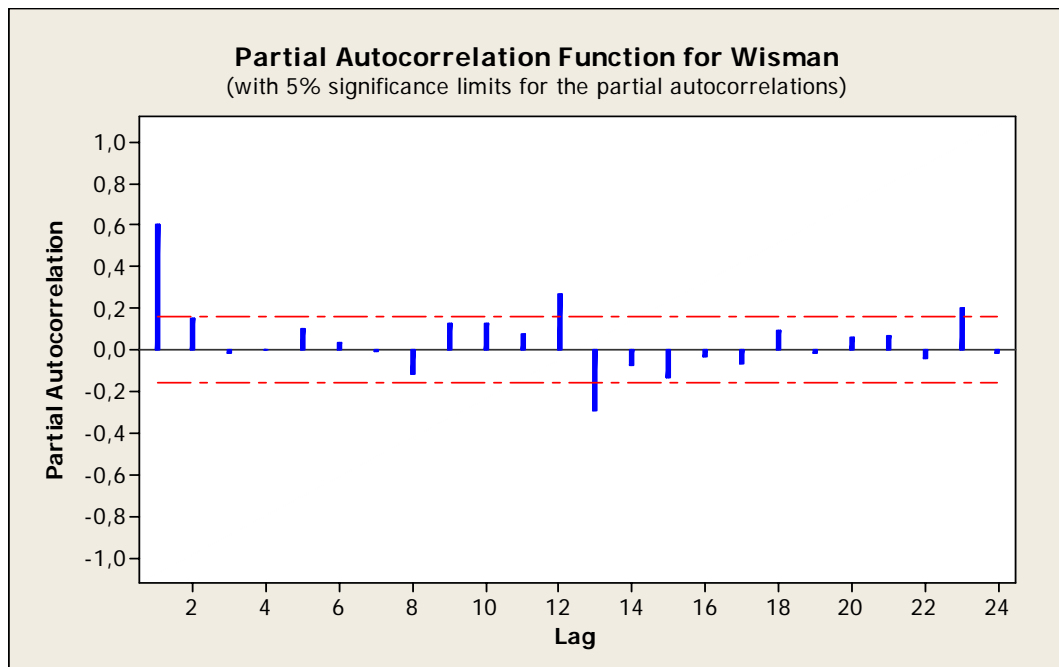
**3c. *Grafik PACF***

Lampiran 3a. *Plot Time Series*Lampiran 3b. *Grafik ACF*

### Autocorrelation Function: Wisman

Lag	ACF	T	LBQ
1	0,598360	7,47	56,93
2	0,452701	4,32	89,74
3	0,306096	2,62	104,83
4	0,218716	1,80	112,59
5	0,217540	1,75	120,31
6	0,193143	1,52	126,44
7	0,159344	1,24	130,64
8	0,056831	0,44	131,18
9	0,099477	0,77	132,84
10	0,152149	1,17	136,75
11	0,201232	1,53	143,63
12	0,365710	2,74	166,52
13	0,170939	1,22	171,56
14	0,102346	0,73	173,38
15	-0,029511	-0,21	173,53
16	-0,064333	-0,45	174,26
17	-0,090659	-0,64	175,72
18	-0,045308	-0,32	176,08
19	-0,054622	-0,38	176,62
20	-0,087985	-0,62	178,02
21	-0,011287	-0,08	178,04
22	-0,001320	-0,01	178,05
23	0,144396	1,01	181,91
24	0,226693	1,58	191,50

### Lampiran 3c. Grafik *PACF*



**Partial Autocorrelation Function: Wisman**

Lag	PACF	T
1	0,598360	7,47
2	0,147463	1,84
3	-0,020817	-0,26
4	0,004016	0,05
5	0,103609	1,29
6	0,030400	0,38
7	-0,011902	-0,15
8	-0,116713	-1,46
9	0,123089	1,54
10	0,126901	1,58
11	0,072008	0,90
12	0,269007	3,36
13	-0,292442	-3,65
14	-0,072817	-0,91
15	-0,135550	-1,69
16	-0,033188	-0,41
17	-0,066823	-0,83
18	0,091108	1,14
19	-0,017801	-0,22
20	0,055898	0,70
21	0,066550	0,83
22	-0,044067	-0,55
23	0,203979	2,55
24	-0,012809	-0,16

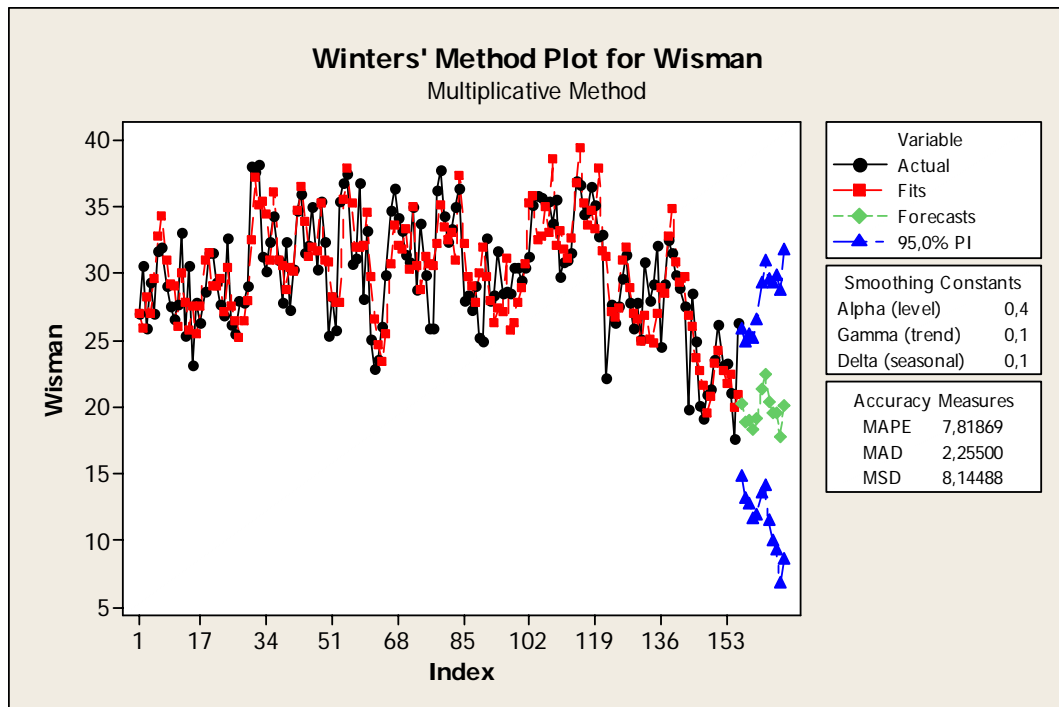
**Lampiran 4. Model *Exponential Smoothing* Holt-Winter**

**4a. Grafik Peramalan Data Tingkat Hunian Hotel dengan model *Exponential Smoothing* Holt-Winter**

**4b. Hasil Peramalan Tingkat Hunian Hotel dengan model *Exponential Smoothing* Holt-Winter**



Lampiran 4a. Grafik Peramalan Data Tingkat Hunian Hotel di Propinsi DIY Dengan Model *Exponential Smoothing Holt-Winter*



Lampiran 4b. Hasil Peramalan Tingkat Hunian Hotel dengan Model *Exponential Smoothing Holt-Winter*

### Winters' Method for Wisman

Multiplicative Method

Data Wisman  
Length 156

Smoothing Constants

Alpha (level) 0,4  
Gamma (trend) 0,1  
Delta (seasonal) 0,1

Accuracy Measures

MAPE 7,81869  
MAD 2,25500  
MSD 8,14488

## Forecasts

Period	Forecast	Lower	Upper
157	20,2625	14,7378	25,7871
158	18,8621	12,9806	24,7435
159	18,9409	12,6365	25,2454
160	18,3087	11,5274	25,0900
161	19,0762	11,7747	26,3776
162	21,3501	13,4938	29,2064
163	22,3775	13,9385	30,8166
164	20,3833	11,3391	29,4276
165	19,4686	9,8009	29,1363
166	19,4637	9,1576	29,7698
167	17,6575	6,7006	28,6143
168	20,0671	8,4493	31,6850

## **Lampiran 5. Model *SARIMA***

**5a. *Output* Estimasi dan Uji Signifikansi dengan *SARIMA*  $(1,0,0)(0,0,1)^{12}$**

**5b. Grafik *ACF* for RESI1**

**5c. Grafik *Probability Plot* of RESI1**

**5d. *Output* Hasil Peramalan Tingkat Hunian Hotel dengan model *SARIMA*  $(1,0,0)(0,0,1)^{12}$  Tahun 2004**

**5e. *Output* Nilai *Error* Model *Exponential Smoothing Holt-Winter* dan Model *SARIMA***

Lampiran 5a. *Output* Estimasi dan Uji Signifikansi SARIMA (1,0,0)(0,0,1)<sup>12</sup>

**ARIMA Model: Wisman**

Estimates at each iteration

Iteration	SSE		Parameters	
0	2838,01	0,100	0,100	26,995
1	2172,67	0,242	-0,050	22,655
2	1795,24	0,366	-0,200	18,894
3	1579,80	0,492	-0,350	15,098
4	1494,75	0,623	-0,488	11,164
5	1492,22	0,640	-0,514	10,633
6	1492,01	0,643	-0,522	10,546
7	1491,99	0,644	-0,525	10,522
8	1491,99	0,644	-0,526	10,514
9	1491,99	0,644	-0,526	10,511

Relative change in each estimate less than 0,0010

Final Estimates of Parameters

Type	Coef	SE Coef	T	P
AR 1	0,6443	0,0619	10,41	0,000
SMA 12	-0,5261	0,0756	-6,96	0,000
Constant	10,5113	0,3784	27,78	0,000
Mean	29,547	1,064		

Number of observations: 156

Residuals: SS = 1480,25 (backforecasts excluded)  
MS = 9,67 DF = 153

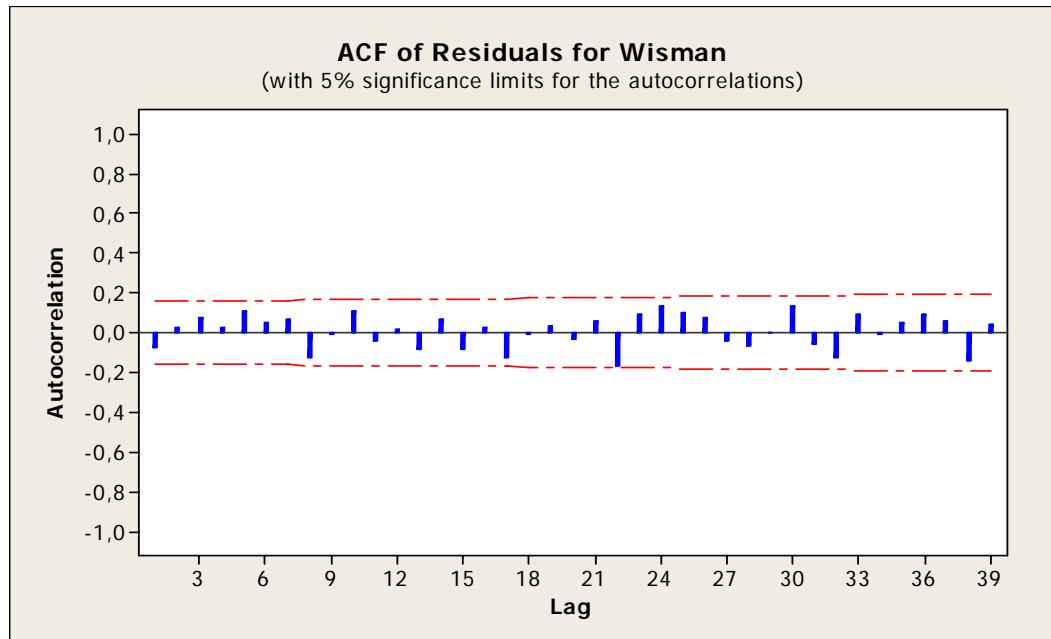
Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag	12	24	36	48
Chi-Square	10,3	26,9	42,0	54,5
DF	9	21	33	45
P-Value	0,330	0,174	0,135	0,157

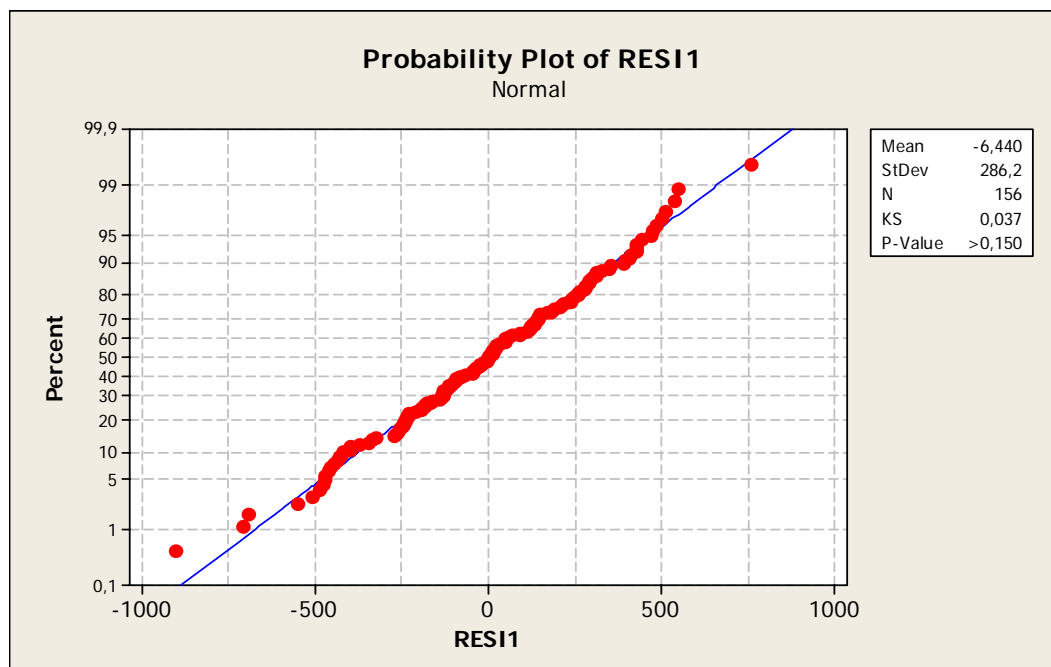
Forecasts from period 156

Period	Forecast	95% Limits		Actual
		Lower	Upper	
157	26,0512	19,9536	32,1489	
158	22,7612	15,5076	30,0148	
159	22,4963	14,8139	30,1788	
160	25,3834	17,5298	33,2370	
161	24,6991	16,7756	32,6226	
162	25,0795	17,1271	33,0318	
163	27,0477	19,0834	35,0120	
164	25,7158	17,7465	33,6850	
165	25,7015	17,7302	33,6729	
166	25,0667	17,0946	33,0389	
167	25,1617	17,1891	33,1342	
168	28,2965	20,3238	36,2692	

Lampiran 5b. Grafik ACF for RESI1



Lampiran 5c. Grafik Probability Plot of RESI1



Lampiran 5d. *Output* Hasil Peramalan Tingkat Hunian Hotel dengan  
 $SARIMA(1,0,0)(0,0,1)^{12}$

Forecasts from period 156

Period	Forecast	95% Limits		Actual
		Lower	Upper	
157	26,0512	19,9536	32,1489	
158	22,7612	15,5076	30,0148	
159	22,4963	14,8139	30,1788	
160	25,3834	17,5298	33,2370	
161	24,6991	16,7756	32,6226	
162	25,0795	17,1271	33,0318	
163	27,0477	19,0834	35,0120	
164	25,7158	17,7465	33,6850	
165	25,7015	17,7302	33,6729	
166	25,0667	17,0946	33,0389	
167	25,1617	17,1891	33,1342	
168	28,2965	20,3238	36,2692	

## **Lampiran 6.**

- 6a. *Output Nilai Error Model Exponential Smoothing Holt-Winter dan Model SARIMA***
- 6b. *Grafik Time Series Data Ramalan dan Data Asli Tahun 2004 Model Exponential Smoothing Holt-Winter dan Model SARIMA***

Lampiran 6a. *Output Nilai Error Model Exponential Smoothing Holt-Winter dan Model SARIMA*

➤ *Output Model Exponential Smoothing Holt-Winter*

<b>Bulan (n)</b>	<b>Ramalan (F<sub>i</sub>)</b>	<b>Data Asli (X<sub>i</sub>)</b>	<b>Selisih (X<sub>i</sub>-F<sub>i</sub>)</b>
Januari	26,0512	24,52	4,2575
Februari	22,7612	21,89	3,0279
Maret	22,4963	20,08	1,1391
April	25,3834	17,66	-0,6487
Mei	24,6991	22,51	3,4338
Juni	25,0795	23,90	2,5499
Juli	27,0477	26,32	3,9425
Agustus	25,7158	23,99	3,6067
September	25,7015	22,69	3,2214
Oktober	25,0667	18,82	-0,6437
November	25,1617	20,77	3,1125
Desember	28,2965	21,89	1,8229
<b>Jumlah</b>			<b>31,4066</b>

➤ *Perhitungan Error*

$$e = \frac{\sum X_i - F_i}{n}$$

$$e = \frac{31,4066}{12} = 2,6172$$

➤ *Output Model SARIMA*

<b>Bulan (n)</b>	<b>Ramalan (F<sub>i</sub>)</b>	<b>Data Asli (X<sub>i</sub>)</b>	<b>Selisih (X<sub>i</sub>-F<sub>i</sub>)</b>
Januari	20,2625	24,52	-1,5312
Februari	18,8621	21,89	-0,8712
Maret	18,9409	20,08	-2,4163
April	18,3087	17,66	-7,7234
Mei	19,0762	22,51	-2,1891
Juni	21,3501	23,90	-1,1795
Juli	22,3775	26,32	-0,7277
Agustus	20,3833	23,99	-1,7258
September	19,4686	22,69	-3,0115
Oktober	19,4637	18,82	-6,2467
November	17,6575	20,77	-4,3917
Desember	20,0671	21,89	-6,4065
<b>Jumlah</b>			<b>38,4206</b>



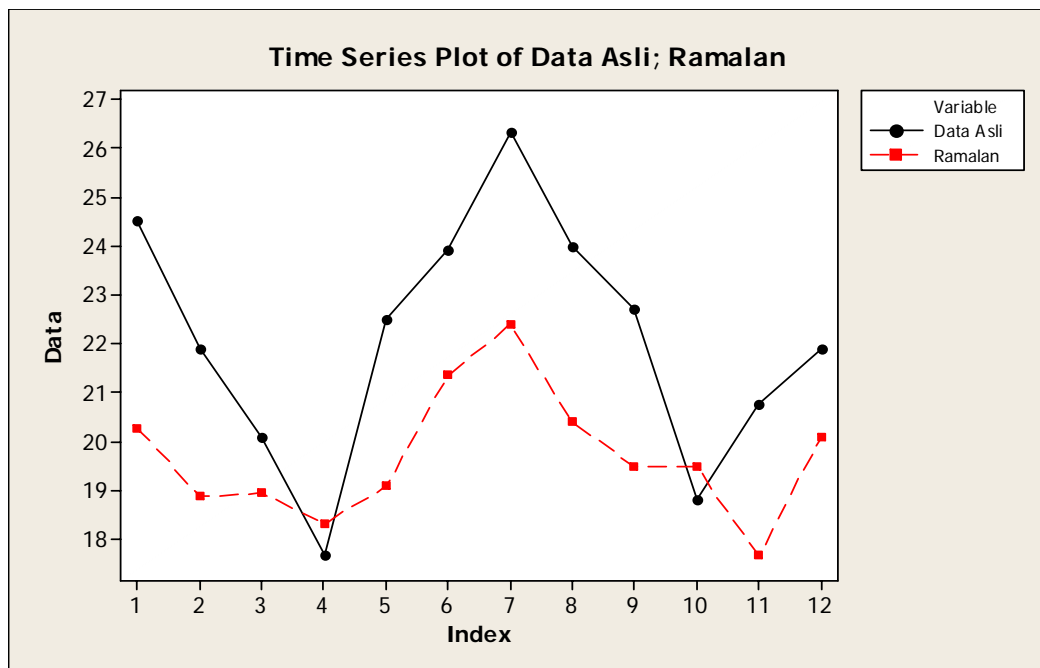
➤ Perhitungan *Error*

$$e = \frac{\sum X_i - F_i}{n}$$

$$e = \frac{38,4206}{12} = 3,2017$$

6b. Grafik Time Series Data Ramalan dan Data Asli Tahun 2004 Model *Exponential Smoothing Holt-Winter* dan Model *SARIMA*

➤ *Plot Time Series Data Ramalan dan Data Asli model Exponential Smoothing Holt-Winter*



➤ *Plot Time Series Data Ramalan dan Data Asli model SARIMA*

