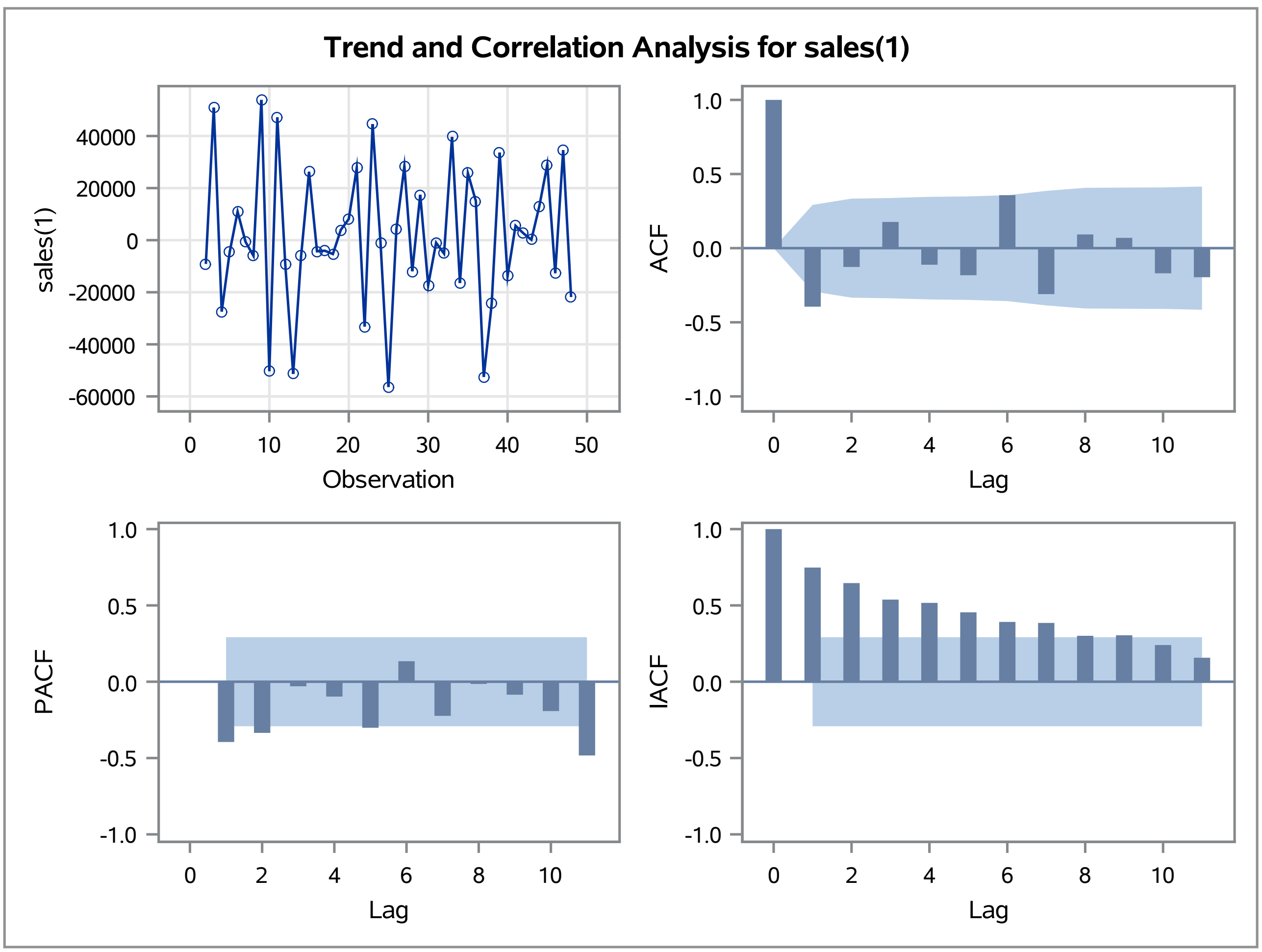
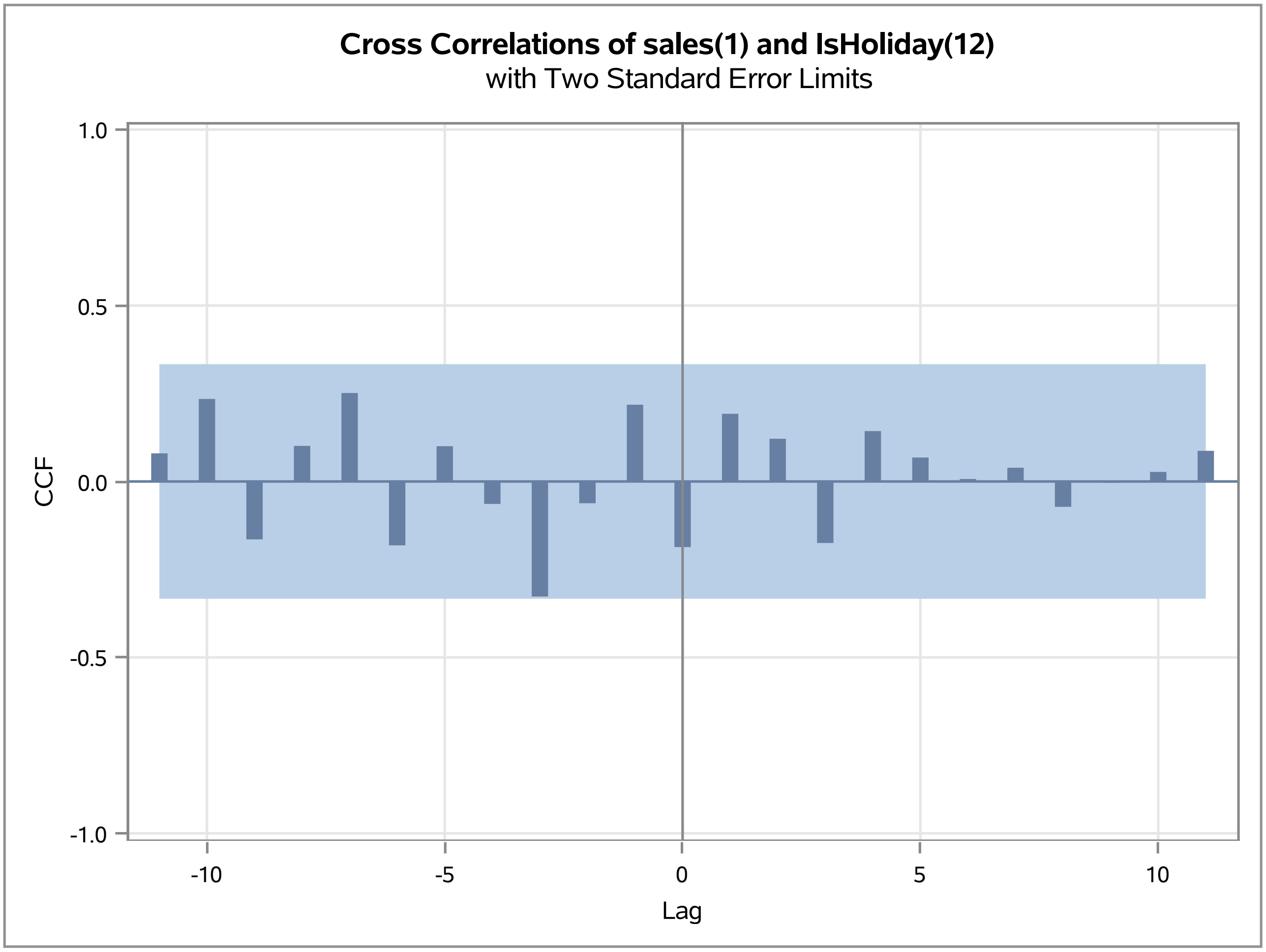
Name of Variable = sales	
Period(s) of Differencing	1
Mean of Working Series	1628.263
Standard Deviation	26754.34
Number of Observations	47
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	19.93	6	0.0029	-0.395	-0.127	0.177	-0.112	-0.183	0.357

Variable IsHoliday has been differenced.

Correlation of sales and IsHoliday	
Period(s) of Differencing	12
Variance of input =	0.131944
Number of Observations	36
Observation(s) eliminated by differencing	12





Warning: The model defined by the new estimates is unstable. The iteration process has been terminated.

Warning: Estimates may not have converged.

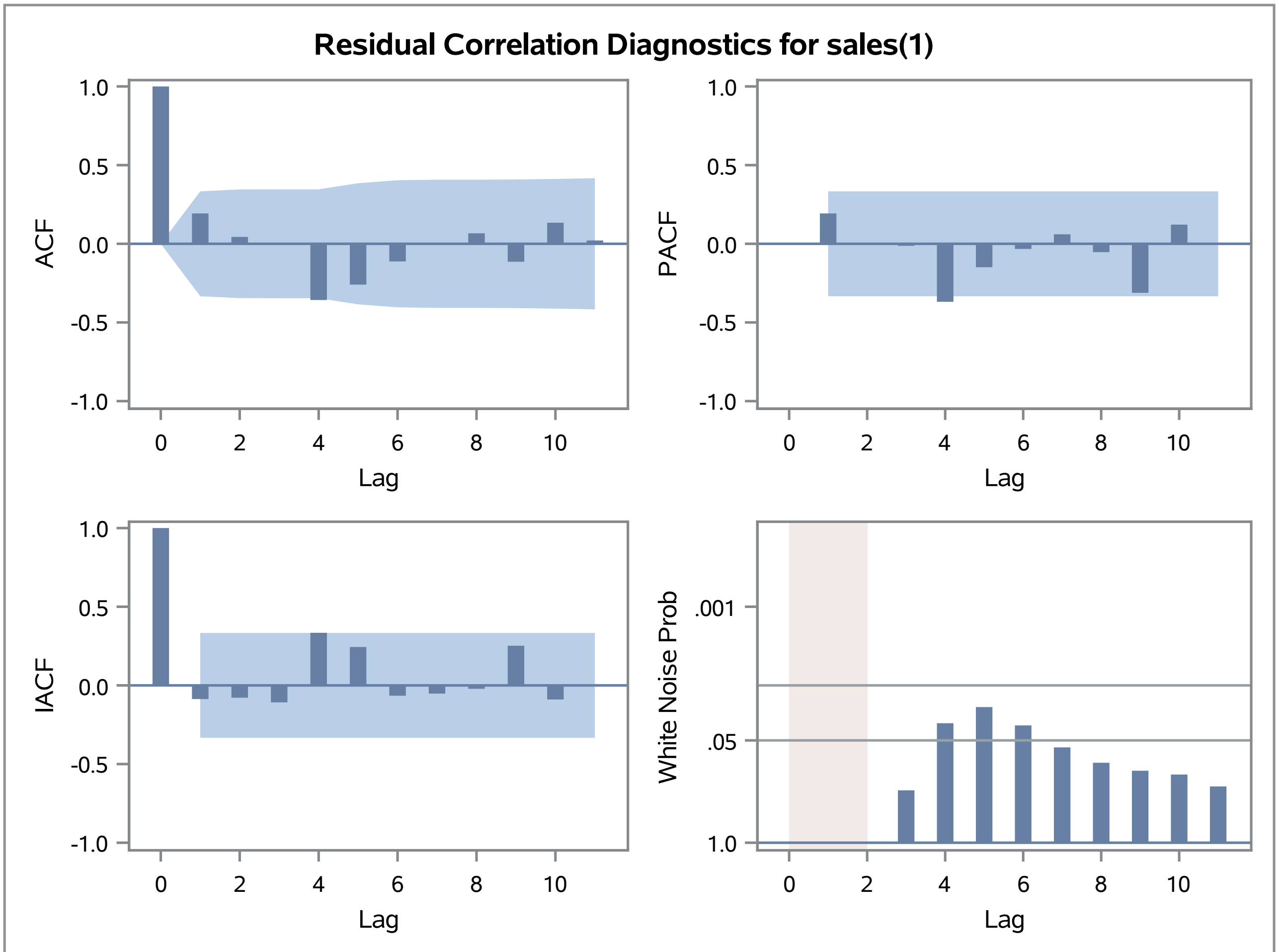
ARIMA Estimation Optimization Summary	
Estimation Method	Maximum Likelihood
Parameters Estimated	4
Termination Criteria	Maximum Relative Change in Estimates
Iteration Stopping Value	0.001
Criteria Value	12.93876
Maximum Absolute Value of Gradient	43059767
R-Square Change from Last Iteration	0.257055
Objective Function	Log Gaussian Likelihood
Objective Function Value	-394.662
Marquardt's Lambda Coefficient	1E-8
Numerical Derivative Perturbation Delta	0.001
Iterations	13
Warning Message	Estimates may not have converged.

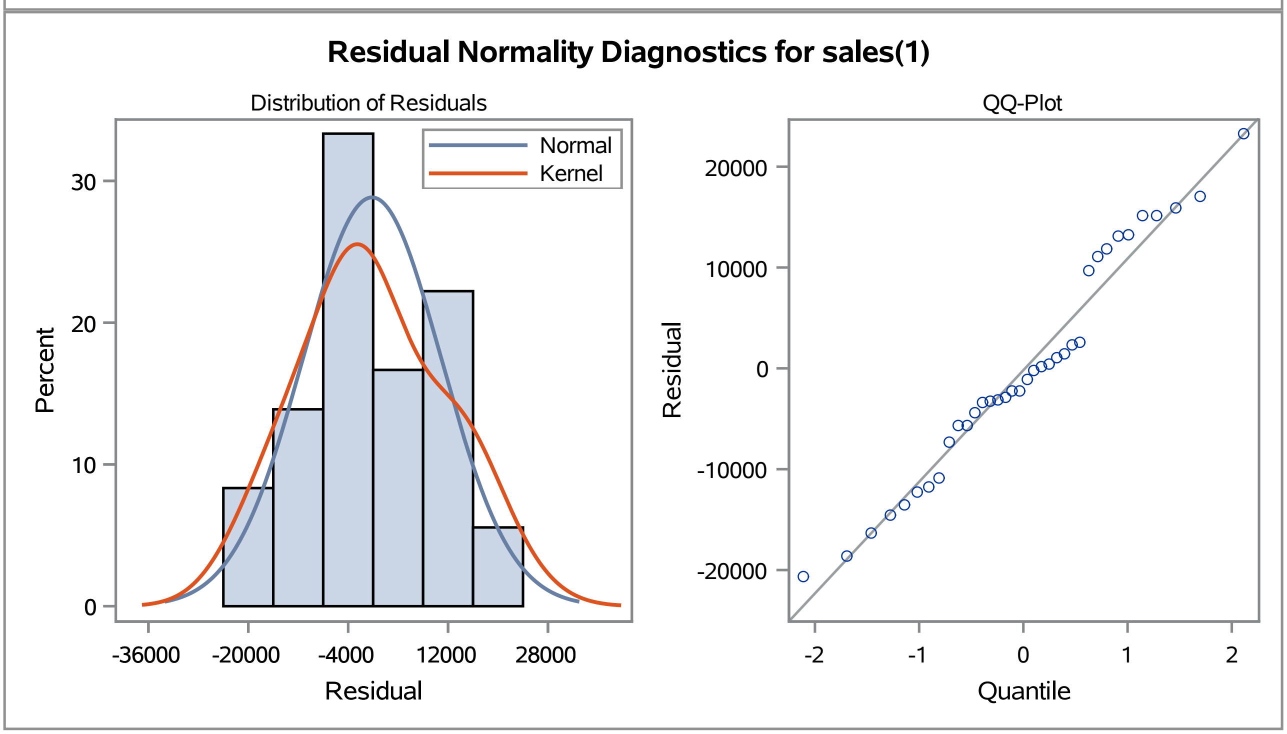
Maximum Likelihood Estimation							
Parameter	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**	**Lag**	**Variable**	**Shift**
MU	868.47585	213.71389	4.06	<.0001	0	sales	0
MA1,1	0.99982	7.88244	0.13	0.8991	1	sales	0
AR1,1	0.86396	0.06822	12.66	<.0001	12	sales	0
NUM1	106.39858	1480.9	0.07	0.9427	0	IsHoliday	0

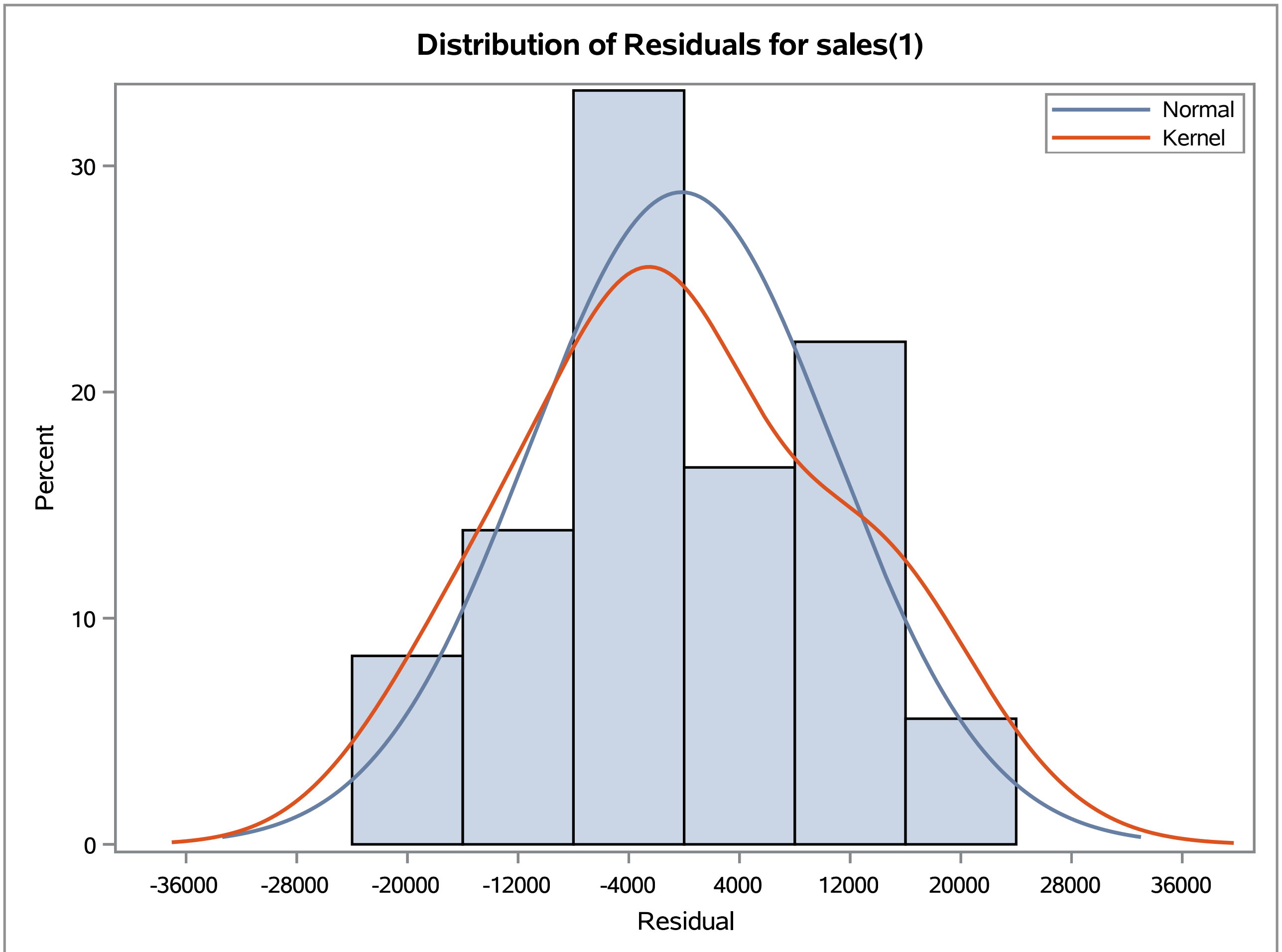
Constant Estimate	118.15
Variance Estimate	1.3402E8
Std Error Estimate	11576.89
AIC	797.3234
SBC	803.6575
Number of Residuals	36

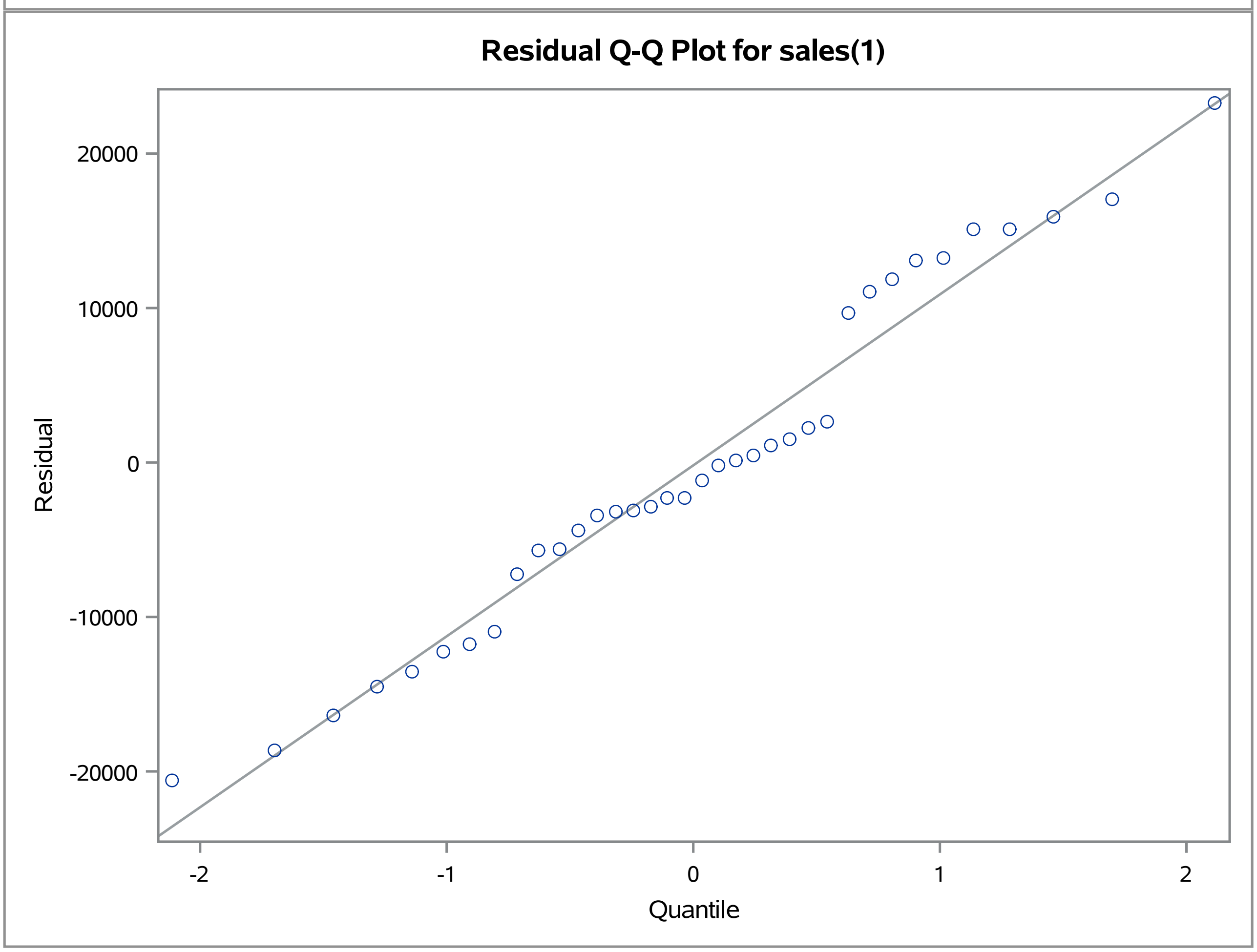
Correlations of Parameter Estimates					
Variable	**Parameter**	**sales MU**	**sales MA1,1**	**sales AR1,1**	**IsHoliday NUM1**
sales	**MU**	1.000	0.133	-0.042	-0.695
sales	**MA1,1**	0.133	1.000	0.152	-0.402
sales	**AR1,1**	-0.042	0.152	1.000	-0.042
IsHoliday	**NUM1**	-0.695	-0.402	-0.042	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	10.48	4	0.0331	0.192	0.043	-0.003	-0.357	-0.258	-0.112
12	12.91	10	0.2285	-0.001	0.066	-0.115	0.133	0.020	-0.103
18	15.87	16	0.4617	0.207	0.012	-0.033	0.046	-0.050	-0.009
24	20.12	22	0.5756	-0.091	-0.108	-0.029	-0.050	0.040	0.135


Residual Correlation Diagnostics for sales(1)
ACF
PACF
IACF
White Noise Prob
Lag
1.0
0.5
0.0
-0.5
-1.0
.001
.05
0
2
4
6
8
10


Residual Normality Diagnostics for sales(1)
Distribution of Residuals
Normal
Kernel
Percent
Residual
-36000
-20000
-4000
12000
28000
QQ-Plot
Quantile
20000
10000
0
-10000
-20000


Distribution of Residuals for sales(1)
Normal
Kernel
Percent
30
20
10
0
-36000
-28000
-20000
-12000
-4000
4000
12000
20000
28000
36000
Residual


Residual Q-Q Plot for sales(1)
Residual
20000
10000
0
-10000
-20000
-2
-1
0
1
2
Quantile

Model for variable sales	
Estimated Intercept	868.4758
Period(s) of Differencing	1

Autoregressive Factors	
Factor 1:	1 - 0.86396 B**(12)

Moving Average Factors	
Factor 1:	1 - 0.99982 B**(1)

Input Number 1	
Input Variable	IsHoliday
Period(s) of Differencing	12
Overall Regression Factor	106.3986

Warning: The ID value for observation 3 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: There are gaps in the interval for observation 5 according to ID variable ORDER_DATE.

Warning: The ID value for observation 6 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: There are gaps in the interval for observation 8 according to ID variable ORDER_DATE.

Warning: The ID value for observation 9 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: There are gaps in the interval for observation 10 according to ID variable ORDER_DATE.

Warning: The ID value for observation 12 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: There are gaps in the interval for observation 13 according to ID variable ORDER_DATE.

Warning: The ID value for observation 15 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: There are gaps in the interval for observation 16 according to ID variable ORDER_DATE.

Warning: The ID value for observation 18 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: There are gaps in the interval for observation 19 according to ID variable ORDER_DATE.

Note: Further warnings will not be printed.

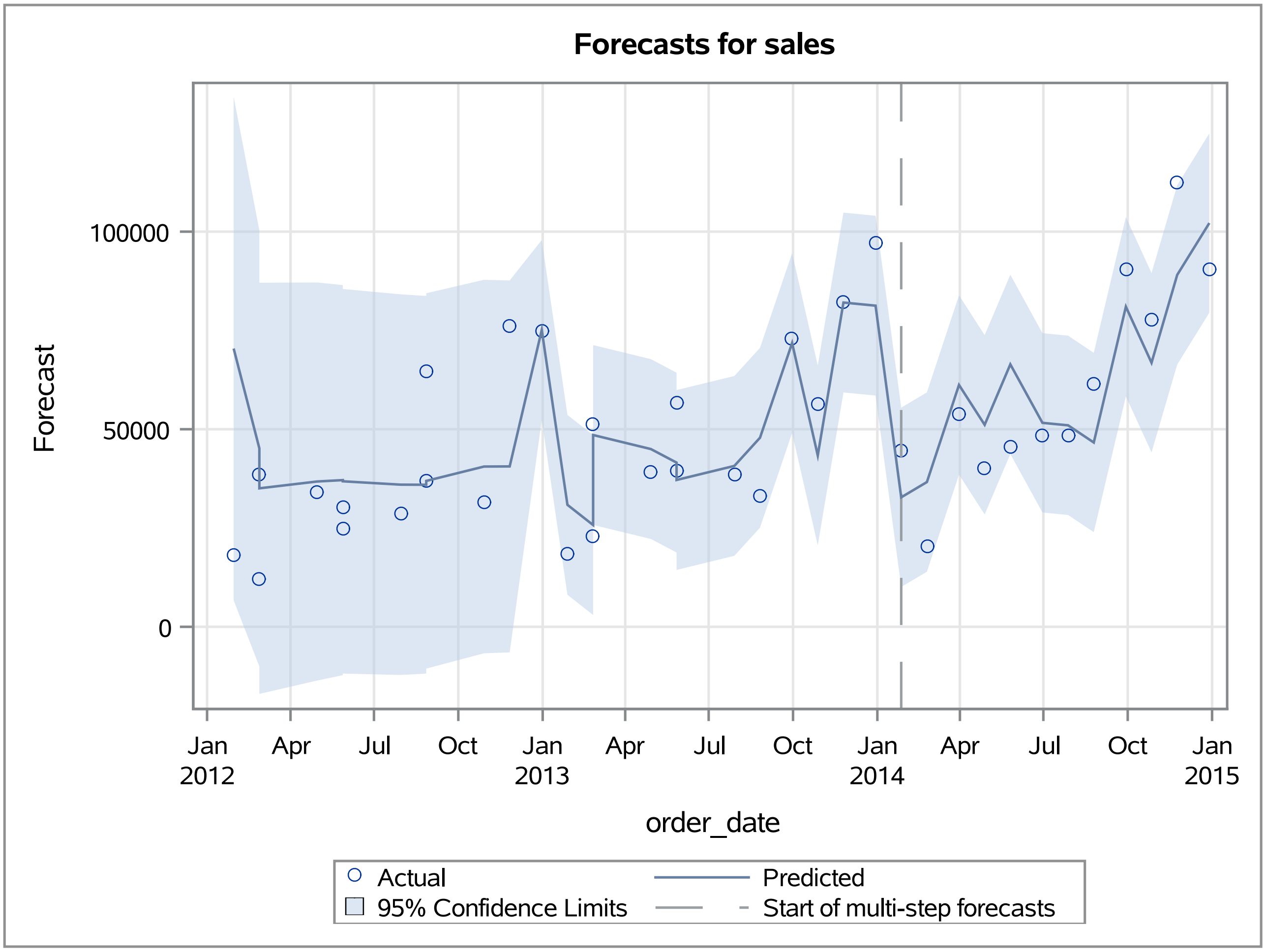
Warning: The ID value for observation 21 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: The ID value for observation 27 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Warning: The ID value for observation 30 is the same as the ID value for the last observation according to ID variable ORDER_DATE.

Forecasts for variable sales						
Obs	**Forecast**	**Std Error**	**95% Confidence Limits**		**Actual**	**Residual**
13	70414.0963	32509.599	6696.4531	134131.7396	18174.0756	-52240.0207
14	45162.5614	28154.139	-10018.5366	100343.6594	12210.8670	-32951.6944
15	35047.1385	26543.977	-16978.0999	87072.3769	38466.7960	3419.6575
16	36770.5288	25701.095	-13602.6919	87143.7496	34195.2085	-2575.3203
17	37123.9405	25181.828	-12231.5348	86479.4158	30131.6865	-6992.2540
18	36827.0403	24829.617	-11838.1149	85492.1955	24797.2920	-12029.7483
19	35976.9800	24574.948	-12189.0325	84142.9924	28765.3250	-7211.6550
20	35943.9984	24382.200	-11844.2358	83732.2327	36898.3322	954.3338

Forecasts for variable sales						
Obs	**Forecast**	**Std Error**	**95% Confidence Limits**		**Actual**	**Residual**
21	36918.5114	24231.225	-10573.8178	84410.8407	64595.9180	27677.4066
22	40554.7305	24109.765	-6699.5407	87809.0018	31404.9235	-9149.8070
23	40591.4048	24009.931	-6467.1960	87650.0056	75972.5635	35381.1587
24	75129.7837	11610.997	52372.6485	97886.9189	74919.5212	-210.2625
25	30863.8502	11610.785	8107.1307	53620.5697	18542.4910	-12321.3592
26	25755.9868	11610.575	2999.6779	48512.2956	22867.7110	-2888.2758
27	48540.8774	11610.368	25784.9743	71296.7805	51186.2170	2645.3396
28	44984.2699	11610.163	22228.7678	67739.7720	39248.5930	-5735.6769
29	41557.8471	11609.961	18802.7413	64312.9530	56691.0770	15133.2299
30	37156.1329	11609.761	14401.4186	59910.8472	39430.4430	2274.3101
31	40715.7644	11609.564	17961.4372	63470.0916	38440.7550	-2275.0094
32	47847.2855	11609.369	25093.3409	70601.2302	33265.5643	-14581.7212
33	71810.8547	11609.176	49057.2881	94564.4212	72908.1089	1097.2542
34	43366.0999	11608.985	20612.9071	66119.2926	56463.1300	13097.0301
35	82063.4627	11608.797	59310.6395	104816.2859	82192.3228	128.8601
36	81272.5599	11608.610	58520.1021	104025.0177	97237.4170	15964.8571
37	32773.3837	11576.888	10083.0997	55463.6677	44703.1420	11929.7583
38	36628.3383	11576.888	13938.0539	59318.6226	20283.5134	-16344.8249
39	61212.4632	11576.889	38522.1784	83902.7479	53908.9620	-7303.5012
40	51123.4164	11576.889	28433.1313	73813.7015	40112.4209	-11010.9955
41	66417.5232	11576.889	43727.2378	89107.8087	45651.2362	-20766.2870
42	51623.2255	11576.889	28932.9397	74313.5114	48259.7487	-3363.4768
43	50992.7261	11576.889	28302.4399	73683.0123	48428.3650	-2564.3611
44	46639.7332	11576.890	23949.4466	69330.0198	61516.0860	14876.3528
45	81007.3418	11576.890	58317.0549	103697.6288	90488.7220	9481.3802
46	66825.8113	11576.890	44135.5240	89516.0987	77793.7552	10967.9439
47	89066.4821	11576.890	66376.1944	111756.7698	112326.4710	23259.9889
48	102182.9483	11576.890	79492.6602	124873.2364	90474.6008	-11708.3475



Outlier Detection Summary	
Maximum number searched	1
Number found	0
Significance used	0.05

Series	Model	Holdback Periods	MAPE	MAE	MSE	RMSE
sales	work.SARIMAX_HOLI	48	27.14%	8802.36	195912092.21	13996.86