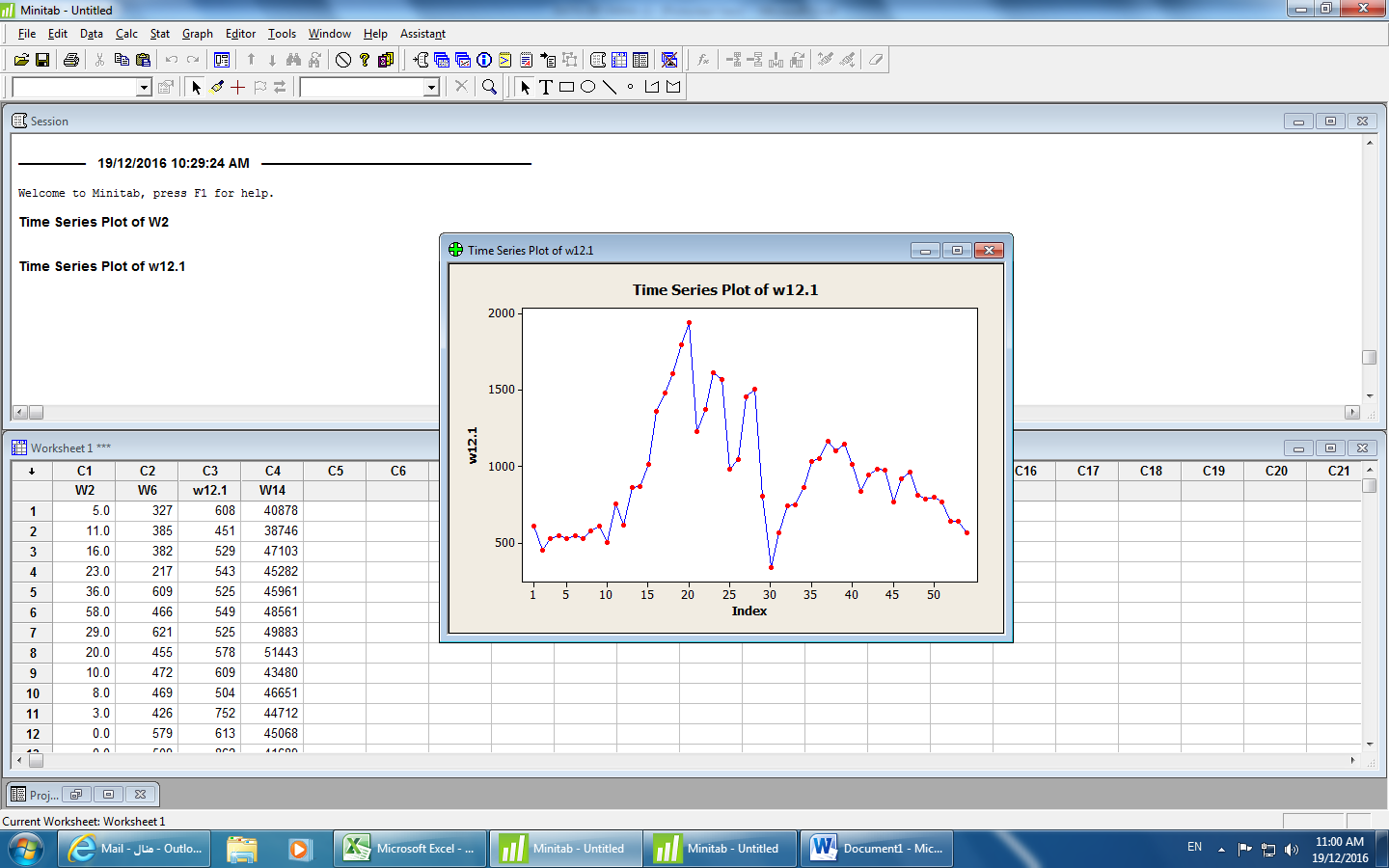
**Name; Manal Moman Morshed**

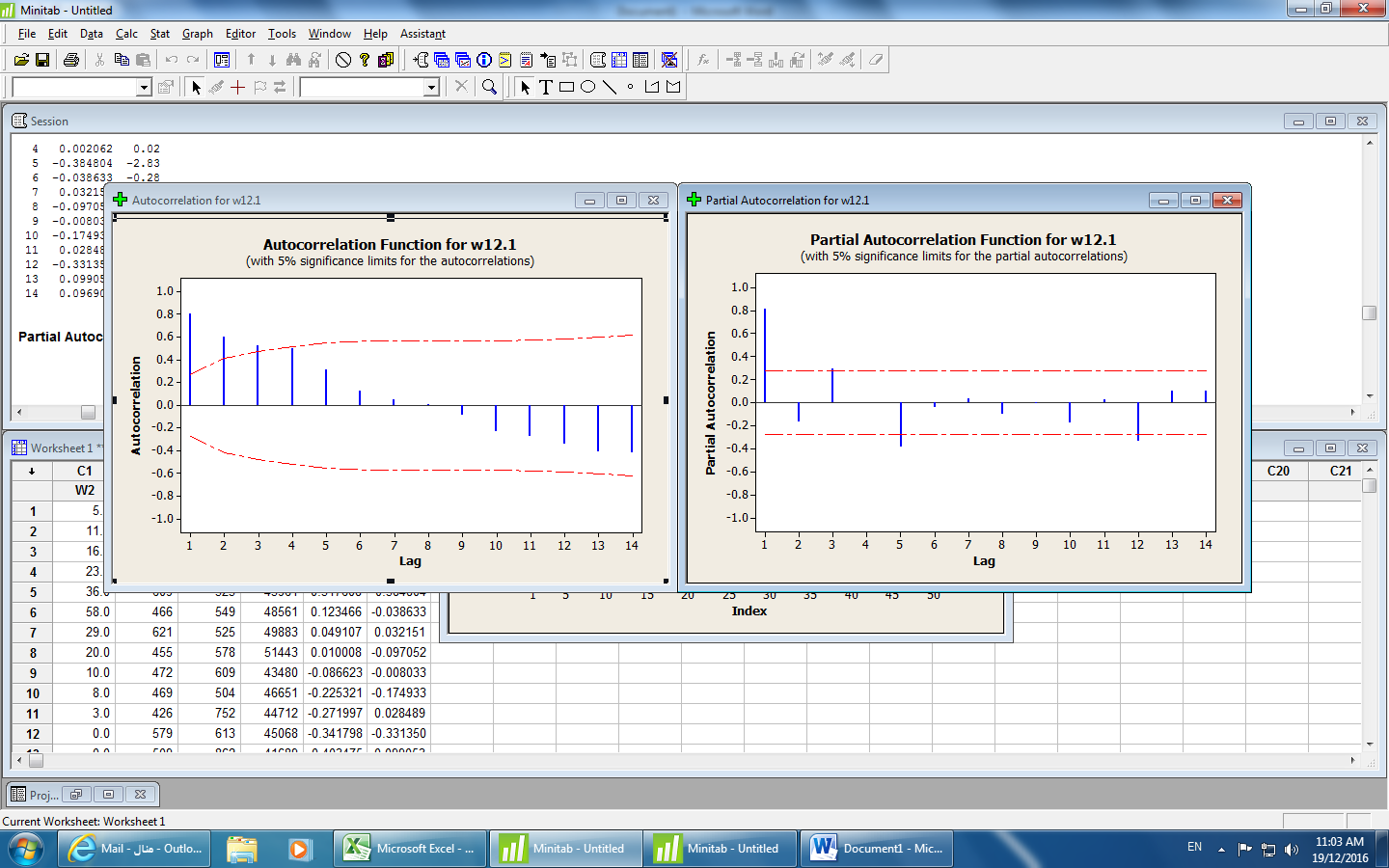
**Name of Time series : w12.1**

**Time series plot :**

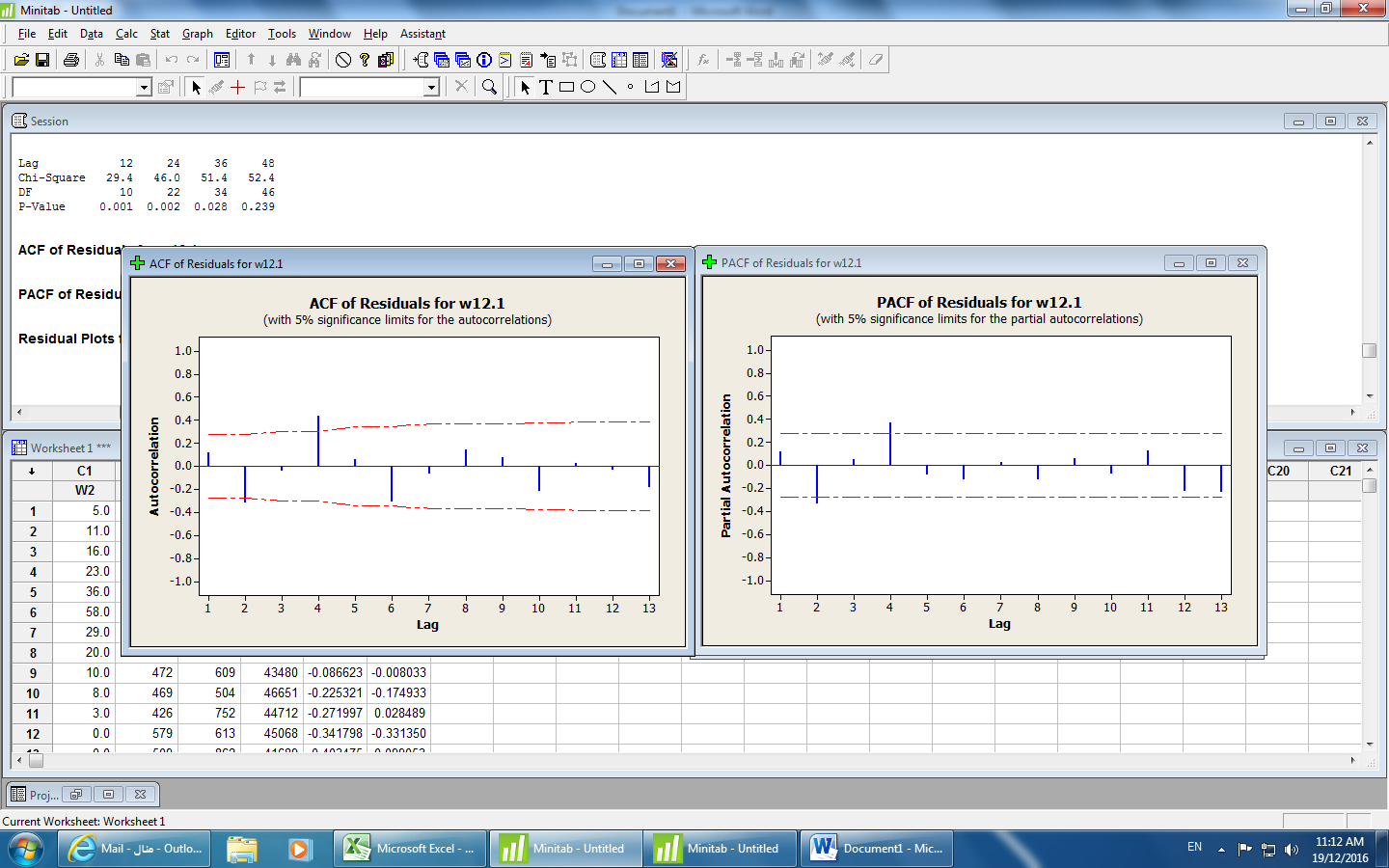


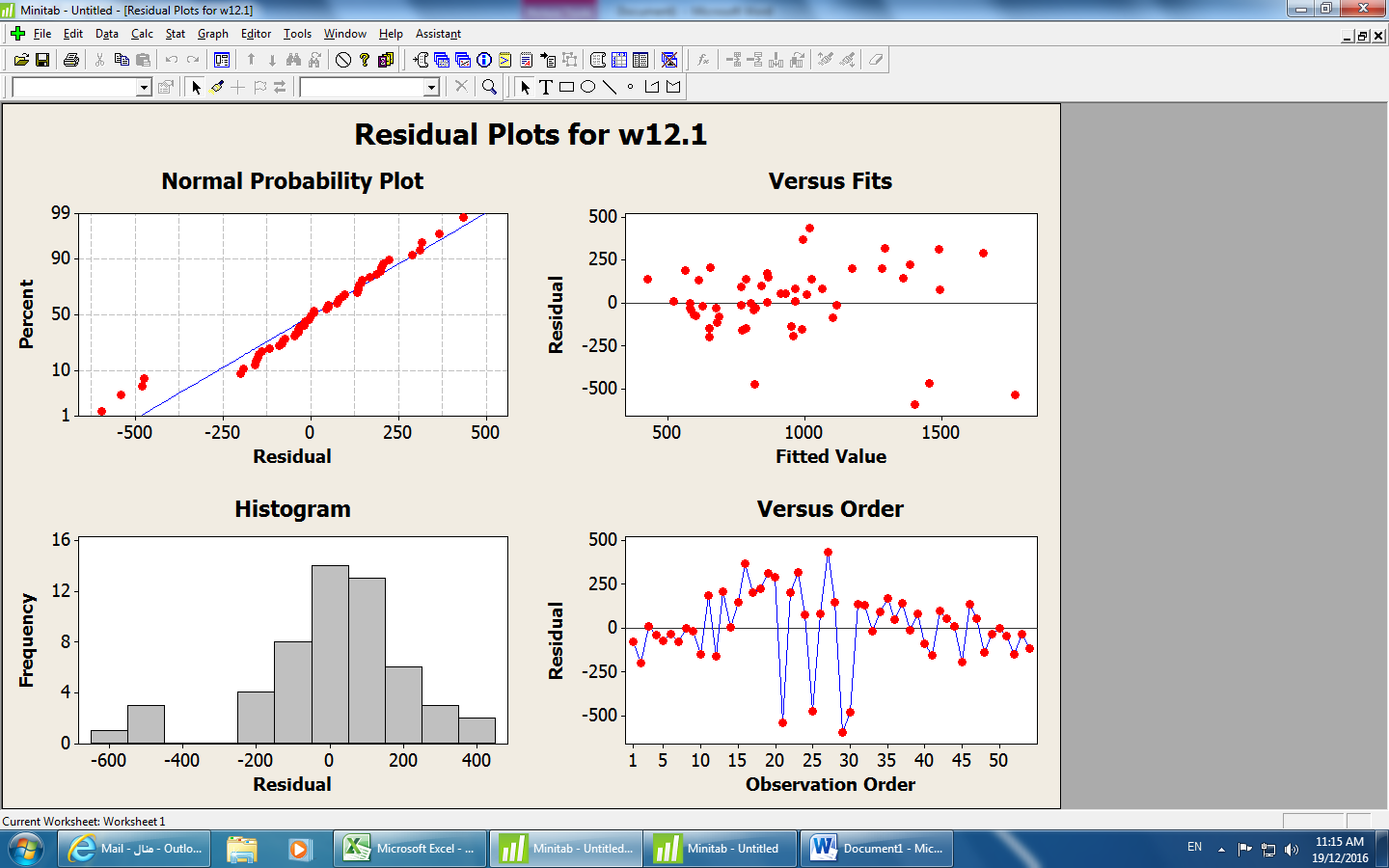
**The Autocorrelation and the partial Autocorrelation:**

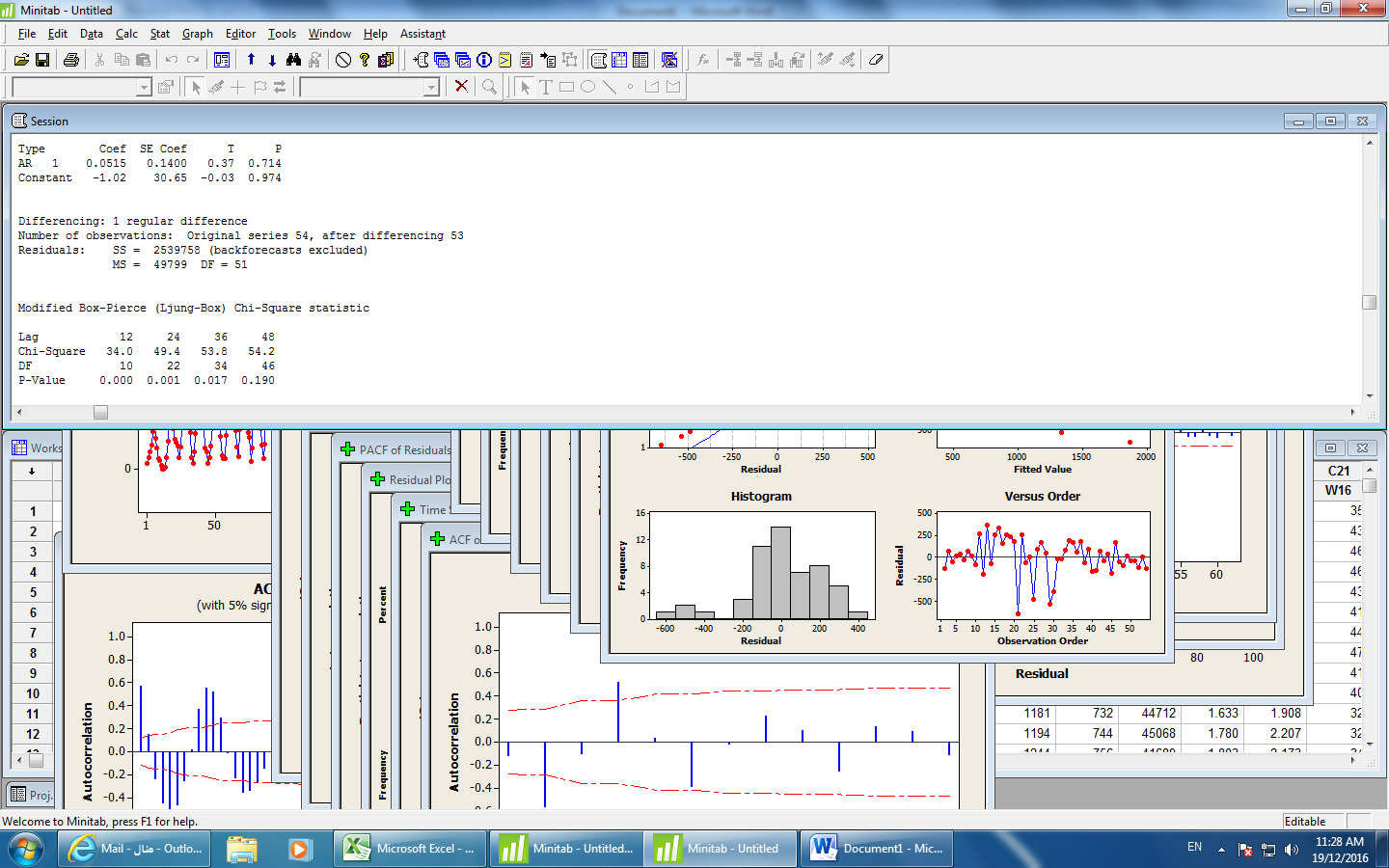
**The Model is AR(1) and Ø > 0**



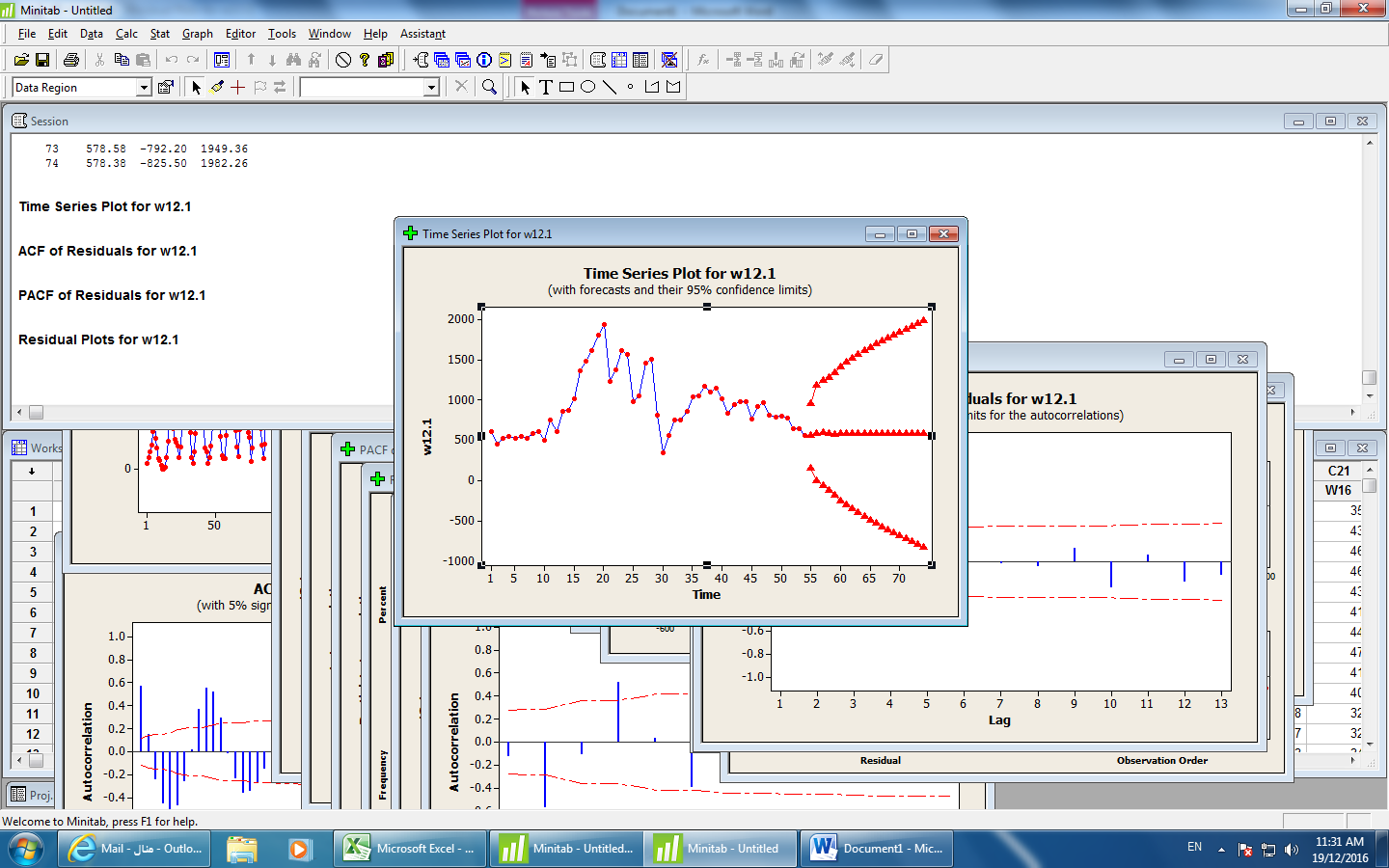
**The Autocorrelation and the partial Autocorrelation of riesedual equal zero**

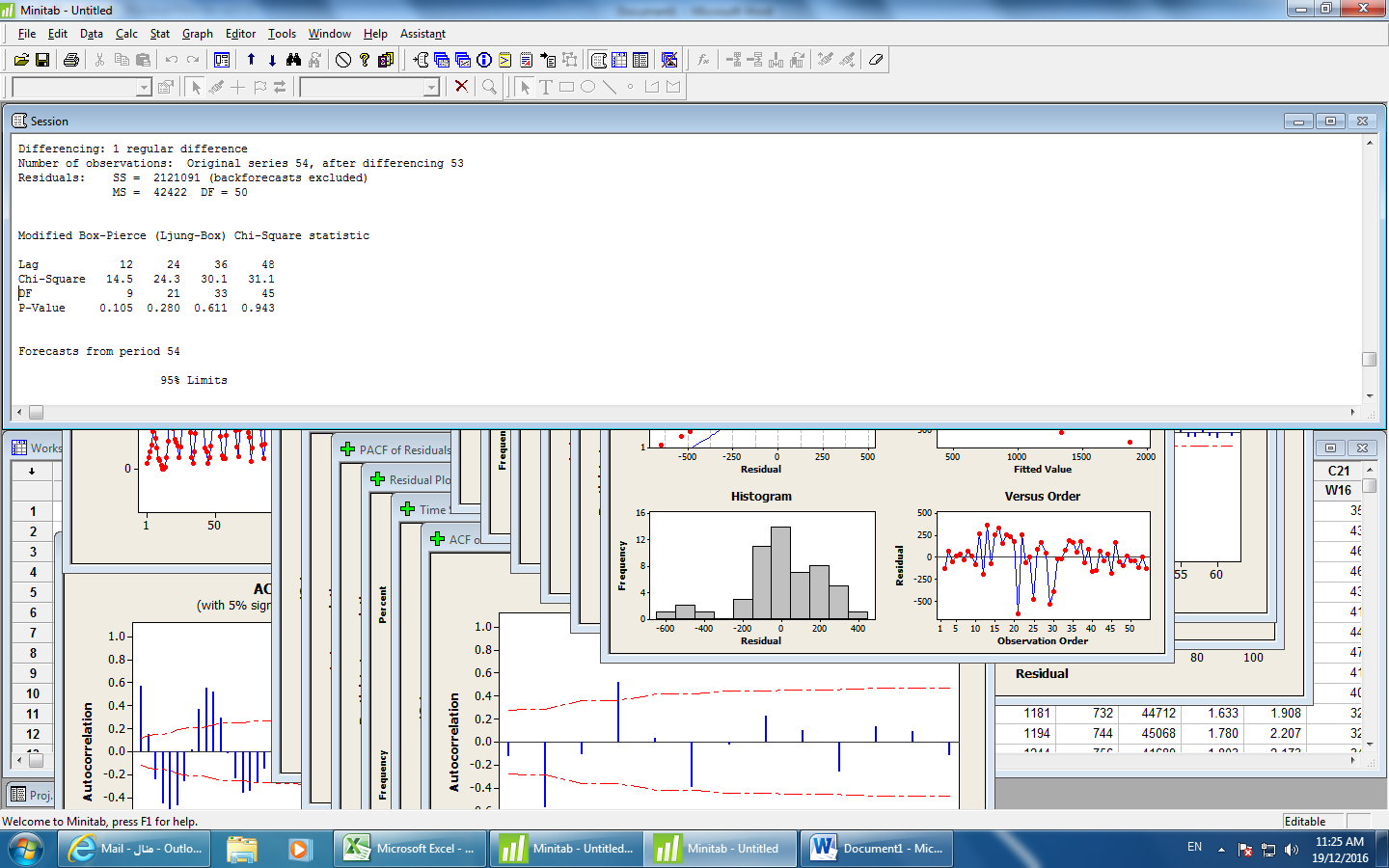
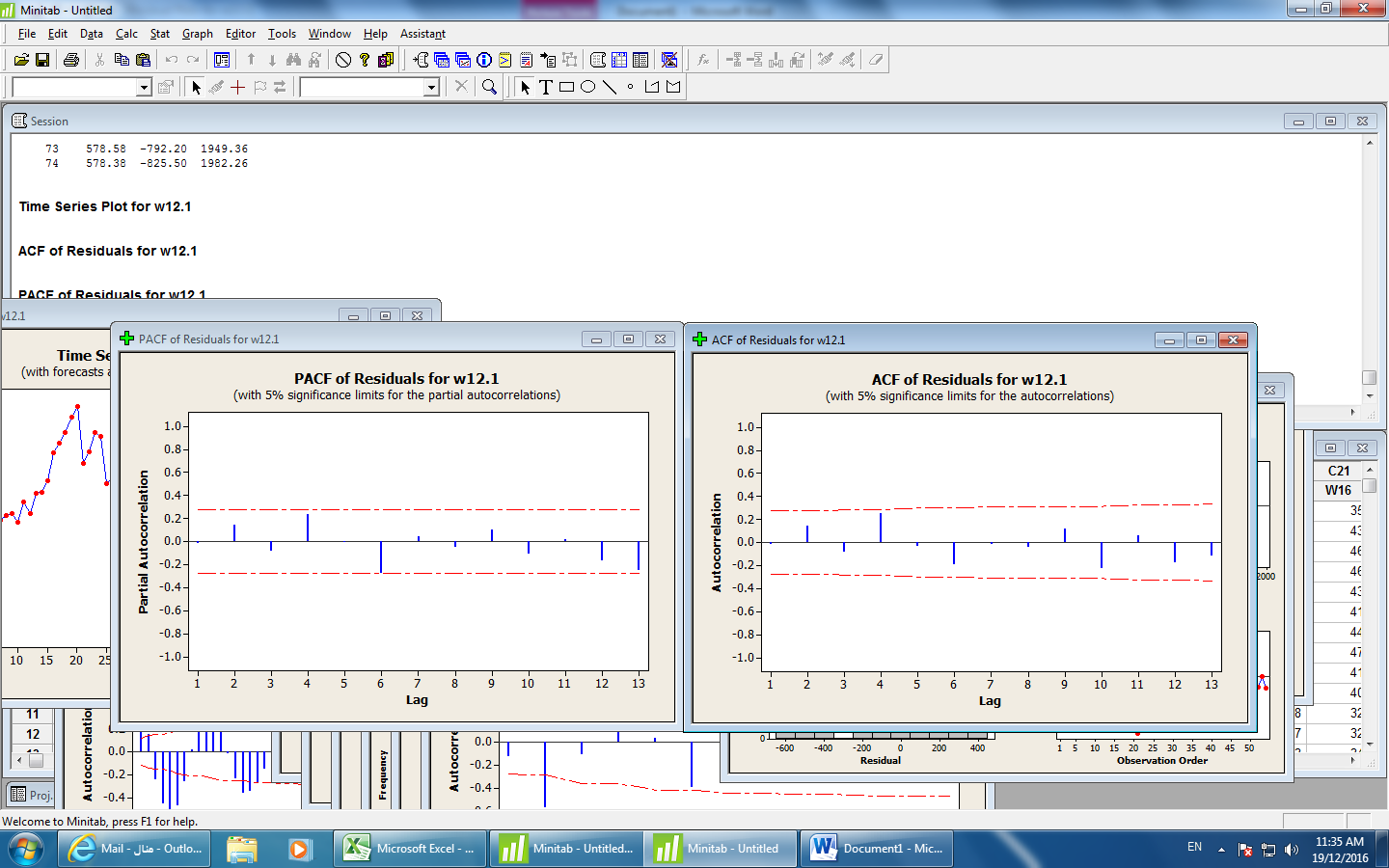






**The Fitting Model ARIMA(2,1,0)**





**ARIMA Model: w12.1**

Estimates at each iteration

Iteration SSE Parameters

0 2775711 0.100 0.100 -0.584

1 2447700 0.091 -0.050 -0.851

2 2233896 0.083 -0.200 -0.866

3 2134072 0.076 -0.350 -0.617

4 2126009 0.074 -0.402 -0.341

5 2125961 0.074 -0.406 -0.271

6 2125961 0.074 -0.407 -0.263

7 2125961 0.074 -0.407 -0.263

8 2125961 0.074 -0.407 -0.263

Relative change in each estimate less than 0.0010

Final Estimates of Parameters

Type Coef SE Coef T P

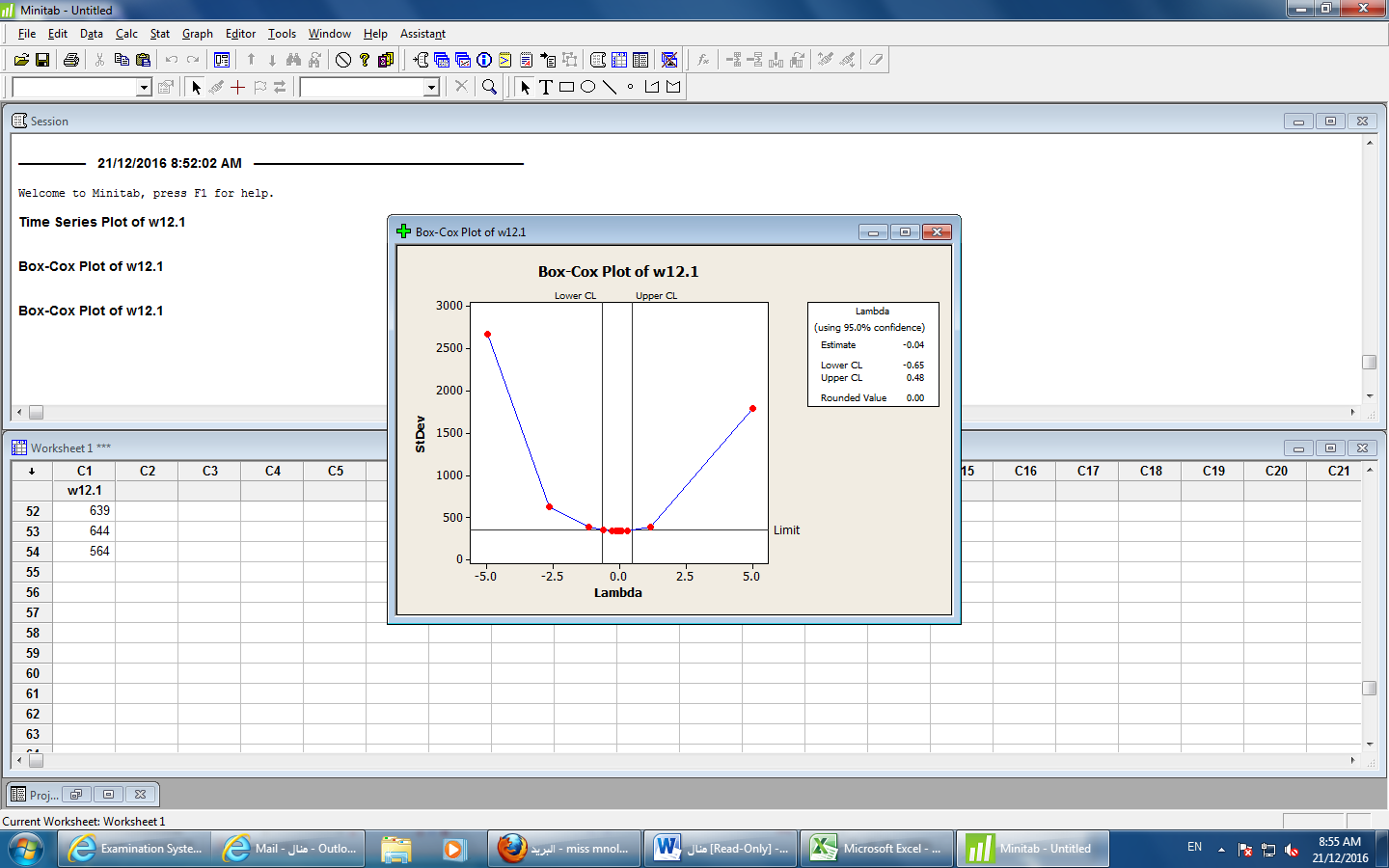
AR 1 0.0745 0.1294 0.58 0.567

AR 2 -0.4068 0.1293 -3.15 0.003

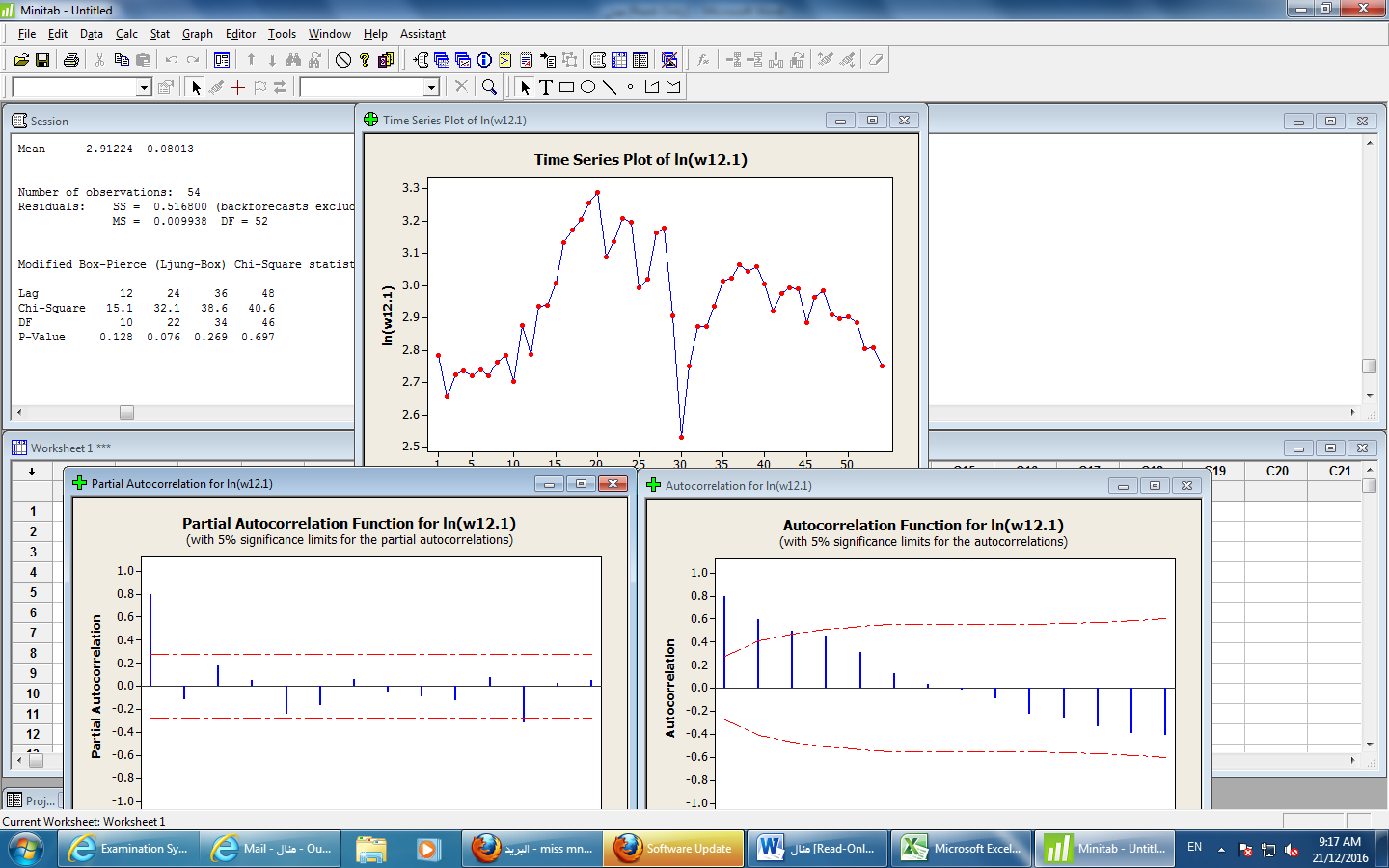
Constant -0.26 28.29 -0.01 0.993

Differencing: 1

**The transformation the lemda = 0**



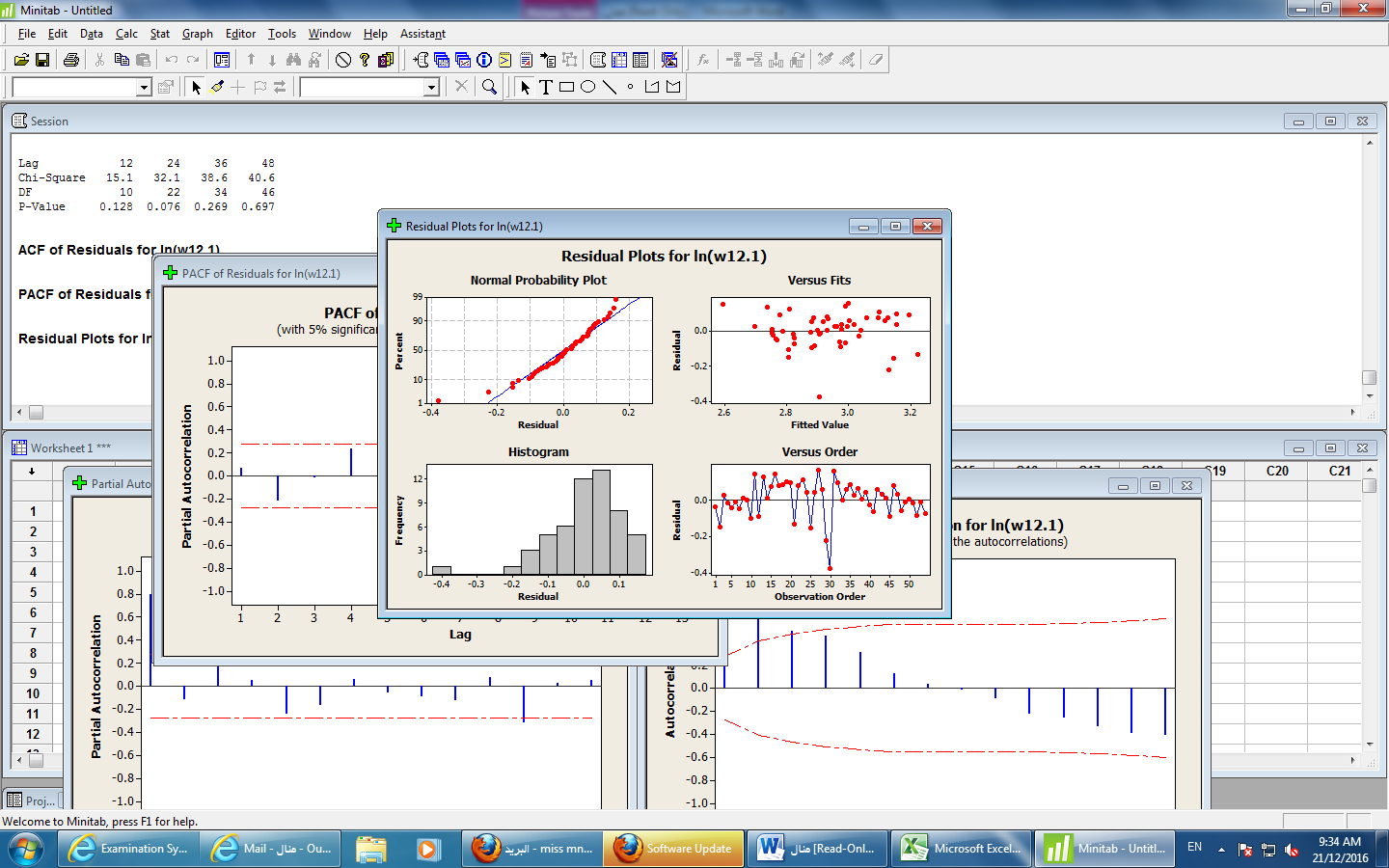
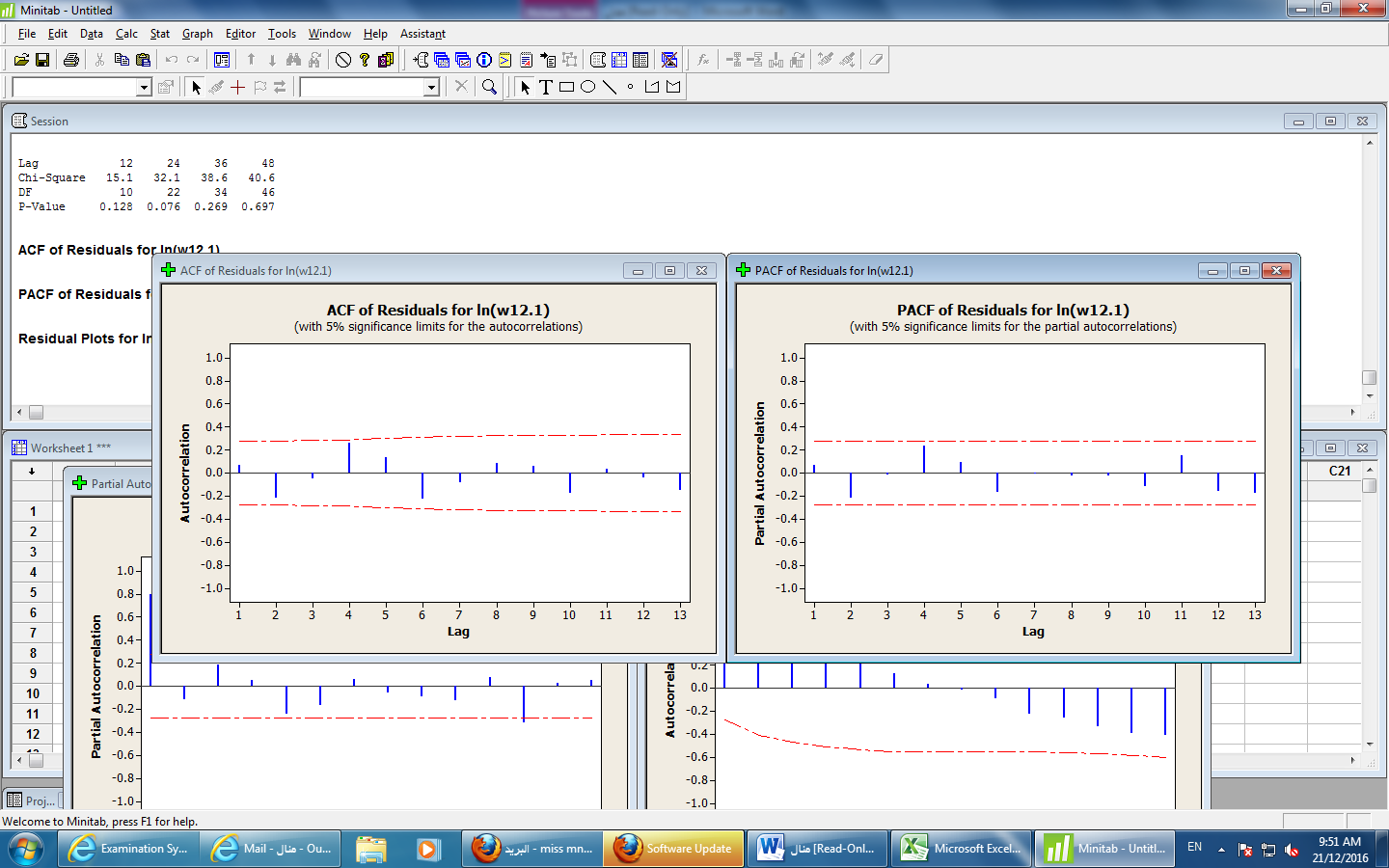
**So I take the logarithms then the model is to be AR(1)**



**The all P-Value of Modified Box-Pierce ≥ 0.05**



**The Autocorrelation and the partial Autocorrelation of riesedual equal zero**



**ARIMA Model: ln(w12.1)**

Estimates at each iteration

Iteration SSE Parameters

0 1.74797 0.100 2.734

1 1.29408 0.250 2.274

2 0.94722 0.400 1.813

3 0.70491 0.550 1.354

4 0.56446 0.700 0.896

5 0.52297 0.809 0.563

6 0.52042 0.824 0.514

7 0.52035 0.828 0.502

8 0.52035 0.829 0.499

Relative change in each estimate less than 0.0010

Final Estimates of Parameters

Type Coef SE Coef T P

AR 1 0.8285 0.0810 10.23 0.000

Constant 0.49932 0.01374 36.34 0.000

Mean 2.91224 0.08013

Number of observations: 54

Residuals: SS = 0.516800 (backforecasts excluded)

MS = 0.009938 DF = 52