```
*---------------------------------*
*          GARCH Model Fit        *
*---------------------------------*

Conditional Variance Dynamics
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GARCH Model      : eGARCH(1,1)
Mean Model       : ARFIMA(4,0,2)
Distribution     : sstd

Optimal Parameters
------------------------------------
        Estimate  Std. Error     t value Pr(>|t|)
mu      0.000332    0.000199    1.666846 0.095545
ar1    -1.675952    0.015459 -108.412915 0.000000
ar2    -0.747606    0.008454  -88.429079 0.000000
ar3     0.069488    0.045454    1.528744 0.126328
ar4    -0.001813    0.018566   -0.097665 0.922198
ma1     1.742355    0.019731   88.305513 0.000000
ma2     0.869004    0.017549   49.518095 0.000000
omega  -0.236403    0.001974 -119.746913 0.000000
alpha1 -0.116217    0.012291   -9.455548 0.000000
beta1   0.974654    0.000353 2761.725443 0.000000
gamma1  0.122139    0.005248   23.274338 0.000000
skew    0.925935    0.026400   35.073484 0.000000
shape   8.717192    1.300200    6.704499 0.000000

Robust Standard Errors:
        Estimate  Std. Error    t value Pr(>|t|)
mu      0.000332    0.000290    1.14580  0.25188
ar1    -1.675952    0.011071 -151.38007  0.00000
ar2    -0.747606    0.024318  -30.74304  0.00000
ar3     0.069488    0.072740    0.95530  0.33943
ar4    -0.001813    0.026439   -0.06858  0.94532
ma1     1.742355    0.015436  112.87895  0.00000
ma2     0.869004    0.032028   27.13292  0.00000
omega  -0.236403    0.005364  -44.07195  0.00000
alpha1 -0.116217    0.014443   -8.04654  0.00000
beta1   0.974654    0.000397 2457.75626  0.00000
gamma1  0.122139    0.009697   12.59512  0.00000
skew    0.925935    0.032364   28.61017  0.00000
shape   8.717192    1.324917    6.57942  0.00000

LogLikelihood : 8697.75

Information Criteria
------------------------------------

Akaike       -6.5176
Bayes        -6.4889
Shibata      -6.5177
Hannan-Quinn -6.5072

Weighted Ljung-Box Test on Standardized Residuals
------------------------------------
                        statistic p-value
Lag[1]                    0.06062  0.8055
Lag[2*(p+q)+(p+q)-1][17]  4.28446  1.0000
```

```
Lag[4*(p+q)+(p+q)-1][29]   8.54797  0.9954
d.o.f=6
H0 : No serial correlation

Weighted Ljung-Box Test on Standardized Squared Residuals
------------------------------------
                        statistic p-value
Lag[1]                      1.069  0.3012
Lag[2*(p+q)+(p+q)-1][5]     2.892  0.4271
Lag[4*(p+q)+(p+q)-1][9]     5.401  0.3730
d.o.f=2

Weighted ARCH LM Tests
------------------------------------
            Statistic Shape Scale P-Value
ARCH Lag[3]    0.2386 0.500 2.000  0.6252
ARCH Lag[5]    3.6140 1.440 1.667  0.2123
ARCH Lag[7]    4.8941 2.315 1.543  0.2355

Nyblom stability test
------------------------------------
Joint Statistic:  3.2324
Individual Statistics:
mu     0.1310
ar1    0.2174
ar2    0.2022
ar3    0.1618
ar4    0.1301
ma1    0.2491
ma2    0.2139
omega  0.4995
alpha1 0.3194
beta1  0.5199
gamma1 0.1797
skew   1.2898
shape  0.2608

Asymptotic Critical Values (10% 5% 1%)
Joint Statistic:          2.89 3.15 3.69
Individual Statistic:     0.35 0.47 0.75

Sign Bias Test
------------------------------------


Adjusted Pearson Goodness-of-Fit Test:
------------------------------------
  group statistic p-value(g-1)
1    20     15.55       0.6872
2    30     35.91       0.1761
3    40     33.49       0.7188
4    50     50.70       0.4062


Elapsed time : 2.572392

              ^nsei
2020-12-23 13601.10
```

2020-12-24	13749.25
2020-12-28	13873.20
2020-12-29	13932.60
2020-12-30	13981.95
2020-12-31	13981.75