

NDK_SARIMAX_VALIDATE

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- [C/C++](#)
- [.Net](#)

```
int __stdcall NDK_SARIMAX_VALIDATE ( double mean,
                                     double sigma,
                                     WORD nIntegral,
                                     double * phis,
                                     size_t p,
                                     double * thetas,
                                     size_t q,
                                     WORD nSIntegral,
                                     WORD nSPeriod,
                                     double * sPhis,
                                     size_t sP,
                                     double * sThetas,
                                     size_t sQ
                                     )
```

Examines the model's parameters for stability constraints (e.g. causality, invertability, stationary, etc.).

Returns

status code of the operation

Return values

NDK_SUCCESS Operation successful

NDK_FAILED Operation unsuccessful. See [Macros](#) for full list.

Parameters

[in] **mean** is the model mean (i.e. μ) for the differenced series.

[in] **sigma** is the standard deviation of the model's residuals/innovations.

[in] **nIntegral** is the non-seasonal difference order

[in] **phis** are the coefficients's values of the non-seasonal AR component

[in] **p** is the order of the non-seasonal AR component

[in] **thetas** are the coefficients's values of the non-seasonal MA component

[in] **q** is the order of the non-seasonal MA component

[in] **nSIntegral** is the seasonal difference

[in] **nSPeriod** is the number of observations per one period (e.g. 12=Annual, 4=Quarter)

[in] **sPhis** are the coefficients's values of the seasonal AR component

- [in] **sP** is the order of the seasonal AR component
- [in] **sThetas** are the coefficients's values of the seasonal MA component
- [in] **sQ** is the order of the seasonal MA component

Remarks

1. The underlying model is described [here](#).
2. The time series is homogeneous or equally spaced
3. The time series may include missing values (e.g. NaN) at either end.
4. SARIMAX_CHECK checks if $\sigma > 0$ and if all the characteristic roots of the underlying ARMA model fall outside the unit circle.
5. Using the Solver Add-in in Excel, you can specify the return value of SARIMAX_CHECK as a constraint to ensure a stationary ARMA model.
6. The intercept or the regression constant term input argument is optional. If omitted, a zero value is assumed.
7. For the input argument - Beta:
 - The input argument is optional and can be omitted, in which case no regression component is included (i.e. plain SARIMA).
 - The order of the parameters defines how the exogenous factor input arguments are passed.
8. The long-run mean argument (mean) of the differenced regression residuals can take any value. If omitted, a zero value is assumed.
9. The residuals/innovations standard deviation (sigma) must greater than zero.
10. For the input argument - phi (parameters of the non-seasonal AR component):
 - The input argument is optional and can be omitted, in which case no non-seasonal AR component is included.
 - The order of the parameters starts with the lowest lag
 - The order of the non-seasonal AR component model is solely determined by the order of the last value in the array with a numeric value (vs. missing, or error).
11. For the input argument - theta (parameters of the non-seasonal MA component):
 - The input argument is optional and can be omitted, in which case no non-seasonal MA component is included.
 - The order of the parameters starts with the lowest lag
 - The order of the non-seasonal MA component model is solely determined by the order of the last value in the array with a numeric value (vs. missing, or error).
12. For the input argument - sPhi (parameters of the seasonal AR component):
 - The input argument is optional and can be omitted, in which case no seasonal AR component is included.
 - The order of the parameters starts with the lowest lag
 - The order of the seasonal AR component model is solely determined by the order of the last value in the array with a numeric value (vs. missing, or error).
13. For the input argument - sTheta (parameters of the seasonal MA component):
 - The input argument is optional and can be omitted, in which case no seasonal MA component is included.
 - The order of the parameters starts with the lowest lag

- The order of the seasonal MA component model is solely determined by the order of the last value in the array with a numeric value (vs. missing, or error).
14. The non-seasonal integration order - d - is optional and can be omitted, in which case d is assumed zero.
 15. The seasonal integration order - sD - is optional and can be omitted, in which case sD is assumed zero.
 16. The season length - s - is optional and can be omitted, in which case s is assumed zero (i.e. Plain ARIMA).

Requirements

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Examples

References

Hamilton, J .D.; [Time Series Analysis](#), Princeton University Press (1994), ISBN 0-691-04289-6

Tsay, Ruey S.; [Analysis of Financial Time Series](#) John Wiley & SONS. (2005), ISBN 0-471-690740

See Also

[template("related")]