

# NDK\_MAE

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- C/C++
- .Net

```
int __stdcall NDK_MAE(double * X,  
                    double * Y,  
                    size_t  N,  
                    double * retVal  
                    )
```

Calculates the mean absolute error function for the forecast and the eventual outcomes.

## Returns

status code of the operation

## Return values

**NDK\_SUCCESS** Operation successful

**NDK\_FAILED** Operation unsuccessful. See [Macros](#) for full list.

## Parameters

[in] **X** is the original (eventual outcomes) time series sample data (a one dimensional array).

[in] **Y** is the forecast time series data (a one dimensional array).

[in] **N** is the number of observations in X.

[out] **retVal** is the calculated value of this function.

## Remarks

1. The mean absolute error is a common measure of forecast error in time series analysis.
2. The time series is homogeneous or equally spaced.
3. The two time series must be identical in size.
4. The mean absolute error is given by:

$$\mathrm{MAE} = \frac{\mathrm{SAE}}{N} = \frac{\sum_{i=1}^N \left| x_i - \hat{x}_i \right|}{N},$$

where:

- $\{x_i\}$  is the actual observations time series.
- $\{\hat{x}_i\}$  is the estimated or forecasted time series.
- $\{\mathrm{SAE}\}$  is the sum of the absolute errors (or deviations).
- $\{N\}$  is the number of non-missing data points.

## Requirements

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<b>Header</b>	SFSDK.H
<b>Library</b>	SFSDK.LIB
<b>DLL</b>	SFSDK.DLL

## Examples

```
int NDK_MAE(double[] pData1,
            double[] pData2,
            UIntPtr nSize,
            ref double retVal
            )
```

**Namespace:** NumXLAPI  
**Class:** SFSDK  
**Scope:** Public  
**Lifetime:** Static

Calculates the mean absolute error function for the forecast and the eventual outcomes.

### Return Value

a value from [NDK\\_RETCODE](#) enumeration for the status of the call.

**NDK\_SUCCESS** operation successful  
 Error                      Error Code

### Parameters

- [in] **pData1** is the original (eventual outcomes) time series sample data (a one dimensional array).
- [in] **pData2** is the forecast time series data (a one dimensional array).
- [in] **nSize** is the number of observations in pData1.
- [out] **retVal** is the calculated value of this function.

### Remarks

1. The mean absolute error is a common measure of forecast error in time series analysis.
2. The time series is homogeneous or equally spaced.
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4. The mean absolute error is given by:

$$\mathrm{MAE} = \frac{\mathrm{SAE}}{N} = \frac{\sum_{i=1}^N \left| x_i - \hat{x}_i \right|}{N}$$
 where:

- $\{x_i\}$  is the actual observations time series.
- $\{\hat{x}_i\}$  is the estimated or forecasted time series.

- $\sum \text{SAE}$  is the sum of the absolute errors (or deviations).
- $N$  is the number of non-missing data points.

### Exceptions

Exception Type	Condition
None	N/A

### Requirements

Namespace	NumXLAPI
Class	SFSDK
Scope	Public
Lifetime	Static
Package	NumXLAPI.DLL

### Examples

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### References

Hull, John C.; [Options, Futures and Other Derivatives](#) Financial Times/ Prentice Hall (2011), ISBN 978-0132777421

### See Also

[template("related")]

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