

NDK_MAD

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- C/C++
- .Net

```
int __stdcall NDK_MAD(double * X,  
                    size_t  N,  
                    WORD   reserved,  
                    double * retVal  
                    )
```

Returns the sample median of absolute deviation (MAD).

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 input data sample (a one/two dimensional array).

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

[in] **reserved** This parameter is reserved and must be 1.

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

Remarks

1. The input data series may include missing values (NaN), but they will not be included in the calculations.
2. The median of absolute deviation (MAD) is defined as follows:
$$\text{MAD} = \text{median} \left(\left| X_i - \text{median}(X_j) \right| \right)$$
3. In short, starting with the deviations from the data's median, the MAD is the median of their absolute values.
4. The median of absolute deviation (MAD) is a measure of statistical dispersion.
5. MAD is a more robust estimator of scale than the sample variance or standard deviation.
6. MAD is especially useful with distributions that have neither mean nor variance (e.g. the Cauchy distribution.)
7. MAD is a robust statistic because it is less sensitive to outliers in a data series than standard deviation.

Requirements

Header	SFSDK.H
Library	SFSDK.LIB
DLL	SFSDK.DLL

Examples

```
int NDK_MAD(double[] pData,
            UIntPtr nSize,
            short argMenthod,
            ref double retVal
            )
```

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

Returns the sample median of absolute deviation (MAD).

Return Value

a value from [NDK_RETCODE](#) enumeration for the status of the call.

NDK_SUCCESS operation successful

Error Error Code

Parameters

[in] **pData** is the input data sample (a one/two dimensional array).

[in] **nSize** is the number of observations in pData.

[in] **argMenthod** This parameter is reserved and must be 1.

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

Remarks

1. The input data series may include missing values (NaN), but they will not be included in the calculations.

2. The median of absolute deviation (MAD) is defined as follows:

$$\operatorname{MAD} = \operatorname{median}_i \left(\left| X_i - \operatorname{median}_j (X_j) \right| \right)$$

3. In short, starting with the deviations from the data's median, the MAD is the median of their absolute values.

4. The median of absolute deviation (MAD) is a measure of statistical dispersion.

5. MAD is a more robust estimator of scale than the sample variance or standard deviation.
6. MAD is especially useful with distributions that have neither mean nor variance (e.g. the Cauchy distribution.)
7. MAD is a robust statistic because it is less sensitive to outliers in a data series than standard deviation.

Exceptions

Exception Type	Condition
None	N/A

Requirements

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

Examples

References

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

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

See Also

[template("related")]
