RealizedEst **Realized GARCH-Ito Model**

**Description**

Estimate model parameters for the Realized GARCH-Ito Model

**Usage**

RealizedEst(RV = RV, JV = NULL)

**Arguments**

RV Time series of daily realized volatilities.

JV Time series of daily jump variations,

**Value**

Estimated parameter values and daily conditional volatilities:

- **coefficients** parameter estimates of the realized GARCH-Ito model
- **sigma** daily conditional volatility estimates of the realized GARCH-Ito model
- **pred** one-step-ahead predicted volatility value

**References**


**Examples**

```r
sample_data
RealizedEst(sample_data$RV)
RealizedEst(sample_data$BPV, sample_data$JV)
```

RealizedEst_Option **Realized GARCH-Ito Model with Options**

**Description**

Estimate model parameters for the Realized GARCH-Ito Model with Options

**Usage**

RealizedEst_Option(RV = RV, JV = NULL, NV = NULL, homogeneous = TRUE)
Arguments

RV  Time series of daily realized volatilities.
JV  Time series of daily jump variations,
NV  Time series of daily volatilities estimated using option data
homogeneous  Whether to assume homogeneous error in the linear regression model between conditional volatility of the realized GARCH-Ito model and volatility estimated from the option data, default is TRUE.

Value

Estimated parameter values and daily conditional volatilities:

- **coefficients**  parameter estimates of the realized GARCH-Ito model
- **sigma**  daily conditional volatility estimates of the realized GARCH-Ito model
- **pred**  one-step-ahead predicted volatility value

References


---

**sample_data  CSI 300 Index Realized Measures**

Description

This sample data set contains realized measures, such as realized volatility (RV), bi-power realized volatility (BPV) and jump variation (JV) estimated from CSI 300 Index high-frequency data, it also includes daily low-frequency log returns (return).

Usage

```r
sample_data
```

Format

An object with the following elements:

- **RV**  times series of daily realized volatility estimates
- **BPV**  times series of daily bi-power realized volatility estimates
- **JV**  time series of daily jump variation estimates
- **return**  time series of daily low-frequency returns
UnifiedEst

Unified GARCH-Ito Models

Description

Estimate model parameters for the Unified GARCH-Ito Model.

Usage

UnifiedEst(RV = RV, return = return)

Arguments

RV
Time series of daily realized volatilities.
return
Time series of daily log returns.

Value

Estimated parameter values and daily conditional volatilities:

coefficients parameter estimates of the realized GARCH-Ito model
sigma daily conditional volatility estimates of the realized GARCH-Ito model
pred one-step-ahead predicted volatility value

References


Examples

sample_data
UnifiedEst(sample_data$RV, sample_data$return)
Index

* datasets
  sample_data, 3

RealizedEst, 2
RealizedEst_Option, 2

sample_data, 3

UnifiedEst, 4