

# Package ‘JFE’

December 6, 2017

**Type** Package

**Title** A Menu-Driven GUI for Analyzing and Modelling Data of Just Finance and Econometrics

**Version** 1.0

**Date** 2017-12-06

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**Description** The Just Finance and Econometrics ('JFE') provides a 'tcltk' based interface to global assets selection and portfolio optimization. 'JFE' aims to provide a simple GUI that allows a user to quickly load data from a .RData (.rda) file, explore the data and evaluate financial models. Invoked as JFE(), 'JFE' exports a number of utility functions for visualizing assets price (e.g. technical charting) and returns, selecting assets by performance index (based on the package 'PerformanceAnalytics') and backtesting specific portfolio profiles (based on the package 'fPortfolio').

**License** GPL (>= 2)

**LazyData** TRUE

**LazyLoad** yes

**Depends** R (>= 2.10),fPortfolio,xts

**Imports** BurStFin, fAssets, fBasics, iClick, MASS, PerformanceAnalytics, quantmod, tcltk, tcltk2, timeDate, timeSeries, zoo

**NeedsCompilation** no

**Repository** CRAN

**Date/Publication** 2017-12-06 09:34:19 UTC

## R topics documented:

data-sets . . . . .	2
JFE . . . . .	2
Portfolio-covFunctions . . . . .	3

<b>Index</b>	<b>6</b>
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data-sets

*Assets Data Sets*

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### Description

Example data sets.

### Usage

```
DJ30  
IBM  
world20
```

### Value

an object of class "timeSeries" or "xts".

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JFE

*Display the JFE User Interface*

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### Description

Start the JFE GUI (graphical user interface)

### Usage

```
JFE()
```

### Details

After loading the package, in the command prompt, type `JFE()` to start it. JFE is a menu-driven GUI designed to support the analysis of financial time series data with the aid of several R packages. The version 1.0 focuses on: Firstly, price visualization, including technical charting (by package `quantmod`); secondly, assets selection based on Performance index (by package `PerformanceAnalytics`); thirdly, portfolio optimization (by package `fPortfolio`).

This command is an internal function to start the JFE GUI. To avoid unexpected problems of time series object, the imported data must be time series object (`xts`, or `timeSeries`) loaded by either `.RData` or `.rda`, file of `.csv` or other format is not supported; that is to say, users have only to know how to construct a R time-series object.

# Github: <https://github.com/tsungwu/JFE> # URL: [http://iclick-r.idv.tw/R\\_PkgDev/main.htm](http://iclick-r.idv.tw/R_PkgDev/main.htm)

### Value

Generate a menu-driven GUI

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**Examples**

JFE()

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Portfolio-covFunctions

*User defined functions to perform portfolio backtesting*

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**Description**

Covariance estimators and GMVP strategy functions used for portfolio backtesting.

**Usage**

```
covLedoit(data, spec = NULL)
covStudent(data, spec = NULL)
GMVPStrategy(data, spec = portfolioSpec(), constraints = "LongOnly",
  backtest = portfolioBacktest())
GoldSach(data, spec = NULL)
ShrinkCC(data, spec = NULL)
SKCov(data)
```

**Arguments**

data	a multivariate time series described by an S4 object of class <code>timeSeries</code> . If your <code>timeSeries</code> is not a <code>timeSeries</code> object, consult the generic function <code>as.timeSeries</code> to convert your time series.
backtest	an S4 object of class <code>fPFOLIOBACKTEST</code> as returned by the function <code>portfolioBacktest</code> .
spec	an S4 object of class <code>fPFOLIOSPEC</code> as returned by the function <code>portfolioSpec</code> .
constraints	a character string vector, containing the constraints of the form <code>"minW[asset]=percentage"</code> for box constraints resp. <code>"maxsumW[assets]=percentage"</code> for sector constraints.

**Details****covLedoit:**

A wrapper for Ledoit-Wolf Shrinkage covariance estimator

The function requires two arguments: `data` and `spec`, see above.

**covStudent:**

Defines Student t covariance estimator

The function requires two arguments: data and spec, see above.

**GMVPStrategy:**

A pre-defined tangency portfolio strategy.

The function requires four arguments: data, spec, constraints and backtest, see above.

**GoldSach:**

Defines a Litterman-Winkelmann(1998) covariance estimator

The function requires two arguments: data and spec, see above.

**ShrinkCC:**

Defines a function for Ledoit-Wolf covariance estimator with constant correlation.

The function requires two arguments: data and spec, see above.

**SKCov:**

Defines a function for Ledoit-Wolf covariance estimator

The function requires one argument: data, see above.

**Value**

covLedoit  
function returns a covariance matrix .

covStudent  
function returns a covariance matrix .

GMVPStrategy  
function returns a S4 object of class "fPORTFOLIO".

GoldSach  
function returns a covariance matrix.

ShrinkCC  
function returns a covariance matrix.

SKCov  
function returns a covariance matrix.

**Author(s)**

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**References**

- Kent J. T., D. E. Tyler and Y. Vardi (1994). A curious likelihood identity for the multivariate t distribution. *Communications in Statistics—Simulation and Computation* 23, 441–453.
- Ledoit, O. and M. Wolf (2003) Improved estimation of the covariance matrix of returns with an application to portfolio selection. *Journal of Empirical Finance* 10, 603-621.
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- Robert Litterman and Kurt Winkelmann (1998) Estimating Covariance Matrices. Risk Management Series, Gold Sachs.

# Index

\*Topic **datasets**

data-sets, [2](#)

\*Topic **models**

Portfolio-covFunctions, [3](#)

covLedoit (Portfolio-covFunctions), [3](#)

covStudent (Portfolio-covFunctions), [3](#)

data-sets, [2](#)

dataSets (data-sets), [2](#)

DJ30 (data-sets), [2](#)

GMVPStrategy (Portfolio-covFunctions), [3](#)

GoldSach (Portfolio-covFunctions), [3](#)

IBM (data-sets), [2](#)

JFE, [2](#)

Portfolio-covFunctions, [3](#)

ShrinkCC (Portfolio-covFunctions), [3](#)

SKCov (Portfolio-covFunctions), [3](#)

world20 (data-sets), [2](#)