Package `stressr`

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**Title** Fetch and plot financial stress index and component data.

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**Description** Forms queries to submit to the Cleveland Federal Reserve Bank web site's financial stress index data site. Provides query functions for both the composite stress index and the components data. By default the download includes daily time series data starting September 25, 1991. The functions return a class of either type easing or cfsi which contain a list of items related to the query and its graphical presentation. The list includes the time series data as an xts object. The package provides four lattice time series plots to render the time series data in a manner similar to the bank's own presentation.

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**URL** https://github.com/mrbcuda/stressr

**BugReports** https://github.com/mrbcuda/stressr/issues

**Imports** xts, XML, lattice, latticeExtra

**Suggests** testthat

**NeedsCompilation** no

**Repository** CRAN

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**R topics documented:**

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getComponentSummary Get stress components summary

Description
Downloads FRB financial stress index component data.

Usage
getComponentSummary(s = NULL)

Arguments
s the list of class stress from previous queries, or NULL to perform new query

Details
Downloads the Cleveland FRB data products for financial stress index components daily time series. Component values include

- foreign exchange markets
- credit markets
- interbank markets
- equity markets
- real estate market
- securitization market

Value
A list of class stress

See Also
getStressData getEquityMarkets getFundingMarkets getCreditMarkets getForeignExchangeMarkets getRealEstateMarkets getSecuritizationMarkets
getCreditMarkets

Examples

```r
# Not run:
getEquityMarkets()

# End(Not run)
```

---

**getCreditMarkets**  
*Get credit markets stress components*

**Description**

Downloads FRB financial stress index component data.

**Usage**

```r
getCreditMarkets(s = NULL)
```

**Arguments**

- `s`: the list of class `stress` from previous queries, or `NULL` to perform new query

**Details**

Downloads the Cleveland FRB data products for financial stress index components daily time series. Component values include

- liquidity spread
- covered interest spread
- commercial paper - t-bill spread
- treasury yield curve spread
- corporate bond spread

**Value**

A list of class `stress`

**See Also**

`getStressData` `getEquityMarkets` `getFundingMarkets` `getForeignExchangeMarkets` `getRealEstateMarkets` `getSecuritizationMarkets`

**Examples**

```r
# Not run:
getCreditMarkets()

# End(Not run)
```
getEquityMarkets  

Get equity markets stress components

Description

Downloads FRB financial stress index component data.

Usage

getequitymarkets(s = NULL)

Arguments

s  
the list of class stress from previous queries, or NULL to perform new query

Details

Downloads the Cleveland FRB data products for financial stress index components daily time series. Component values include

• stock market crashes

Value

A list of class stress

See Also

getStressData getEquityMarkets getFundingMarkets getCreditMarkets getForeignExchangeMarkets getRealEstateMarkets getSecuritizationMarkets

Examples

## Not run:
getequitymarkets()

## End(Not run)
getForeignExchangeMarkets

Get foreign exchange markets stress components

Description

Downloads FRB financial stress index component data.

Usage

getForeignExchangeMarkets(s = NULL)

Arguments

s the list of class stress from previous queries, or NULL to perform new query

Details

Downloads the Cleveland FRB data products for financial stress index components daily time series. Component values include

• weighted dollar crashes

Value

A list of class stress

See Also

getStressData getEquityMarkets getCreditMarkets getFundingMarkets getRealEstateMarkets getSecuritizationMarkets

Examples

```r
## Not run:
getForeignExchangeMarkets()

## End(Not run)
```
getFundingMarkets  

### Description
Downloads FRB financial stress index component data.

### Usage
```r
getFundingMarkets(s = NULL)
```

### Arguments
- `s`: the list of class `stress` from previous queries, or NULL to perform new query

### Details
Downloads the Cleveland FRB data products for financial stress index components daily time series. Component values include:
- financial beta
- interbank cost of borrowing
- bank bond spread
- interbank liquidity spread

### Value
A list of class `stress`

### See Also
- `getStressData`
- `getEquityMarkets`
- `getCreditMarkets`
- `getForeignExchangeMarkets`
- `getRealEstateMarkets`
- `getSecuritizationMarkets`

### Examples
```r
## Not run:
getFundingMarkets()

## End(Not run)
```
getRealEstateMarkets  

Get foreign exchange markets stress components

Description
Downloads FRB financial stress index component data.

Usage
getRealEstateMarkets(s = NULL)

Arguments
s  the list of class stress from previous queries, or NULL to perform new query

Details
Downloads the Cleveland FRB data products for financial stress index components daily time series. Component values include

- commercial real estate spread
- residential real estate spread

Value
A list of class stress

See Also
getStressData getEquityMarkets getCreditMarkets getFundingMarkets getForeignExchangeMarkets getSecuritizationMarkets

Examples
## Not run:
getRealEstateMarkets()

## End(Not run)
getSecuritizationMarkets

Get securitization markets stress components

Description

Downloads FRB financial stress index component data.

Usage

getSecuritizationMarkets(s = NULL)

Arguments

s the list of class stress from previous queries, or NULL to perform new query

Details

Downloads the Cleveland FRB data products for financial stress index components daily time series. Component values include

- residential MBS spread
- commercial MBS spread
- asset-backed security spread

Value

A list of class stress

See Also

getStressData getEquityMarkets getCreditMarkets getFundingMarkets getForeignExchangeMarkets getRealEstateMarkets

Examples

```r
## Not run:
geSecuritizationMarkets()

## End(Not run)
```
getStressComponents

Description
Downloads Cleveland FRB financial stress index data.

Usage
getStressComponents(verbosE = FALSE)

Arguments
verbose whether to print progress messages, default FALSE

Details
Transforms the HTML into a data frame, transforms the character date into Date objects, and then an xts object.

Value
List of class type stress containing xts time history object df, plot colors array colors, default plot main title main, and default plot y-axis label ylab.

Note
Meant for internal use by the other, more specific, query functions.

References
http://www.clevelandfed.org/research/data/financial_stress_index/index.cfm

See Also
getStressIndex

Examples
## Not run:
getStressComponents()

## End(Not run)
getStressIndex

Get financial stress index data.

Description

Downloads Cleveland FRB financial stress index data.

Usage

getStressIndex(transparent = FALSE)

Arguments

verbose whether to print progress messages, default FALSE

Details

Transforms the HTML into a data frame, transforms the character date into Date objects, and then an xts object.

Value

List of class type cfsi containing xts time history object df, plot colors array colors, default plot main title main, and default plot y-axis label ylab.

References

http://www.clevelandfed.org/research/data/financial_stress_index/index.cfm

See Also

getStressComponents

Examples

## Not run:
getStressIndex()

## End(Not run)
stressAreaChart

Financial stress component data as a stacked area chart.

Description

Provides a convenience function for passing a stress object to xyplot to render a sand (stacked area) chart.

Usage

stressAreaChart(e, range = NA)

Arguments

e an object of class stress as returned by getStressComponents and its many offspring.

range a range string as used by xts to subset time series dates, e.g. "1996/1997". Defaults to NA for full range.

Details

Provides several assumptions about the display of the stress data to correspond to similar presentations at the Cleveland Fed’s data site. To implement the stacked area chart the function first computes the column-wise value accumulations, then passes these values to the latticeExtra xyarea polygon rendering tools. Plots the columns in reverse stacking order to show the desired overlaps.

See Also

xyplot.stress stressLineChart getStressComponents getComponentSummary getEquityMarkets getFundingMarkets getCreditMarkets getForeignExchangeMarkets getRealEstateMarkets getSecuritizationMarkets

Examples

```r
## Not run:
es <- getEquityStress()
stressAreaChart(es)

## End(Not run)
```
stressIndexChart

Financial stress index data line chart with regions.

Description

Provides a convenience function for passing a cfsi object to xyplot with attributes as presented by the source.

Usage

stressIndexChart(e, range = NA, showGradeRegions = TRUE)

Arguments

e             an object of class cfsi as returned by getStressIndex.
range         a range string as used by xts to subset time series dates, e.g. "1996/1997". Defaults to NA for full range.
showGradeRegions    whether to show the stress grade regions and labels

Details

Provides several assumptions about the display of the cfsi data to correspond to similar presentations at the Cleveland Fed’s data site.

See Also

xyplot.cfsi getStressIndex

Examples

## Not run:
idx <- getStressIndex()
stressIndexChart(idx)

## End(Not run)
stressLineChart

Financial stress component data as an unstacked line chart.

Description

Provides a convenience function for passing a stress object to xyplot.

Usage

stressLineChart(e, range = NA)

Arguments

e an object of class stress as returned by getStressComponents and its many offspring.

range a range string as used by xts to subset time series dates, e.g. "1996/1997". Defaults to NA for full range.

Details

Provides several assumptions about the display of the stress data to correspond to similar presentations at the Cleveland Fed’s data site.

See Also

xyplot.stress stressAreaChart getStressComponents getComponentSummary getEquity Markets getFundingMarkets getCreditMarkets getForeignExchangeMarkets getRealEstateMarkets getSecuritizationMarkets

Examples

## Not run:
es <- getEqityStress()

## End(Not run)

stressr

Financial stress index component data.

Description

Fetches financial stress index component data as time series and provides plots.
Details

Downloads the financial stress index component daily data in its original XLS format from the Federal Reserve Bank of Cleveland’s web site, and then translates that data into an xts time series object with stress component value histories as columns. Provides custom lattice line and area plot functions for data presentation.

Author(s)

Matt Barry <mrb@softisms.com>

References

Federal Reserve Bank of Cleveland research data site http://www.clevelandfed.org/research/data/financial_stress_index/index.cfm

Description

Provides a convenience function for passing an cfsi object to xyplot.

Usage

## S3 method for class 'cfsi'
xyplot(x, ...)

Arguments

x an object of class stress as returned by getStressIndex.

... other parameters passed to xyplot.

See Also

stressLineChart stressAreaChart getStressIndex xyplot.stress

Examples

## Not run:
ci = getStressIndex()
xyplot(ci)

## End(Not run)
Description

Provides a convenience function for passing an stress object to xyplot.

Usage

```r
## S3 method for class 'stress'
xyplot(x, ...)
```

Arguments

- `x` an object of class stress as returned by `getStressComponents` and its many offspring.
- `...` other parameters passed to `xyplot`.

See Also

- `stressLineChart`  
- `stressAreaChart`  
- `getStressComponents`  
- `xyplot.cfsi`

Examples

```r
## Not run:
require(lattice)
fs <- getFundingStress()
xyplot(fs)

## End(Not run)
```
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