# Financial Stress Index and Components

Package `stressr` provides convenient access to the financial stress index data made available by the Federal Reserve Bank of Cleveland. The package provides data download functions and some representative plots along the same categories as provided by the bank. See the <u>terms of use</u> for these data provided by the FRB.

The web service data are labeled XLS but are actually HTML format. The query functions parse this HTML into an `xts` daily time series.

## Cleveland Financial Stress Index

This particular plot has the option to show the graded regions for low, normal, moderate, and significant stress indications. We use the bank's thresholds as specified at <u>the web site</u>.

```
require(stressr)
```
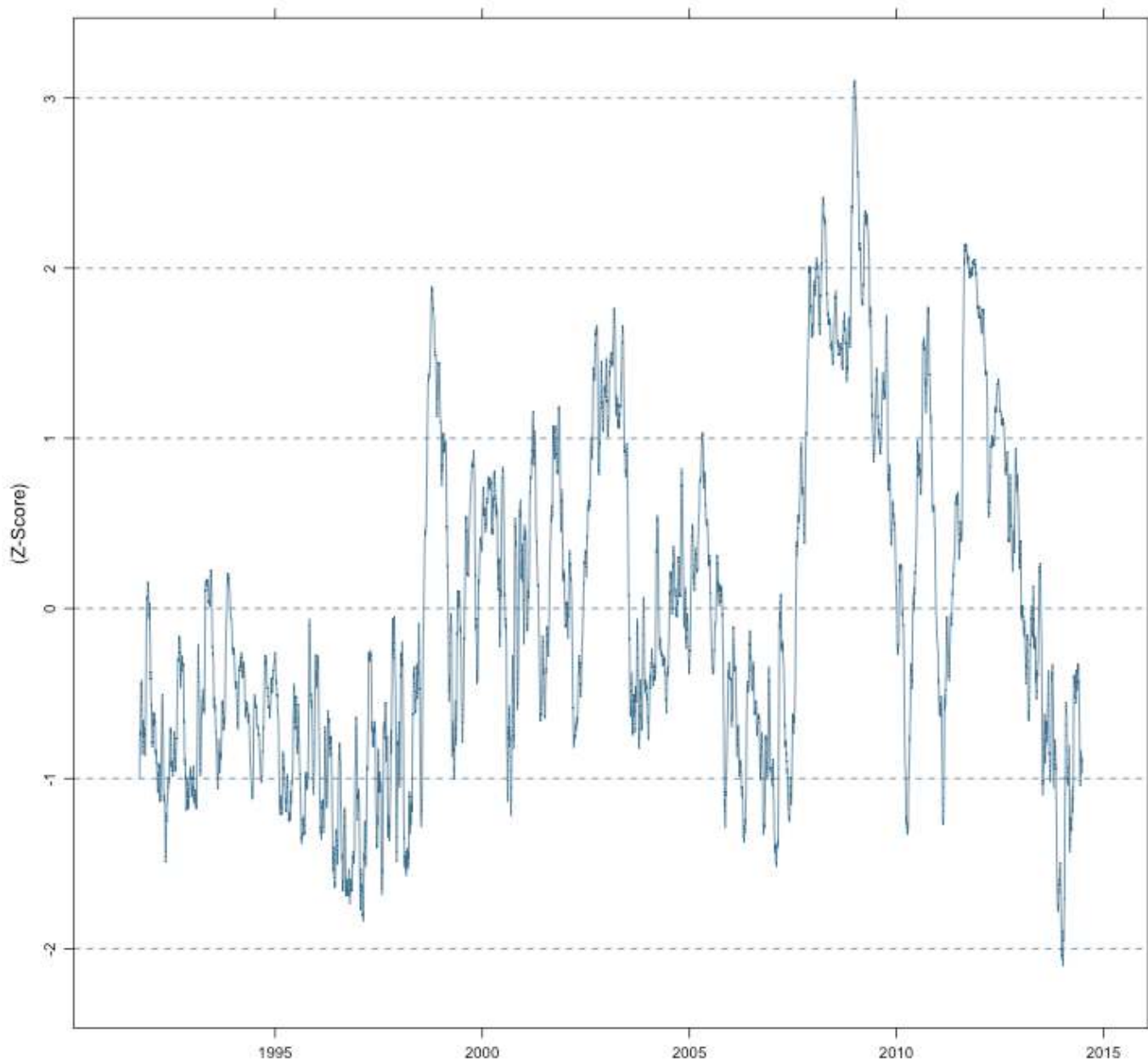
```
## Loading required package: stressr
```

```
require(lattice)
```

```
## Loading required package: lattice
```
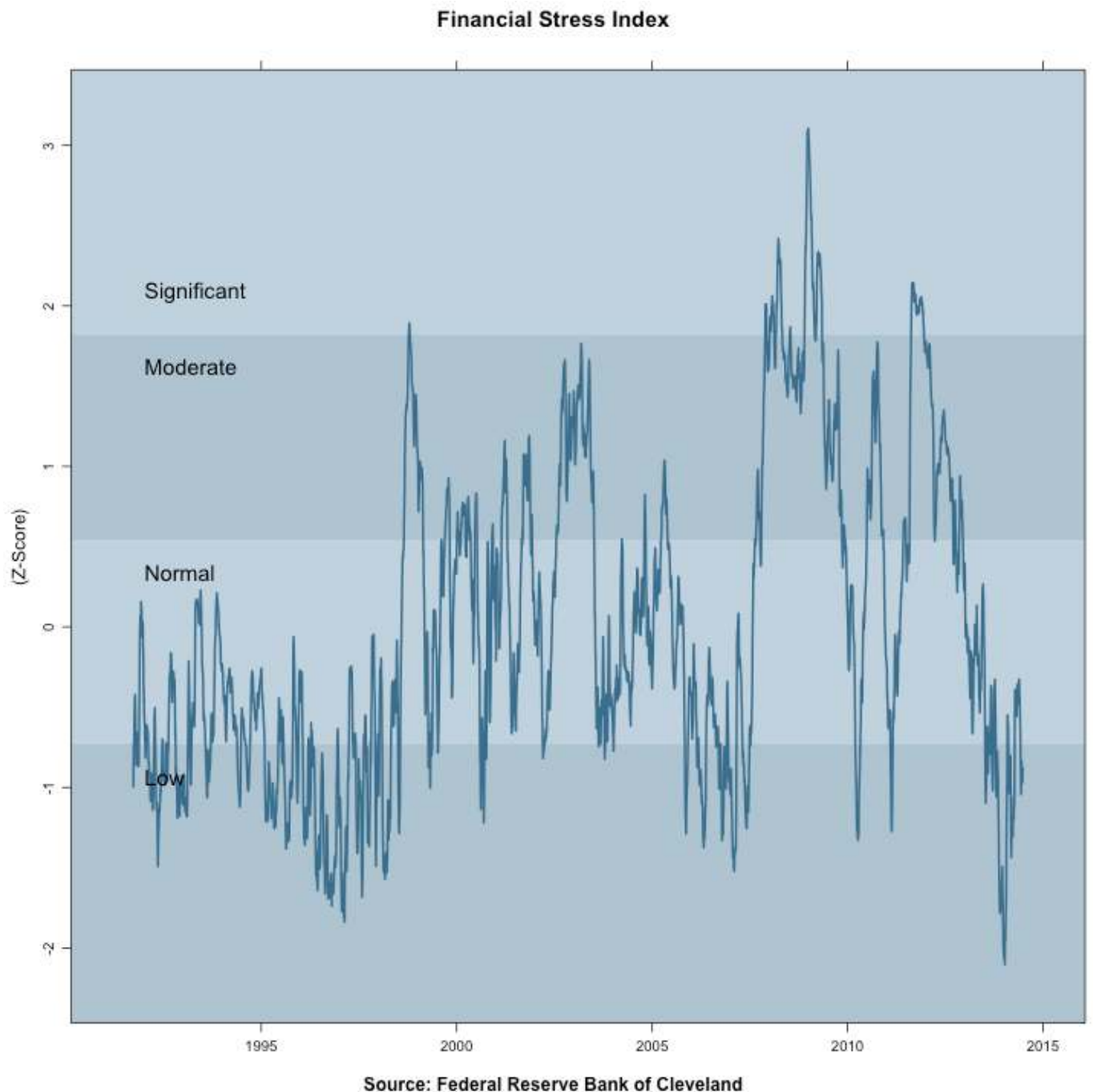
```
idx <- getStressIndex()
xyplot(idx)
```

```
## Loading required package: xts
## Loading required package: zoo
##
## Attaching package: 'zoo'
##
## The following objects are masked from 'package:base':
##
##      as.Date, as.Date.numeric
```

## Financial Stress Index



Source: Federal Reserve Bank of Cleveland

```
stressIndexChart(idx)
```

**Financial Stress Index**



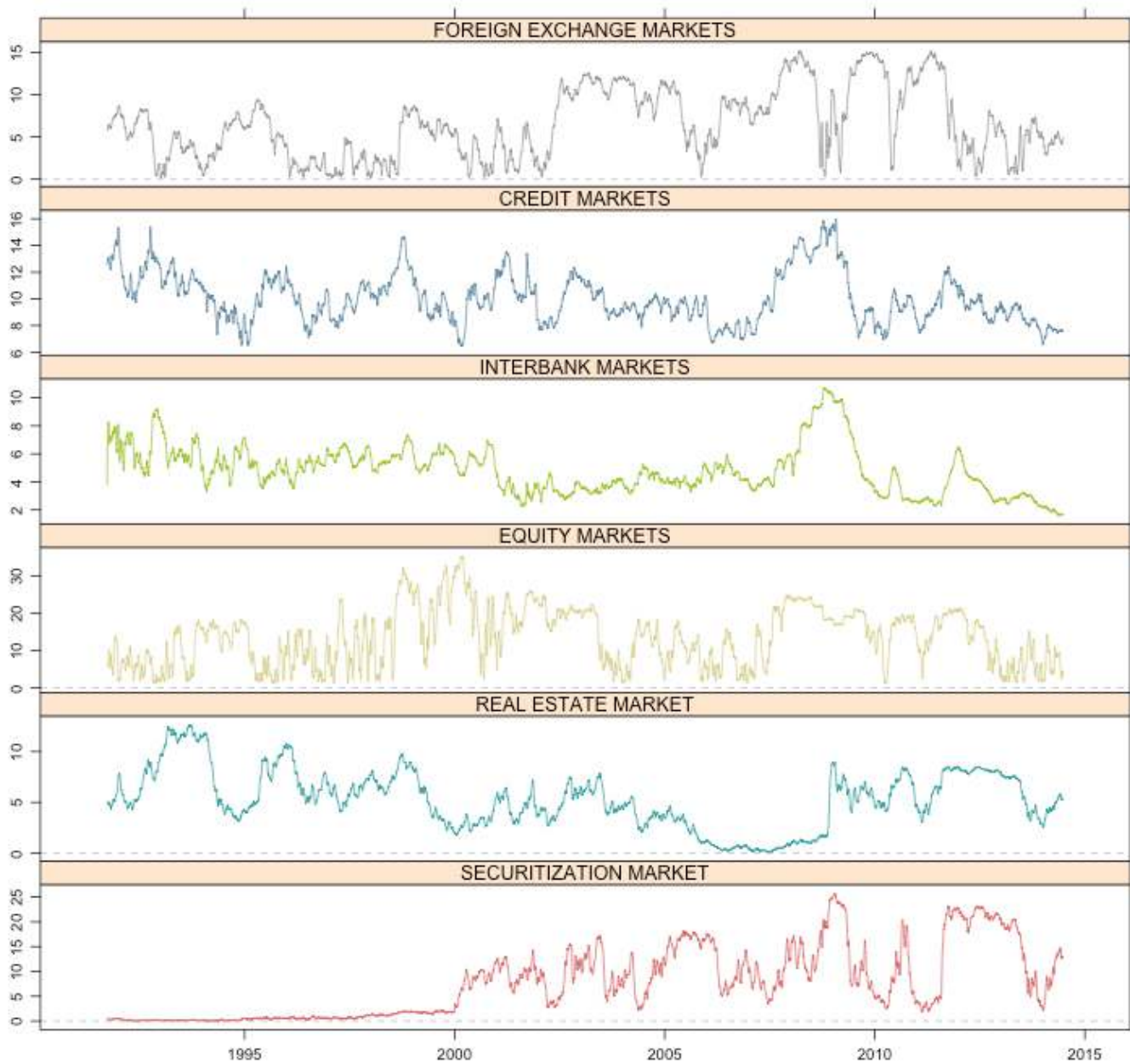Source: Federal Reserve Bank of Cleveland

# Component Summary Report

Once we fetch the component data we can reuse the data to avoid multiple queries when using subsets of that data for presentation.
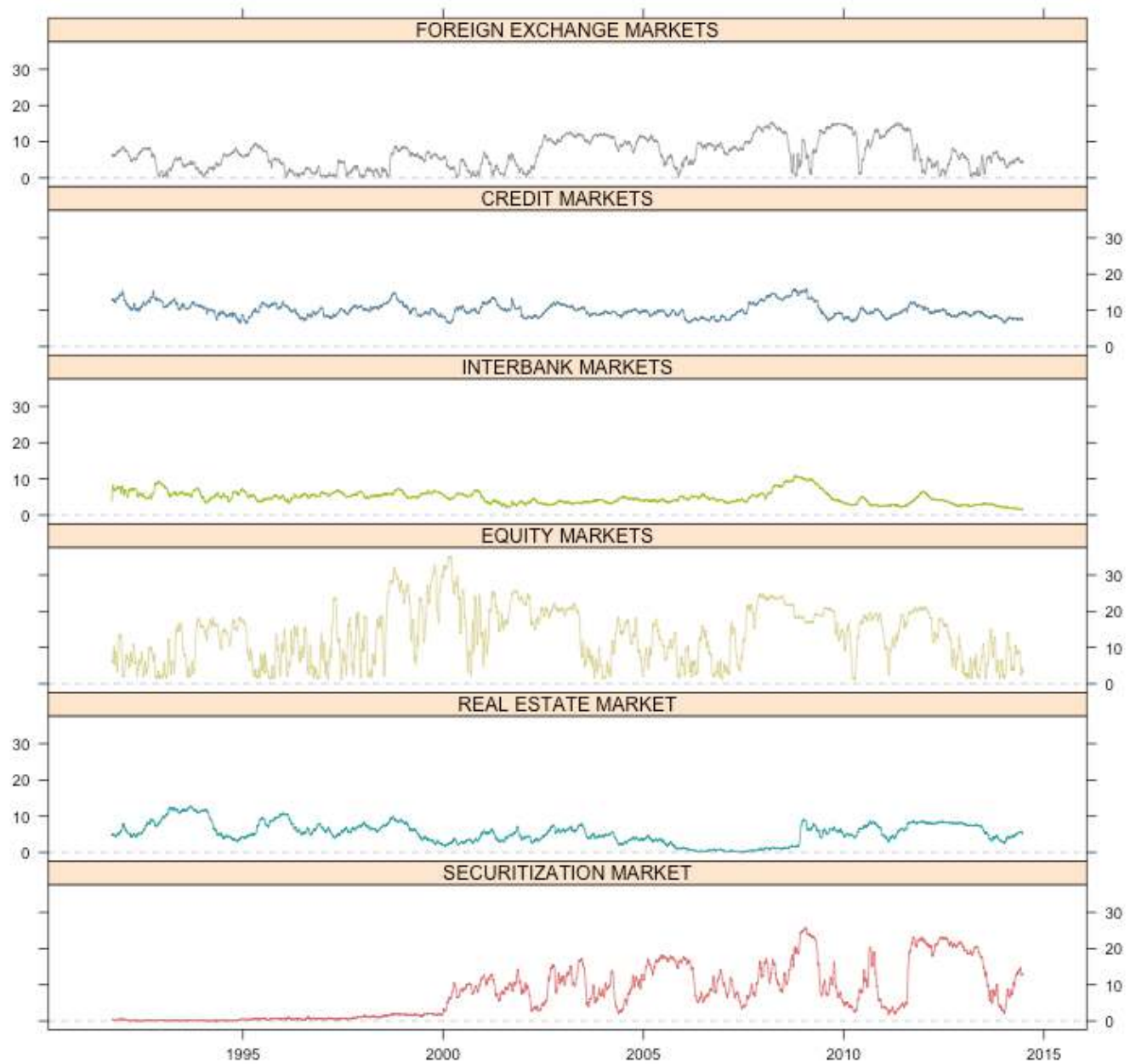
```
cs <- getComponentSummary()
xyplot(cs)
```

## Components of the CFSI - Summary



Source: Federal Reserve Bank of Cleveland

```
xyplot(cs,scales=list(y="same"))
```
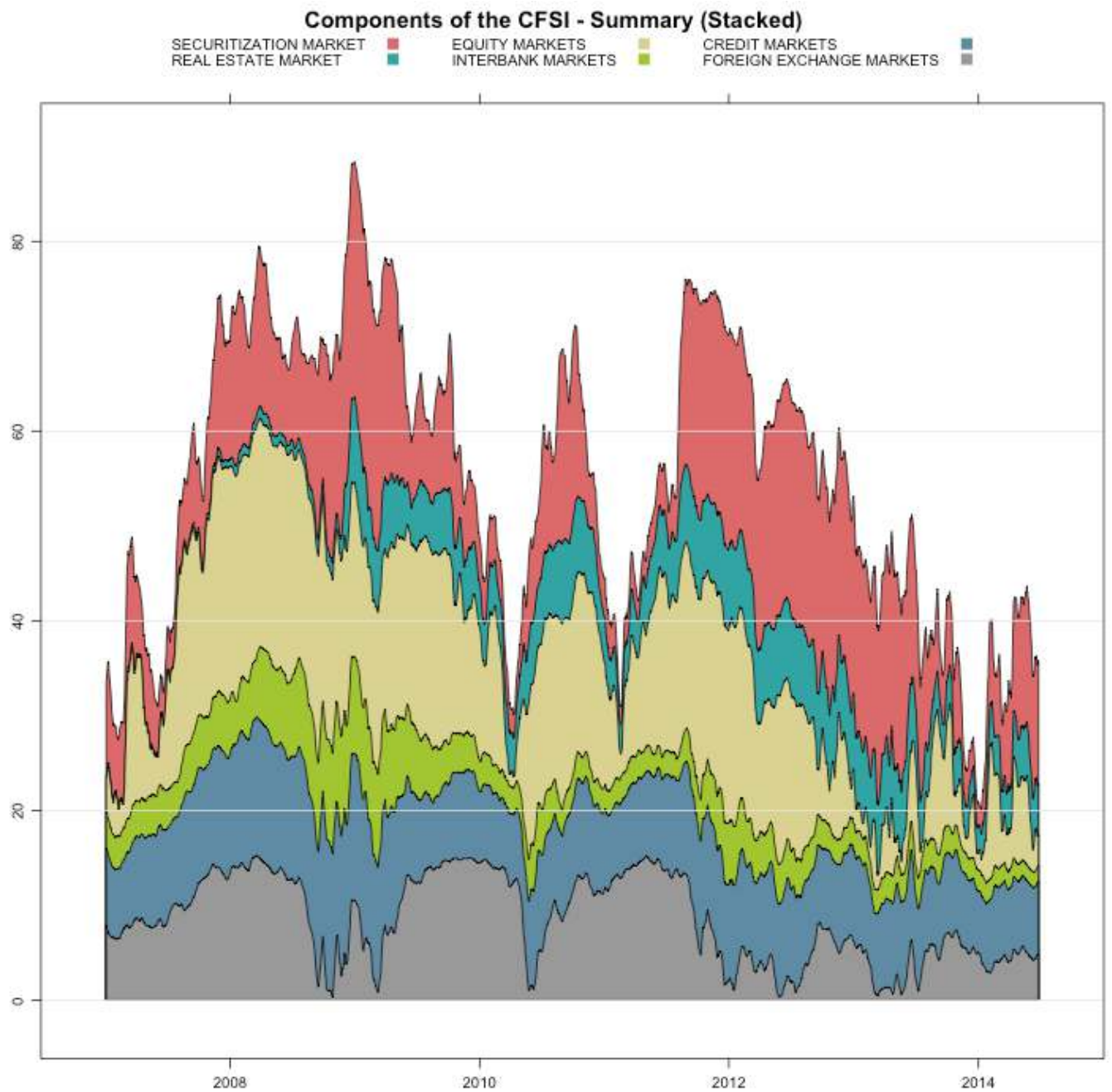
# Components of the CFSI - Summary



FOREIGN EXCHANGE MARKETS

CREDIT MARKETS

INTERBANK MARKETS

EQUITY MARKETS

REAL ESTATE MARKET

SECURITIZATION MARKET

Source: Federal Reserve Bank of Cleveland

```
stressLineChart(cs,"2007/")
```

## Components of the CFSI - Summary

FOREIGN EXCHANGE MARKETS
CREDIT MARKETS
INTERBANK MARKETS
EQUITY MARKETS
REAL ESTATE MARKET
SECURITIZATION MARKET

Source: Federal Reserve Bank of Cleveland

```
stressAreaChart(cs,"2007/")
```

## Components of the CFSI - Summary (Stacked)

SECURITIZATION MARKET ■  EQUITY MARKETS ■  CREDIT MARKETS ■
REAL ESTATE MARKET ■  INTERBANK MARKETS ■  FOREIGN EXCHANGE MARKETS ■

Source: Federal Reserve Bank of Cleveland

# Equity Markets

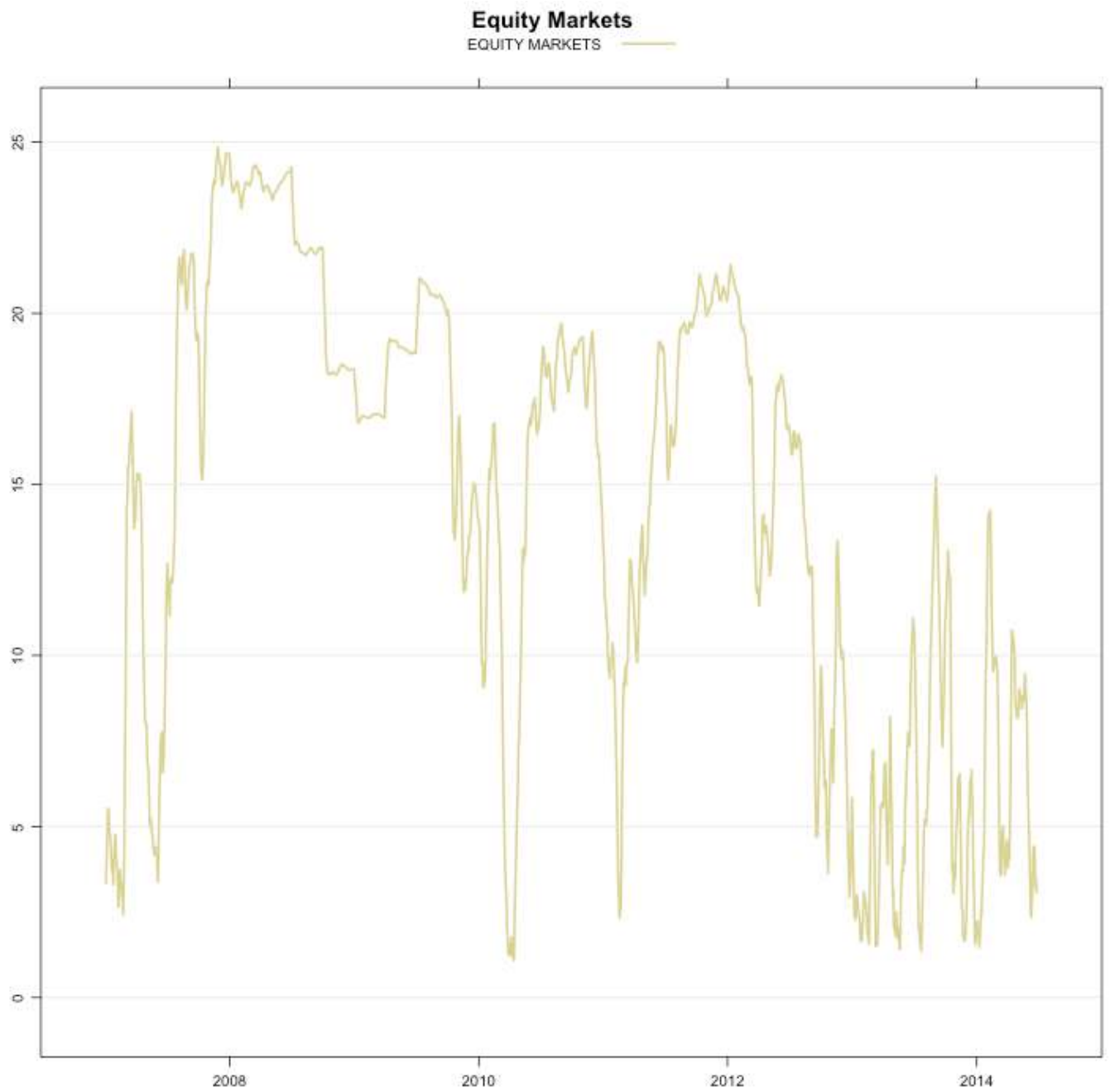```
cs <- getEquityMarkets(cs)
xyplot(cs)
```

**Equity Markets**
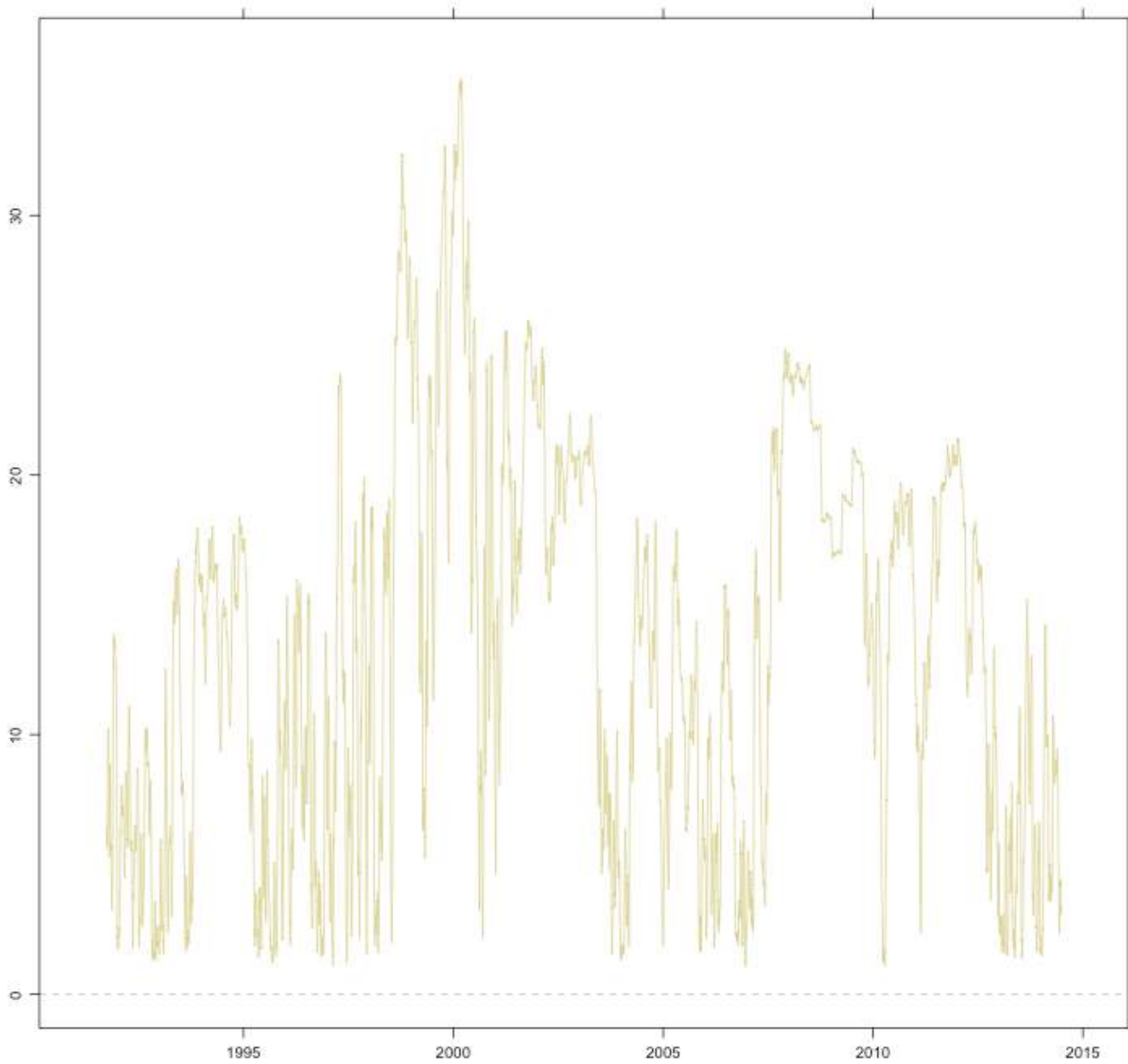
Source: Federal Reserve Bank of Cleveland

```
stressLineChart(cs,"2007/")
```
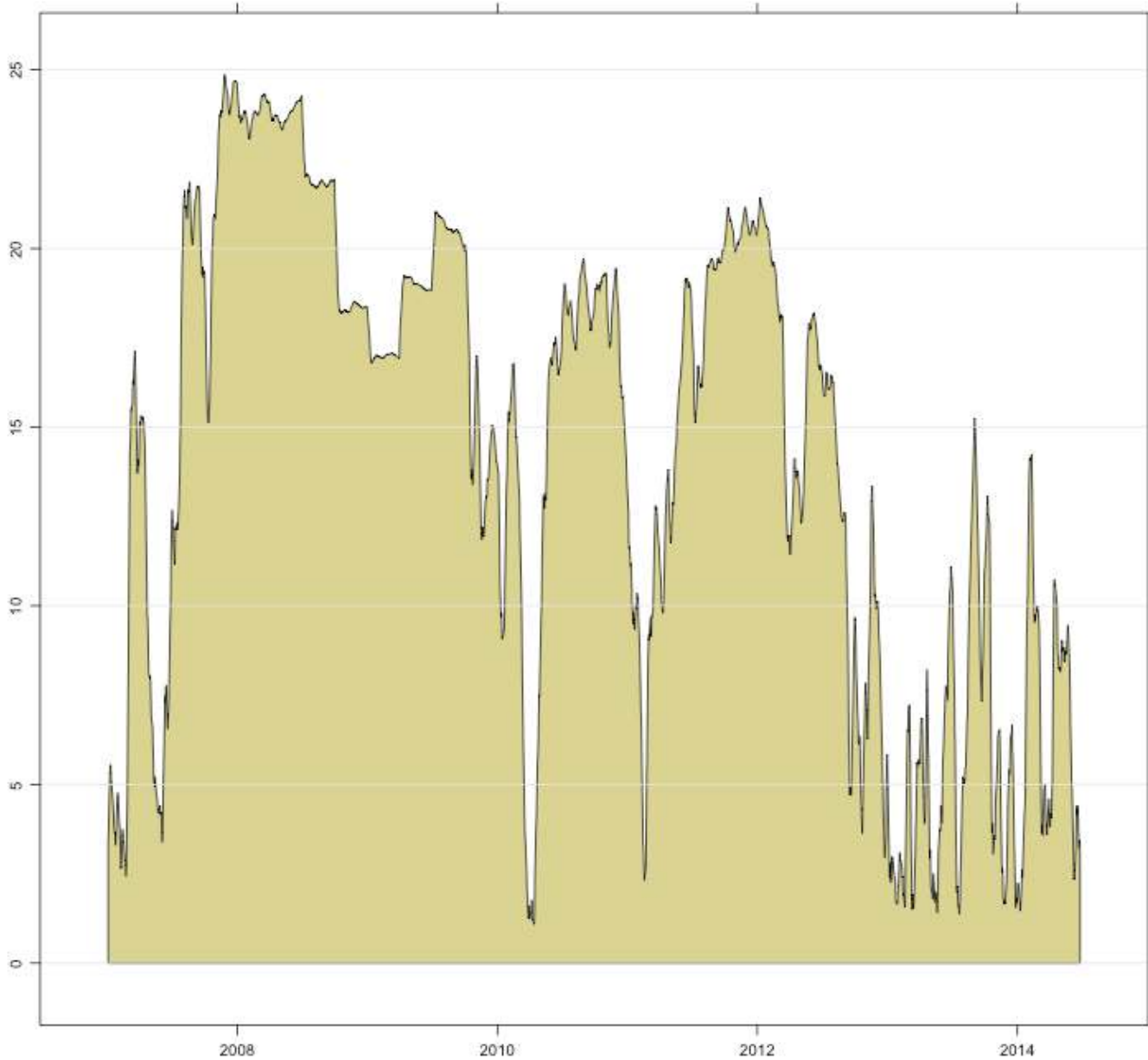
## Equity Markets



Source: Federal Reserve Bank of Cleveland
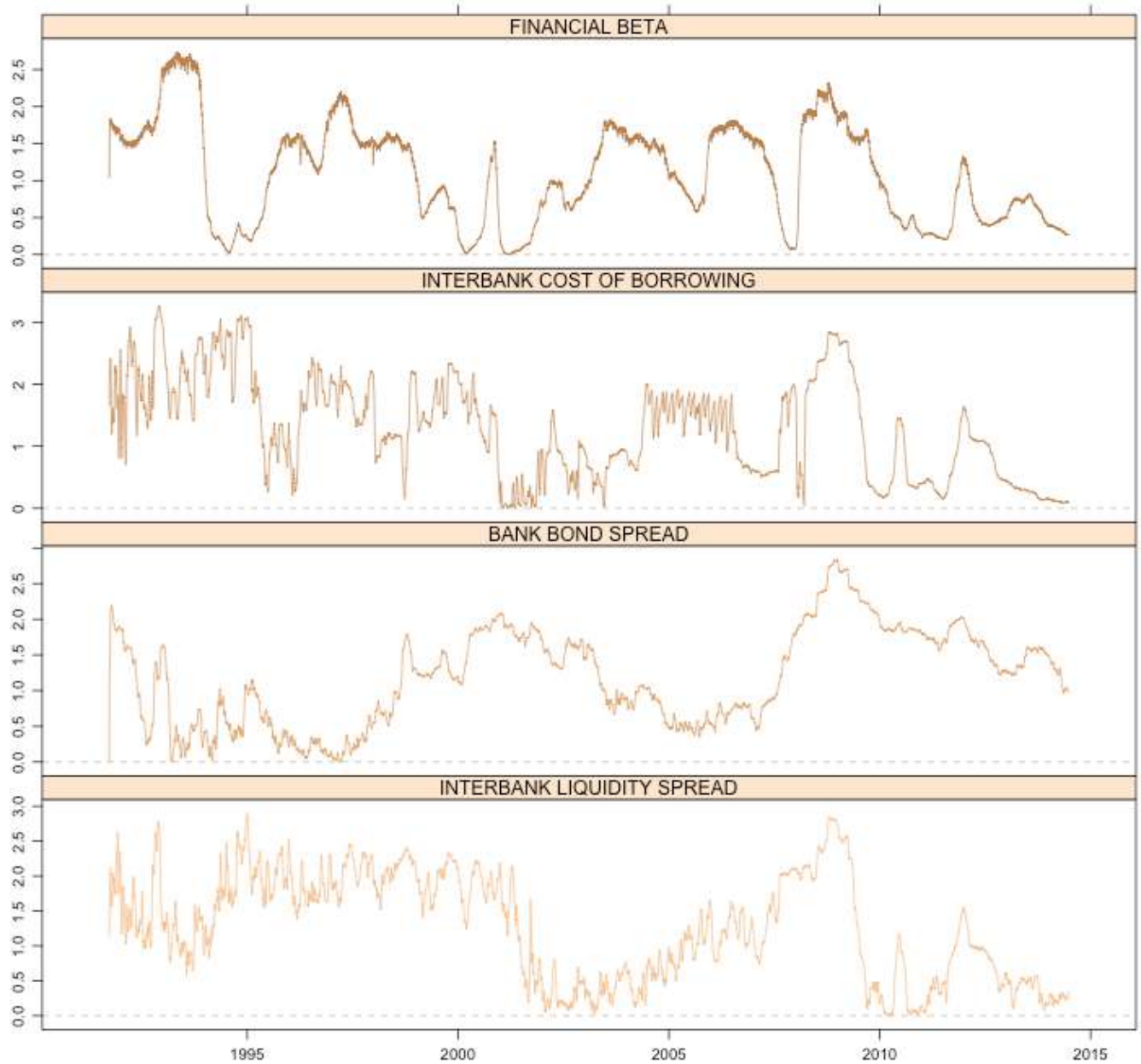
```
stressAreaChart(cs,"2007/")
```

## Equity Markets



EQUITY MARKETS ■

Source: Federal Reserve Bank of Cleveland

# Funding Markets

```
cs <- getFundingMarkets(cs)
xyplot(cs)
```
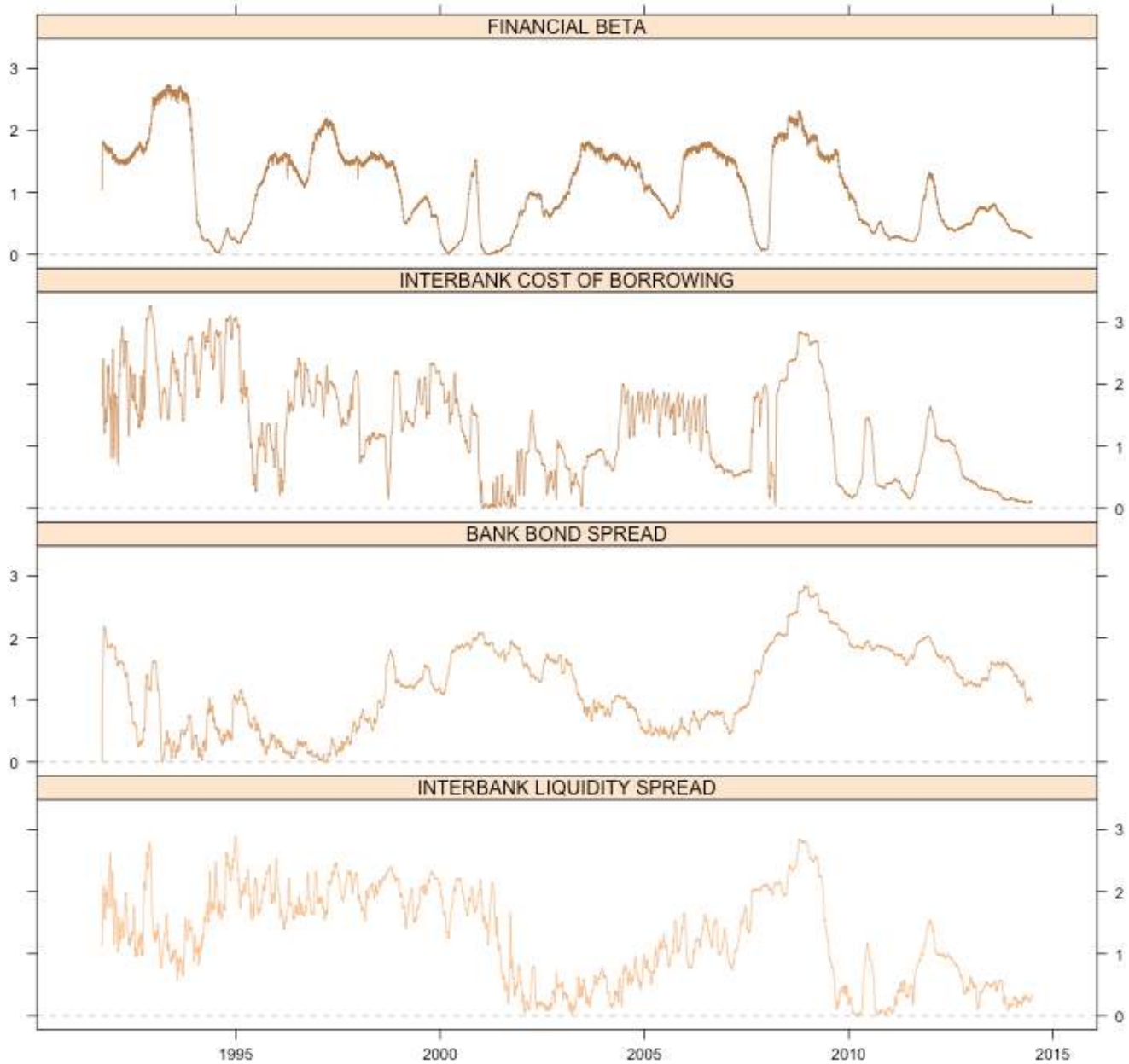
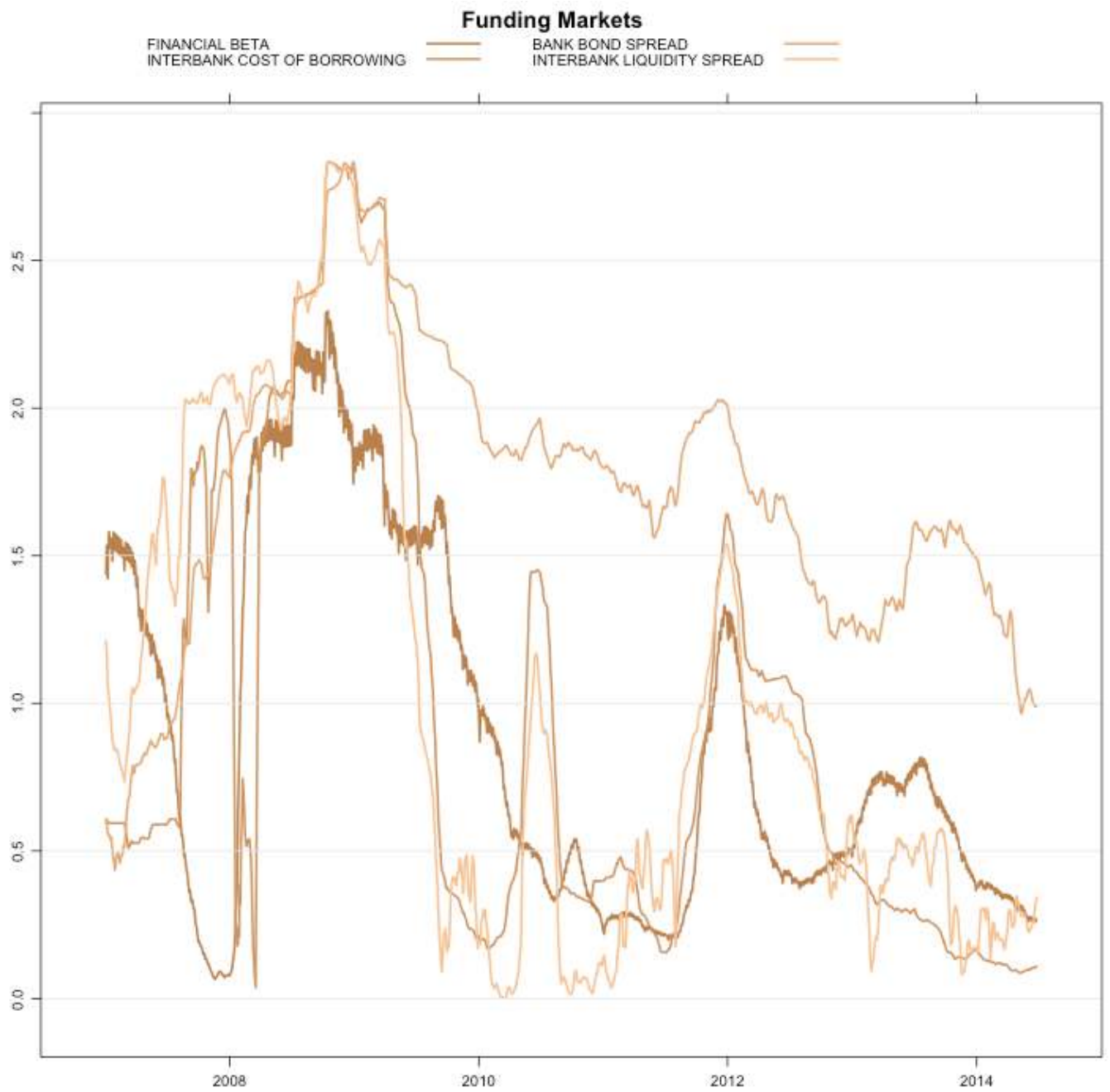## Funding Markets



Source: Federal Reserve Bank of Cleveland

```
xyplot(cs,scales=list(y="same"))
```
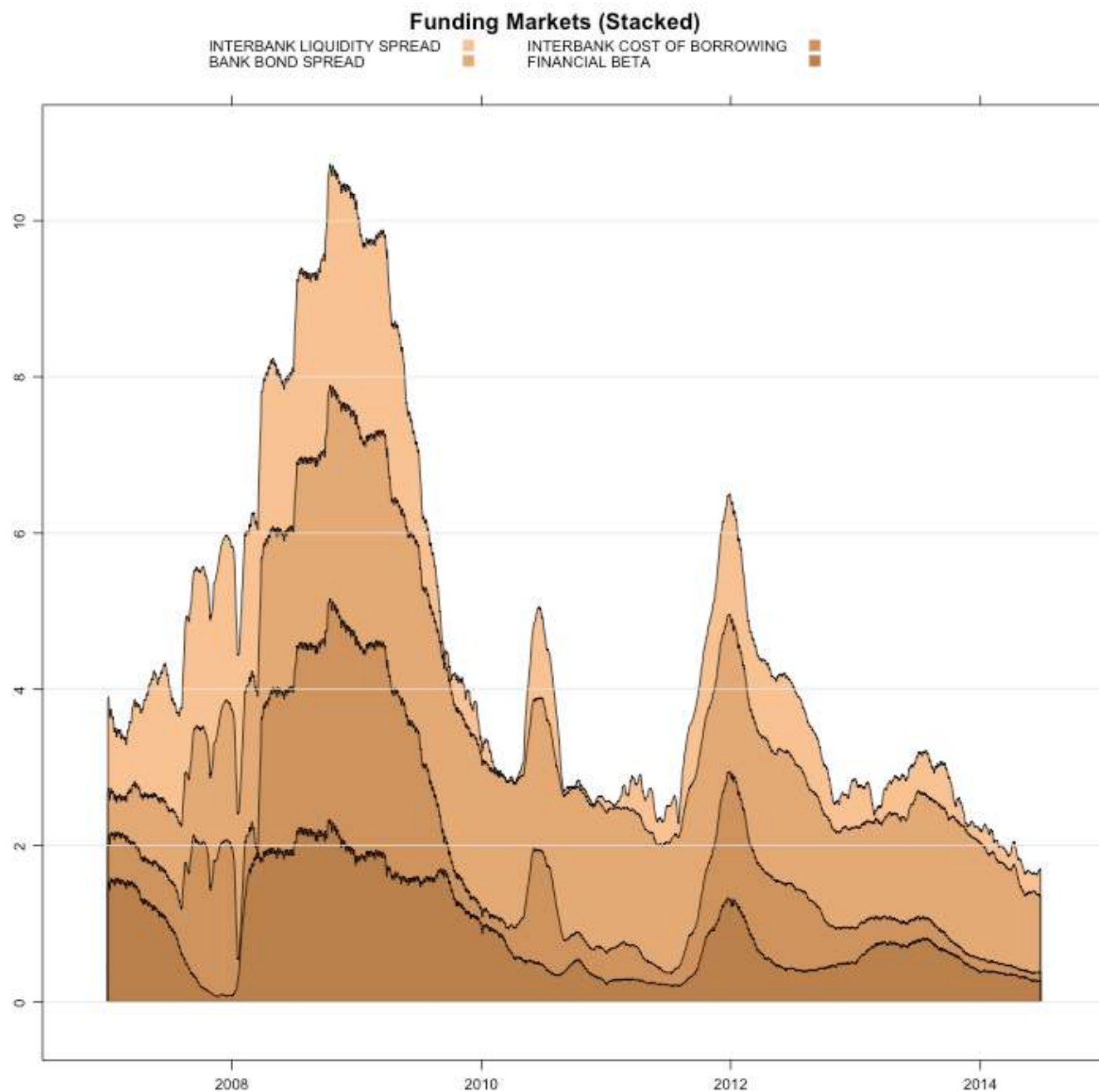
## Funding Markets



Source: Federal Reserve Bank of Cleveland

```
stressLineChart(cs,"2007/")
```

# Funding Markets

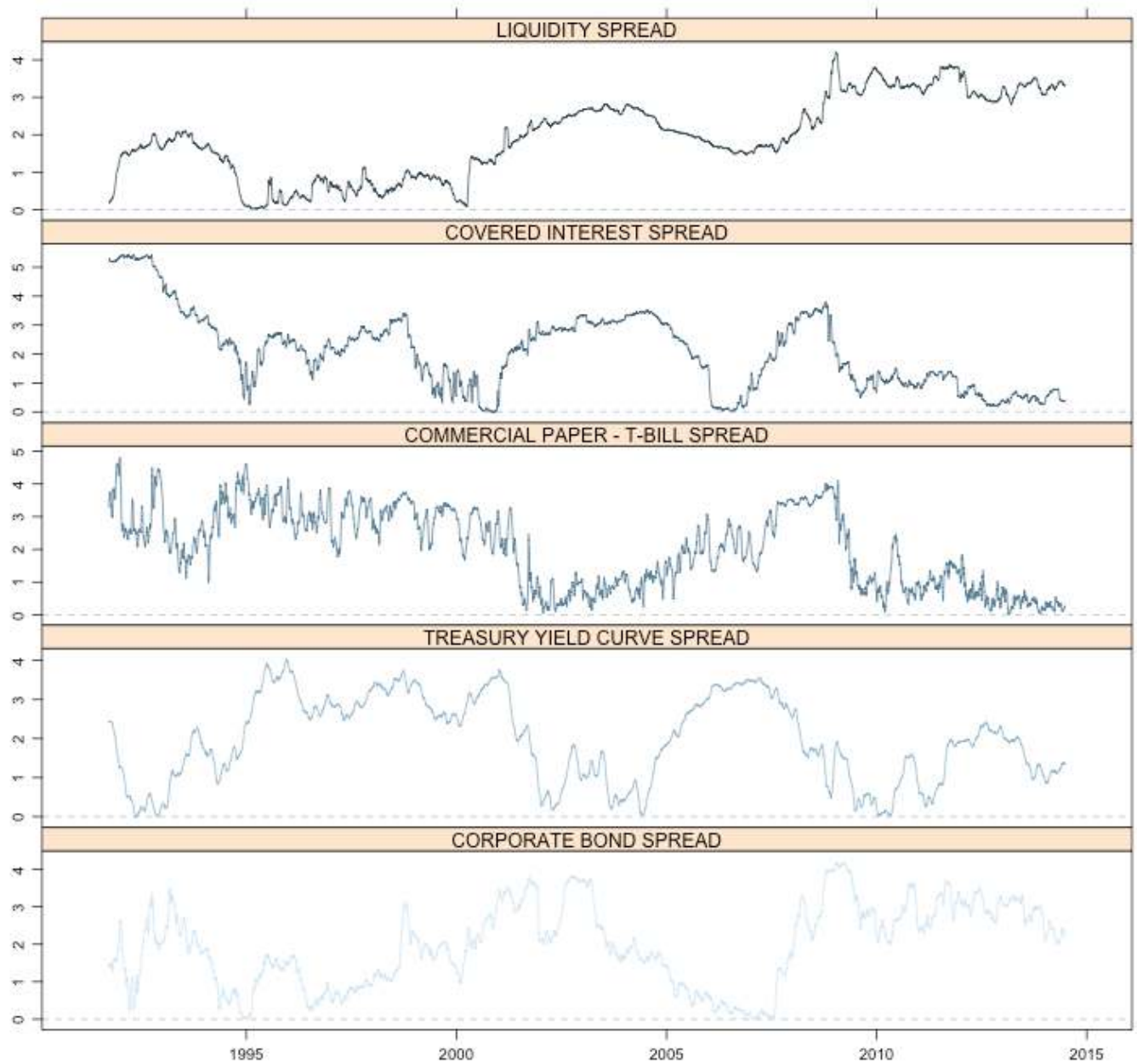Source: Federal Reserve Bank of Cleveland

```
stressAreaChart(cs,"2007/")
```

**Funding Markets (Stacked)**

INTERBANK LIQUIDITY SPREAD ▪    INTERBANK COST OF BORROWING ▪
BANK BOND SPREAD ▪    FINANCIAL BETA ▪



Source: Federal Reserve Bank of Cleveland

# Credit Markets

```
cs <- getCreditMarkets(cs)
xyplot(cs)
```
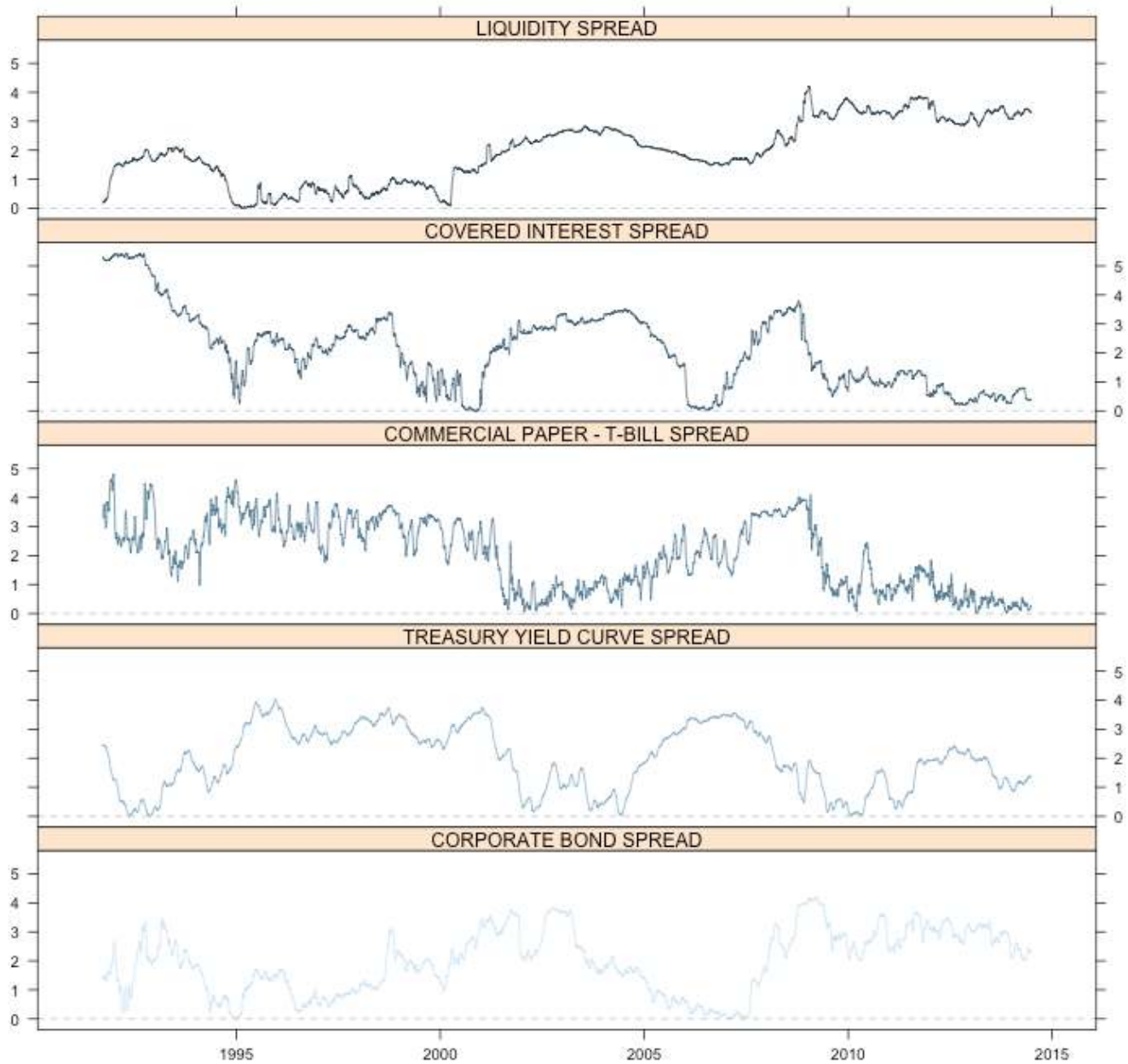
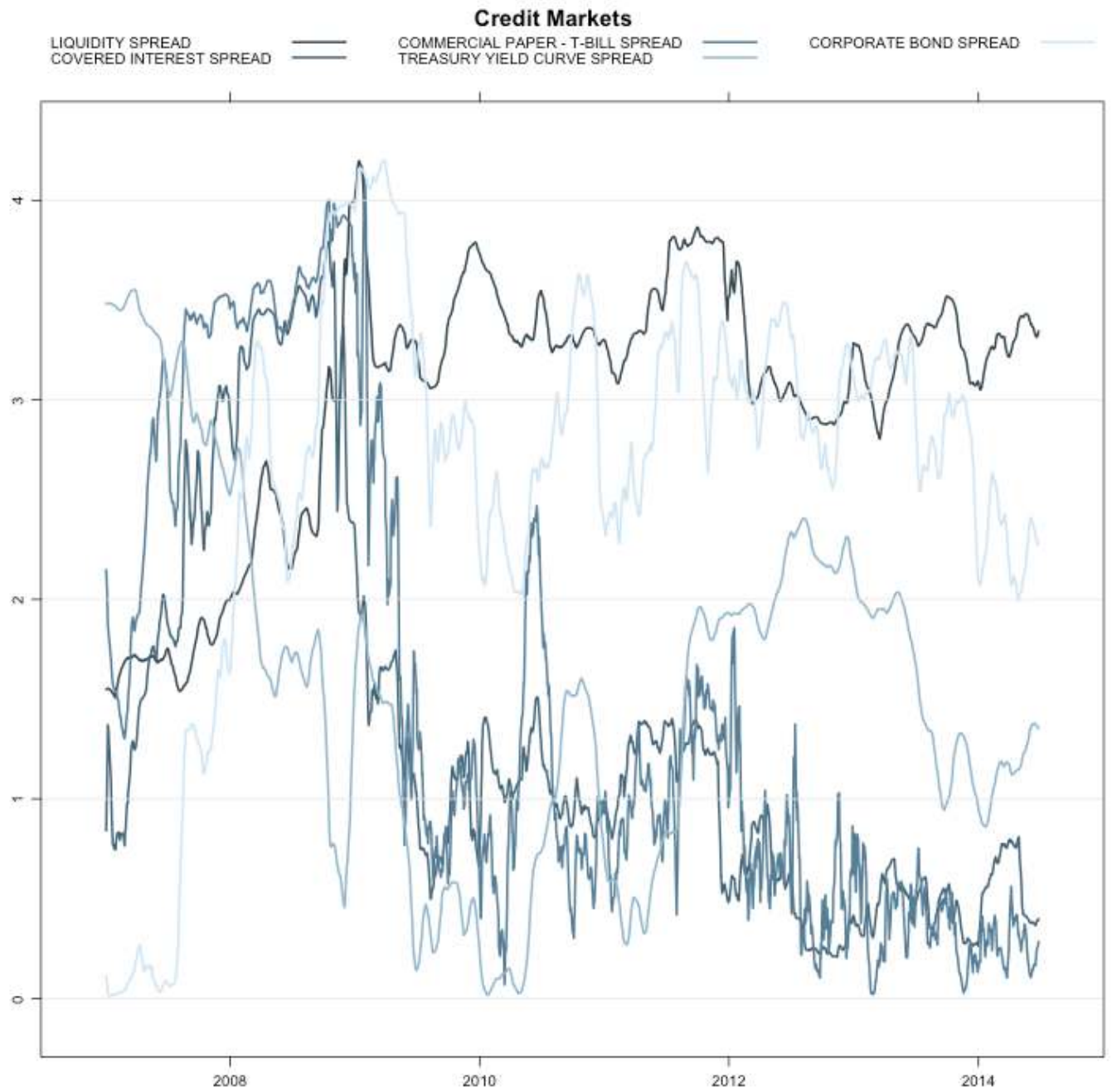**Credit Markets**

Source: Federal Reserve Bank of Cleveland

```
xyplot(cs,scales=list(y="same"))
```
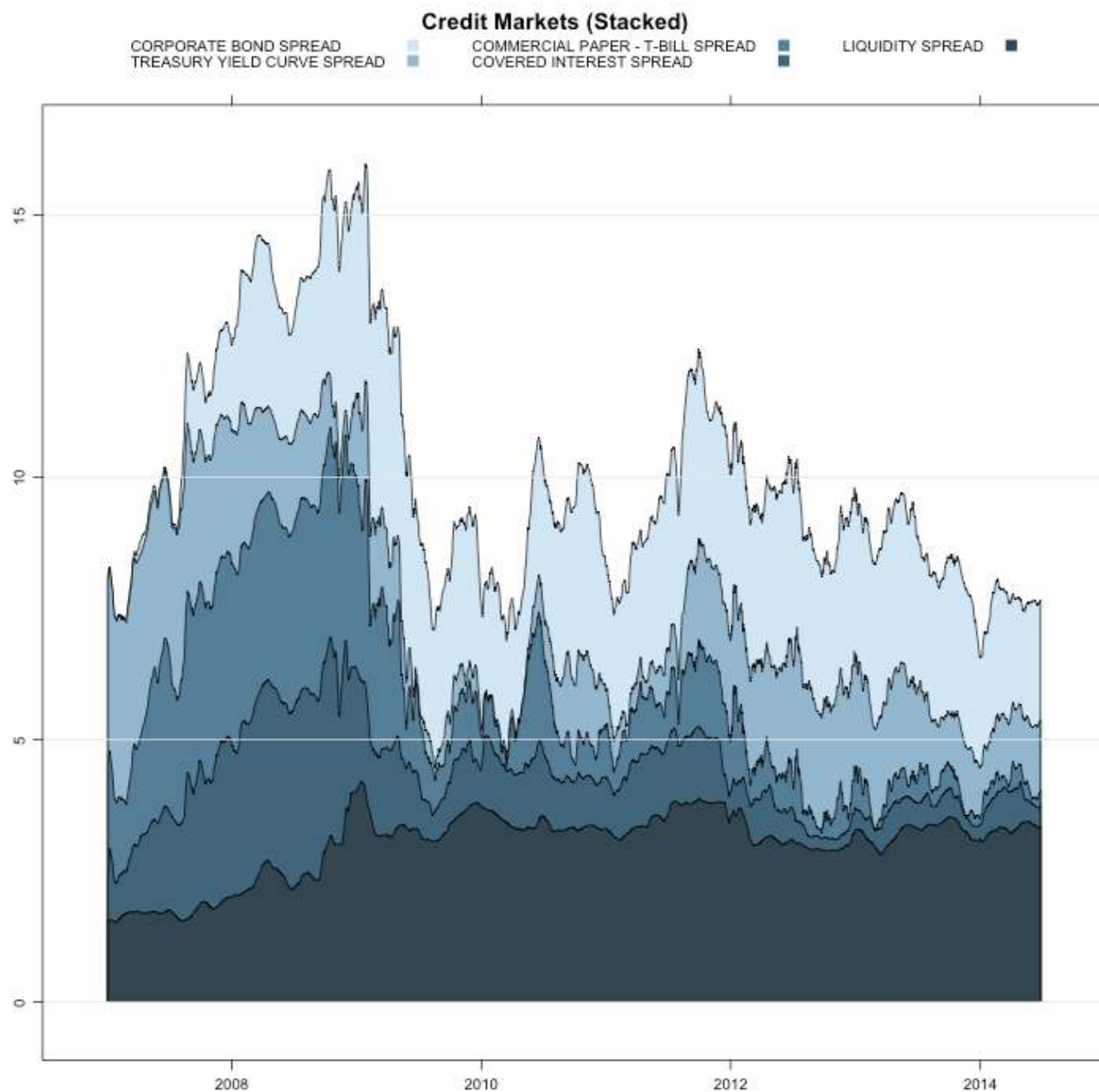
# Credit Markets



Source: Federal Reserve Bank of Cleveland

```
stressLineChart(cs,"2007/")
```

**Credit Markets**

LIQUIDITY SPREAD ——
COVERED INTEREST SPREAD ——
COMMERCIAL PAPER - T-BILL SPREAD ——
TREASURY YIELD CURVE SPREAD ——
CORPORATE BOND SPREAD ——

Source: Federal Reserve Bank of Cleveland

```
stressAreaChart(cs,"2007/")
```

**Credit Markets (Stacked)**

CORPORATE BOND SPREAD ■ COMMERCIAL PAPER - T-BILL SPREAD ■ LIQUIDITY SPREAD ■
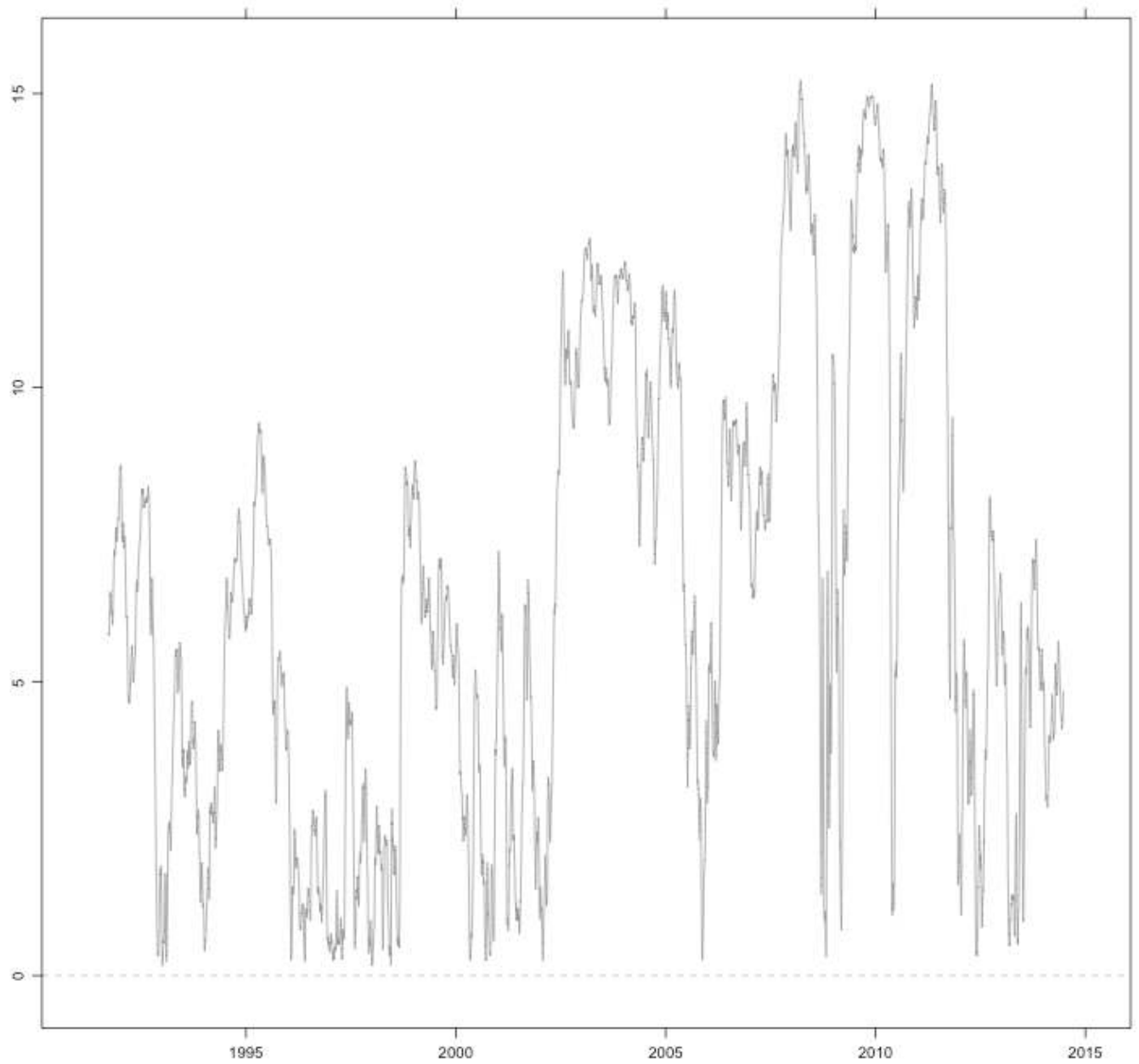TREASURY YIELD CURVE SPREAD ■ COVERED INTEREST SPREAD ■

Source: Federal Reserve Bank of Cleveland

# Foreign Exchange Markets

```
cs <- getForeignExchangeMarkets(cs)
xyplot(cs)
```
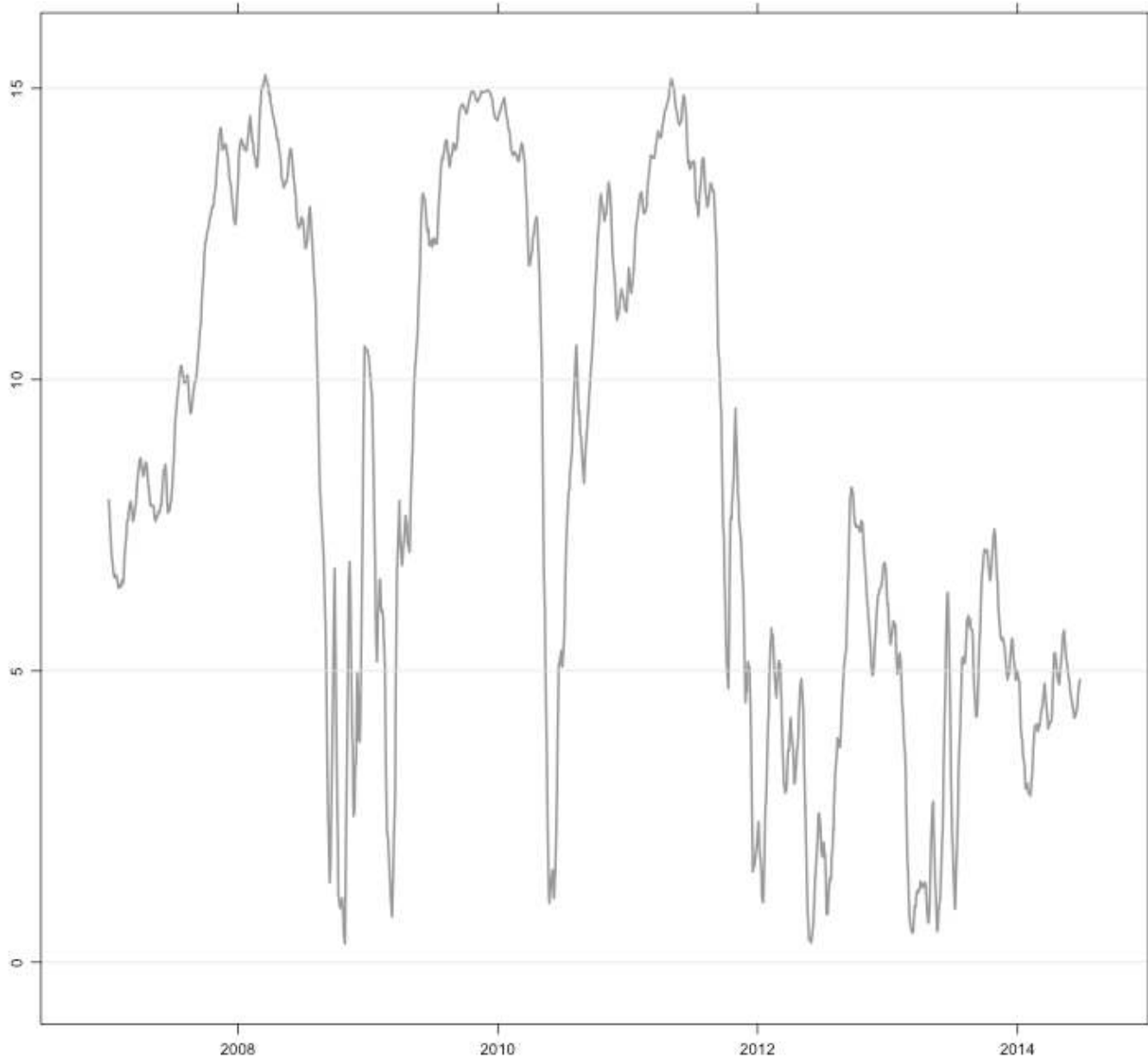
## Foreign Exchange Markets



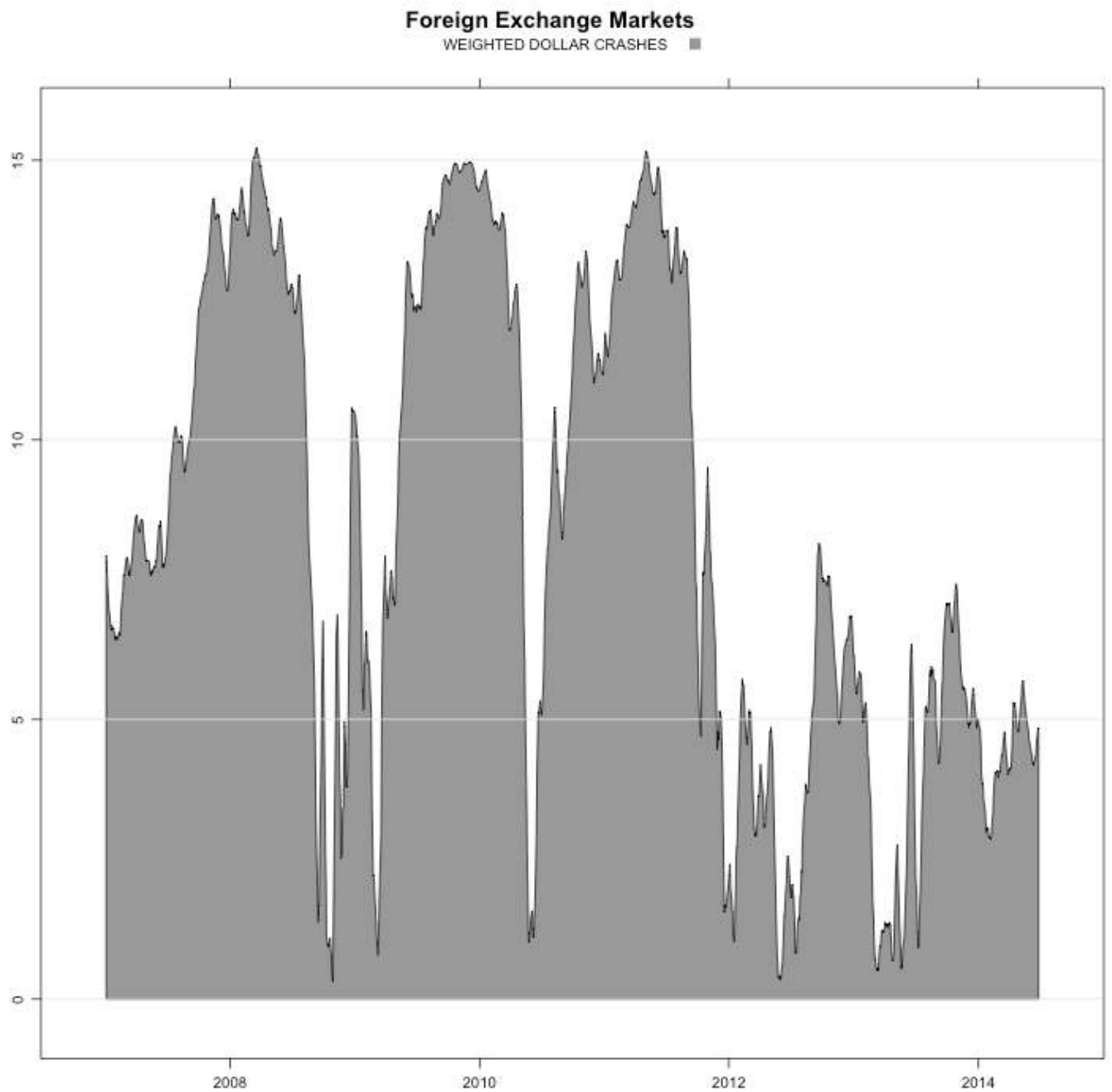Source: Federal Reserve Bank of Cleveland

```
stressLineChart(cs,"2007/")
```

# Foreign Exchange Markets
WEIGHTED DOLLAR CRASHES ————



Source: Federal Reserve Bank of Cleveland
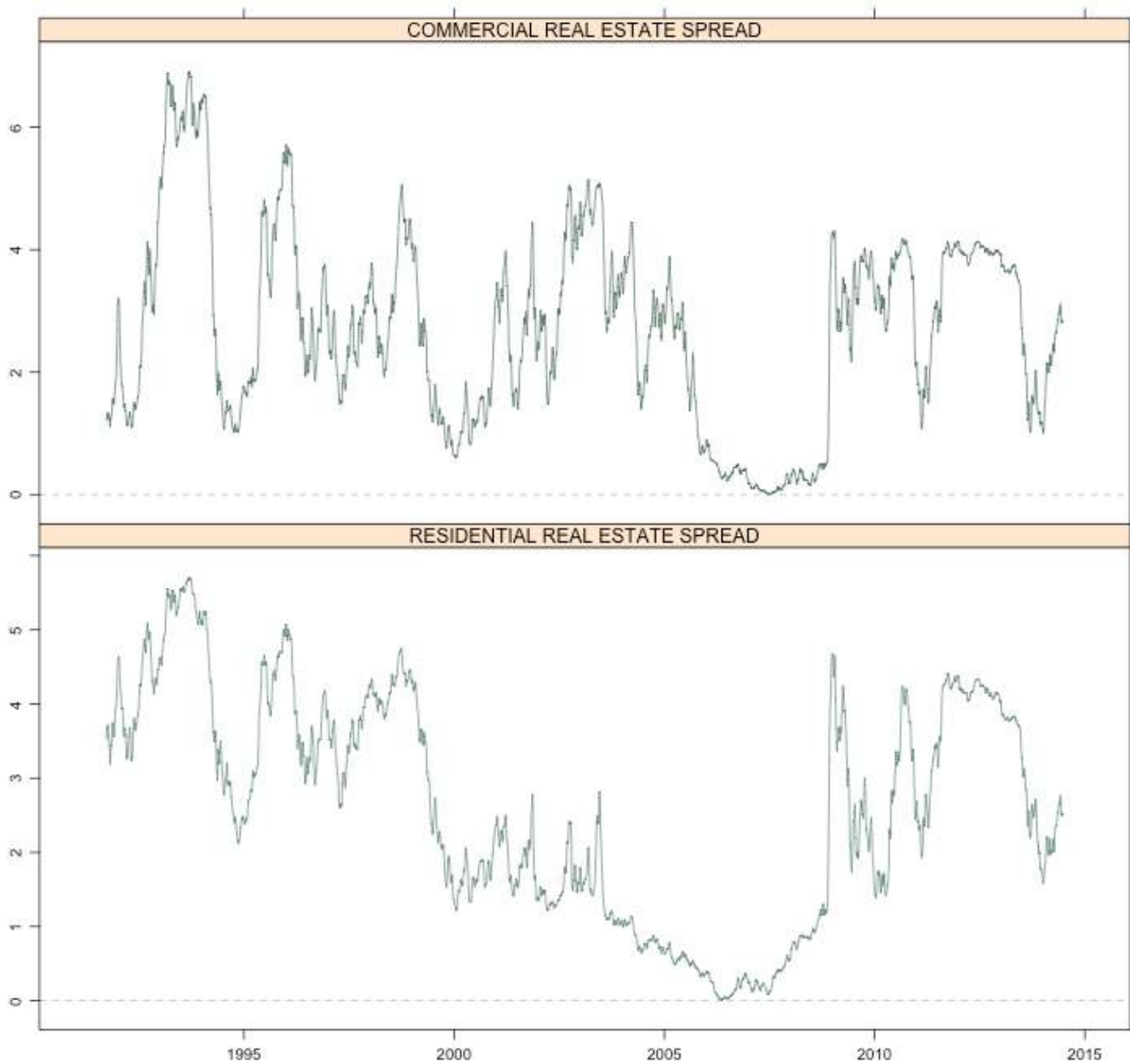
```
stressAreaChart(cs,"2007/")
```

**Foreign Exchange Markets**

WEIGHTED DOLLAR CRASHES ▪



Source: Federal Reserve Bank of Cleveland

# Real Estate Markets

```
cs <- getRealEstateMarkets(cs)
xyplot(cs)
```
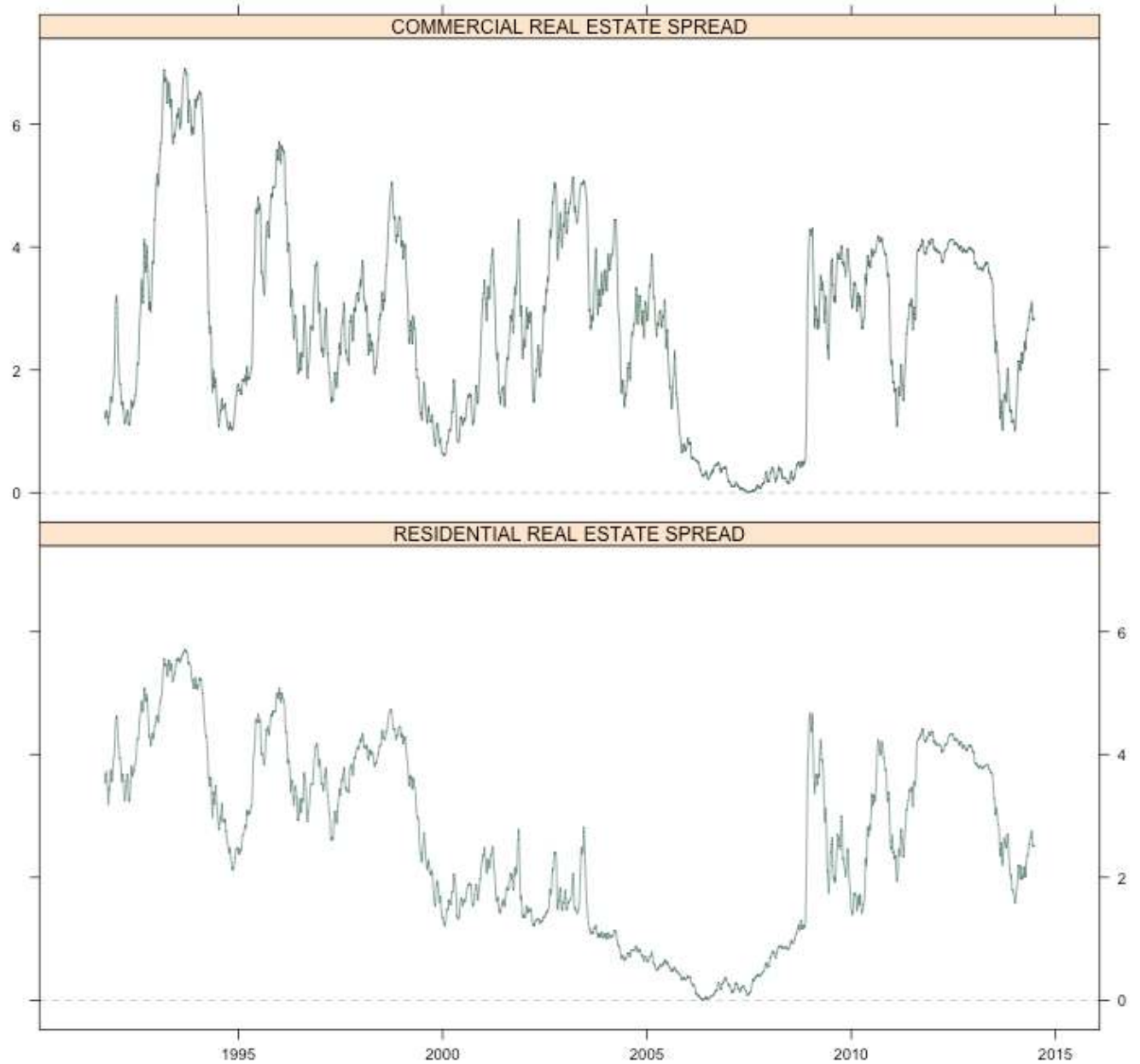
# Real Estate Markets



Source: Federal Reserve Bank of Cleveland

```
xyplot(cs,scales=list(y="same"))
```
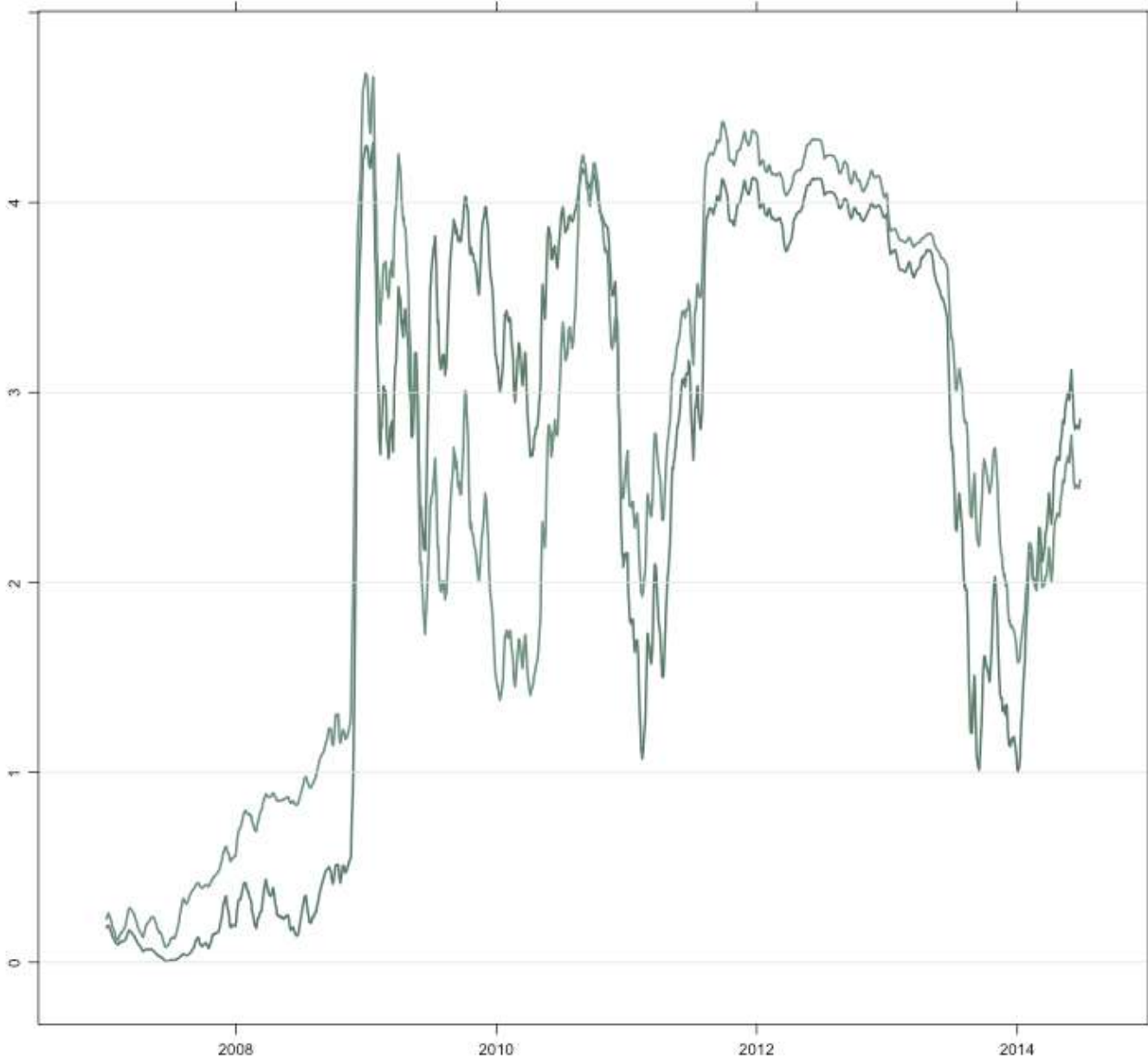
# Real Estate Markets



Source: Federal Reserve Bank of Cleveland
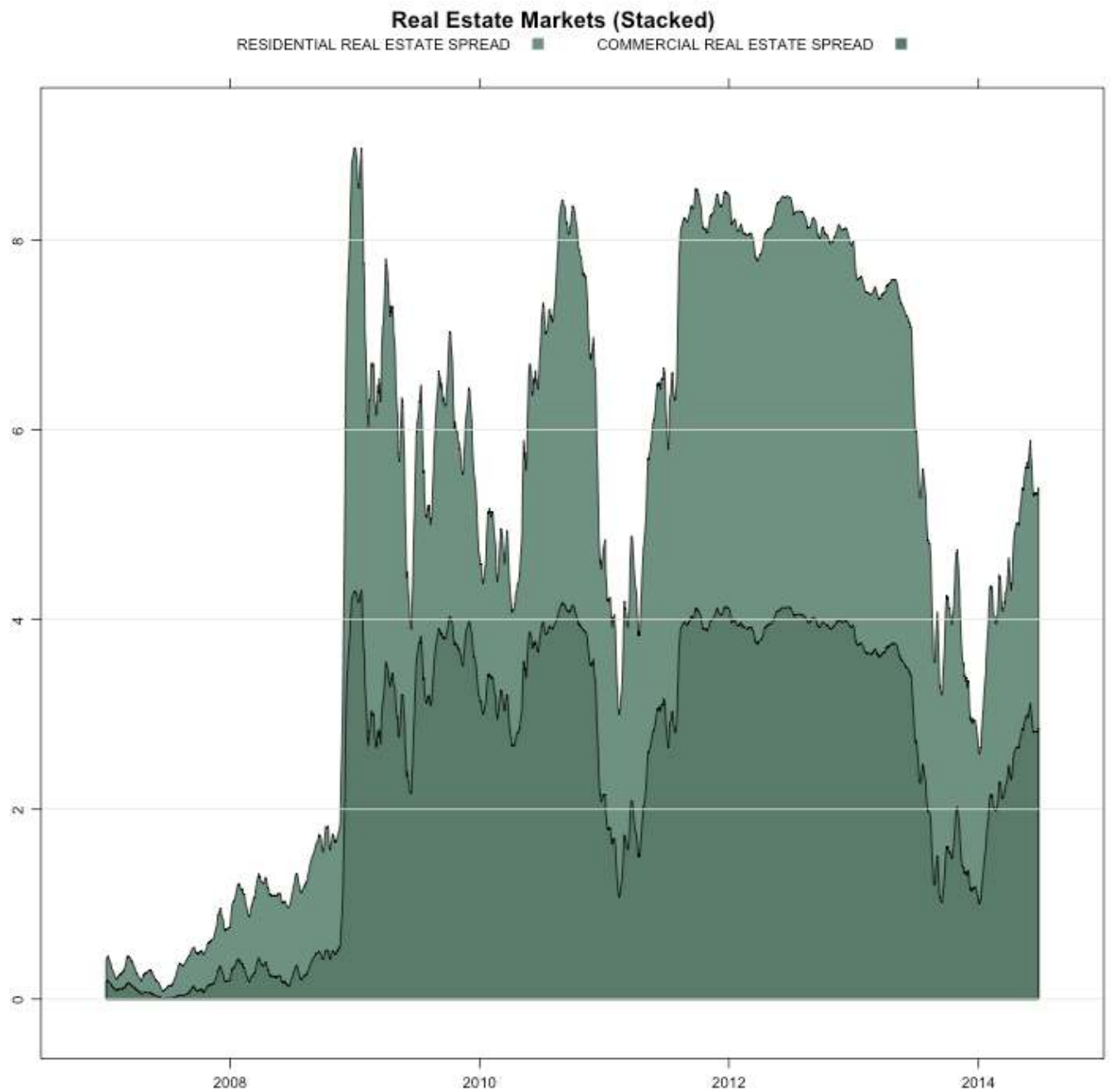
```
stressLineChart(cs,"2007/")
```

## Real Estate Markets

COMMERCIAL REAL ESTATE SPREAD ———  RESIDENTIAL REAL ESTATE SPREAD ———
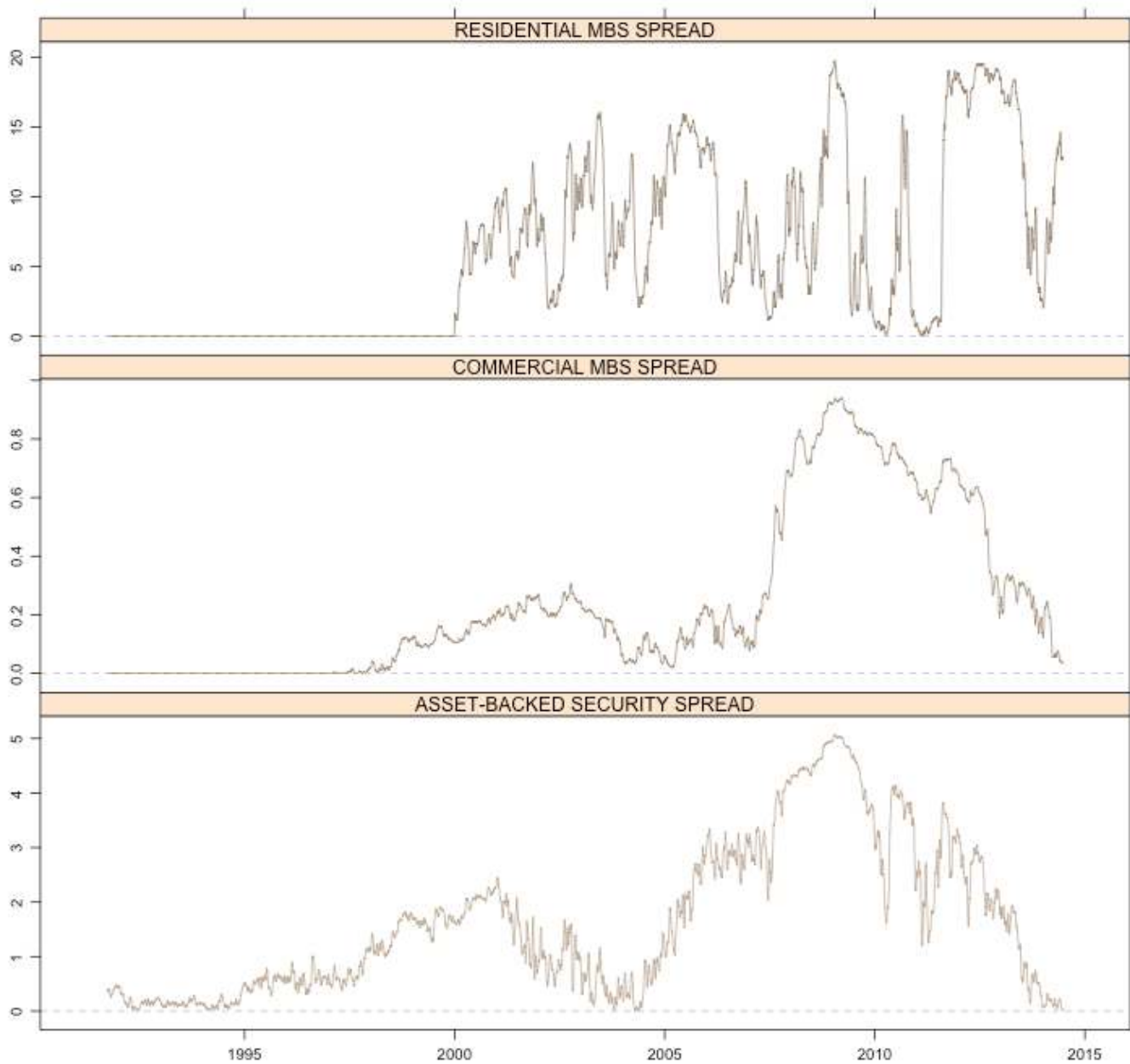


Source: Federal Reserve Bank of Cleveland

```
stressAreaChart(cs,"2007/")
```

**Real Estate Markets (Stacked)**

RESIDENTIAL REAL ESTATE SPREAD ▪        COMMERCIAL REAL ESTATE SPREAD ▪



Source: Federal Reserve Bank of Cleveland

# Securitization Markets

```
cs <- getSecuritizationMarkets(cs)
xyplot(cs)
```
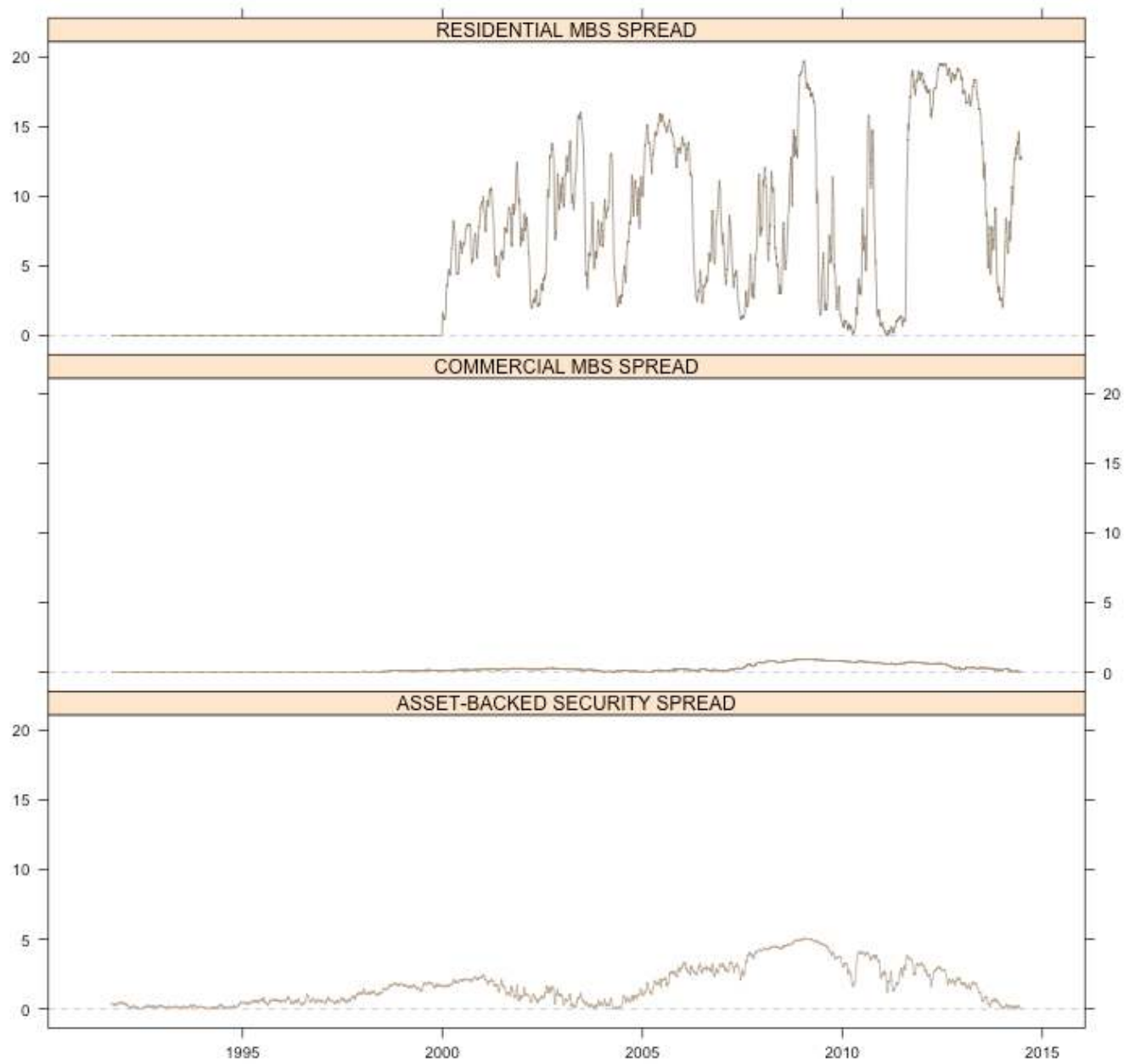
## Securitization Markets
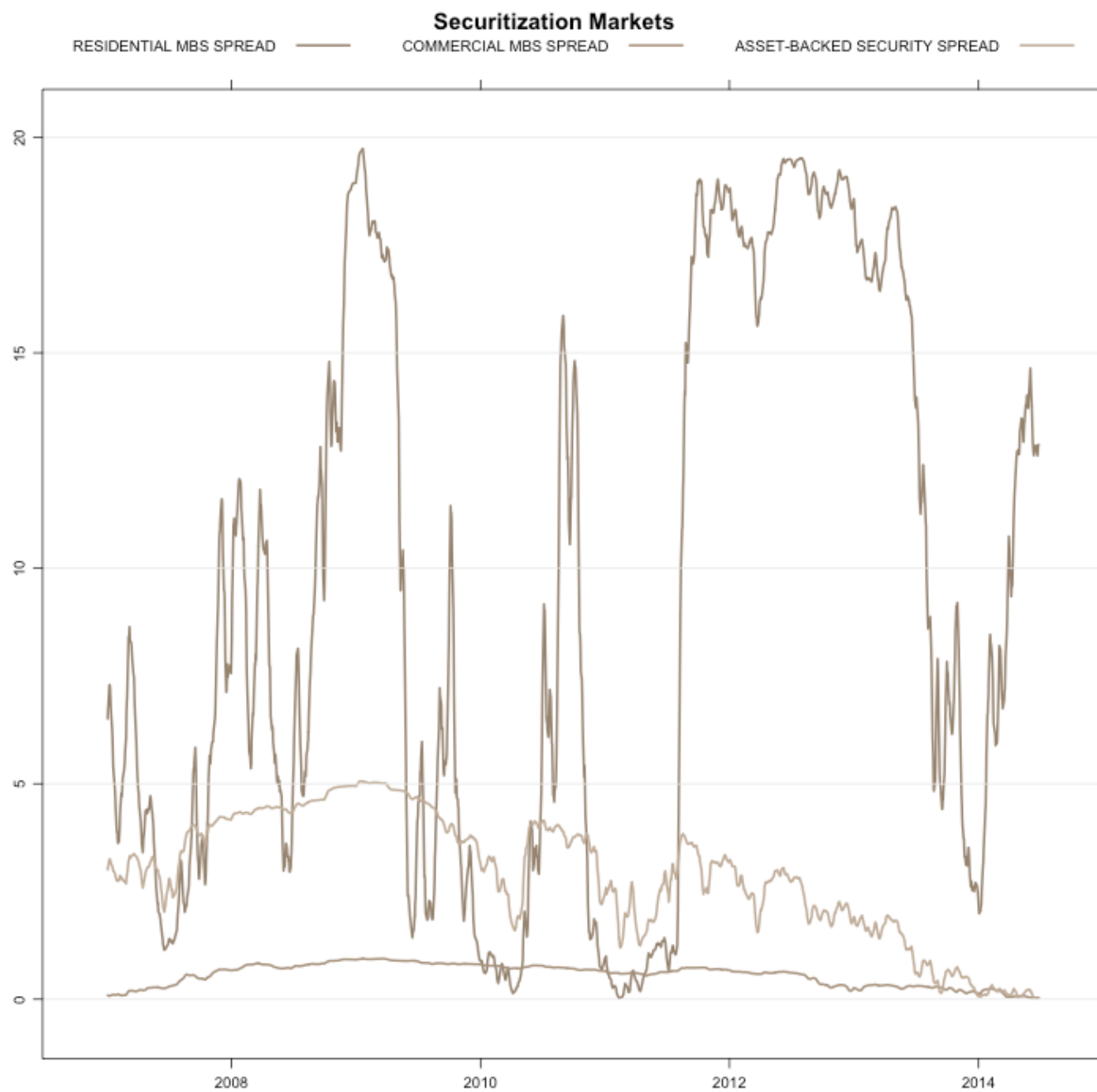


Source: Federal Reserve Bank of Cleveland

```
xyplot(cs,scales=list(y="same"))
```

# Securitization Markets



Source: Federal Reserve Bank of Cleveland

```
stressLineChart(cs,"2007/")
```

**Securitization Markets**

RESIDENTIAL MBS SPREAD ———  COMMERCIAL MBS SPREAD ———  ASSET-BACKED SECURITY SPREAD ———

Source: Federal Reserve Bank of Cleveland

```
stressAreaChart(cs,"2007/")
```

**Securitization Markets (Stacked)**

ASSET-BACKED SECURITY SPREAD ▪   COMMERCIAL MBS SPREAD ▪   RESIDENTIAL MBS SPREAD ▪

Source: Federal Reserve Bank of Cleveland
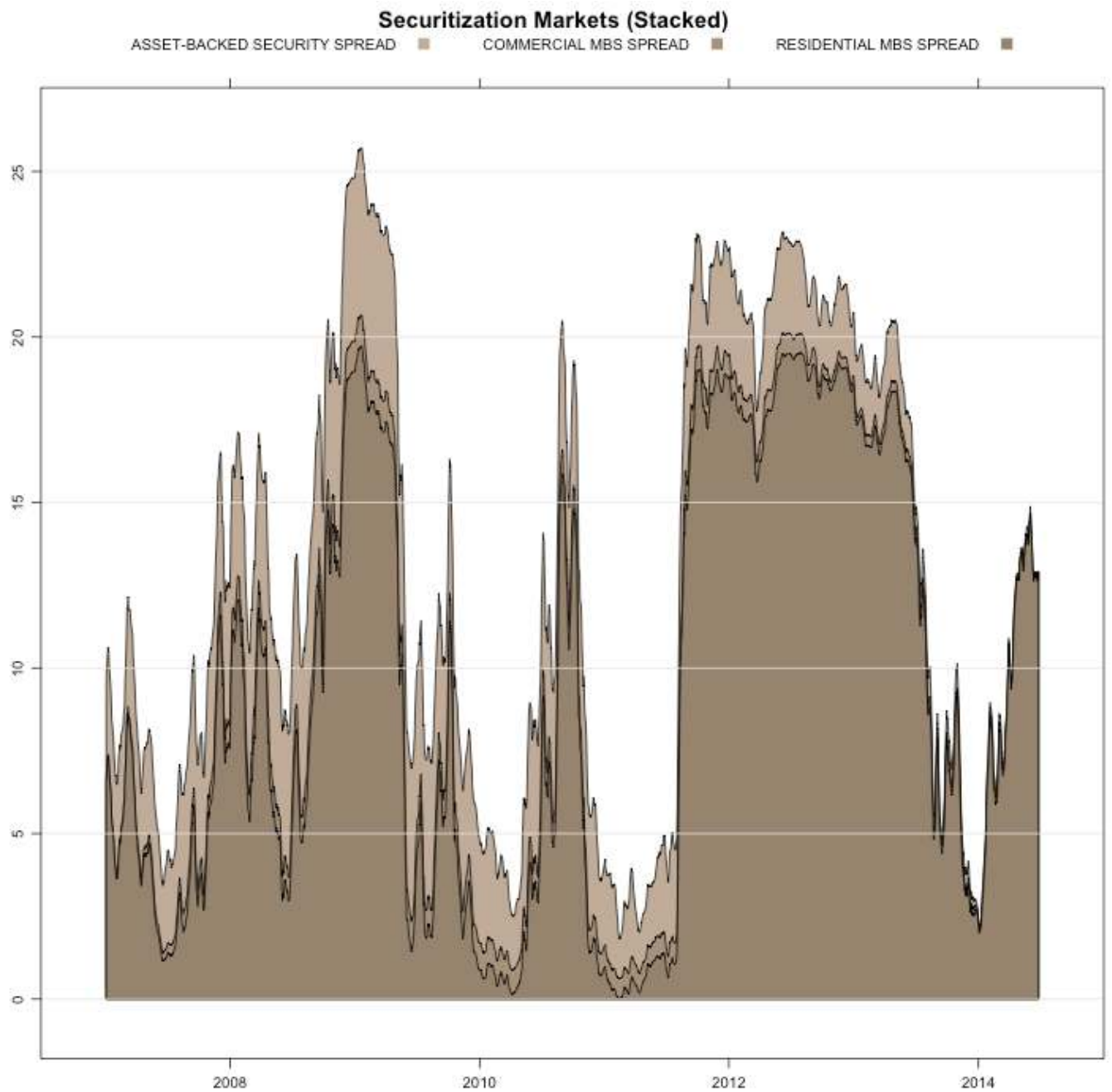
# References

- See Cleveland FRB for more details.