Using the USTYC package

The `ustyc` package provides a function to retrieve the US Treasury's yield curve data directly from the US Treasury Department web site's feed service. By default the function retrieves all of the data provided which encompasses 12 products (one month through 30 year maturity) with daily yields since January 1, 1990. The function converts the downloaded XML data into an R data frame with sample dates as row names and product yields as columns. The function returns a list of items as a `ustyc` class.

See the reference <u>web site</u> for details regarding the data.

In the simplest example one can retrieve all of the available data:

```
require(ustyc)
```

```
## Loading required package: ustyc
```

```
yc = getYieldCurve()
```

```
## Download and parse complete.  Converting to list...
## List conversion complete.  Converting to frame...
## Frame conversion complete.
```

```
summary(yc)
```

```
##                      rows                    month
year
##                     "6117"                    "All"
"All"
##                   updated
## "2014-06-11T20:17:58Z"
```

```
head(yc$df)
```

```
##            BC_1MONTH BC_3MONTH BC_6MONTH BC_1YEAR
BC_2YEAR BC_3YEAR
## 1990-01-02       NA      7.83      7.89     7.81
7.87     7.90
## 1990-01-03       NA      7.89      7.94     7.85
7.94     7.96
## 1990-01-04       NA      7.84      7.90     7.82
7.92     7.93
## 1990-01-05       NA      7.79      7.85     7.79
7.90     7.94
## 1990-01-08       NA      7.79      7.88     7.81
7.90     7.95
## 1990-01-09       NA      7.80      7.82     7.78
7.91     7.94
##            BC_5YEAR BC_7YEAR BC_10YEAR BC_20YEAR
BC_30YEAR
## 1990-01-02     7.87     7.98      7.94       NA
8.00
## 1990-01-03     7.92     8.04      7.99       NA
8.04
## 1990-01-04     7.91     8.02      7.98       NA
8.04
## 1990-01-05     7.92     8.03      7.99       NA
8.06
## 1990-01-08     7.92     8.05      8.02       NA
8.09
## 1990-01-09     7.92     8.05      8.02       NA
8.10
##            BC_30YEARDISPLAY
## 1990-01-02                0
## 1990-01-03                0
## 1990-01-04                0
## 1990-01-05                0
## 1990-01-08                0
## 1990-01-09                0
```

To convert this data frame into an `xts` object using the row names for the ordering date:

```
require(xts)
```

```
## Loading required package: xts
## Loading required package: zoo
##
## Attaching package: 'zoo'
##
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
```
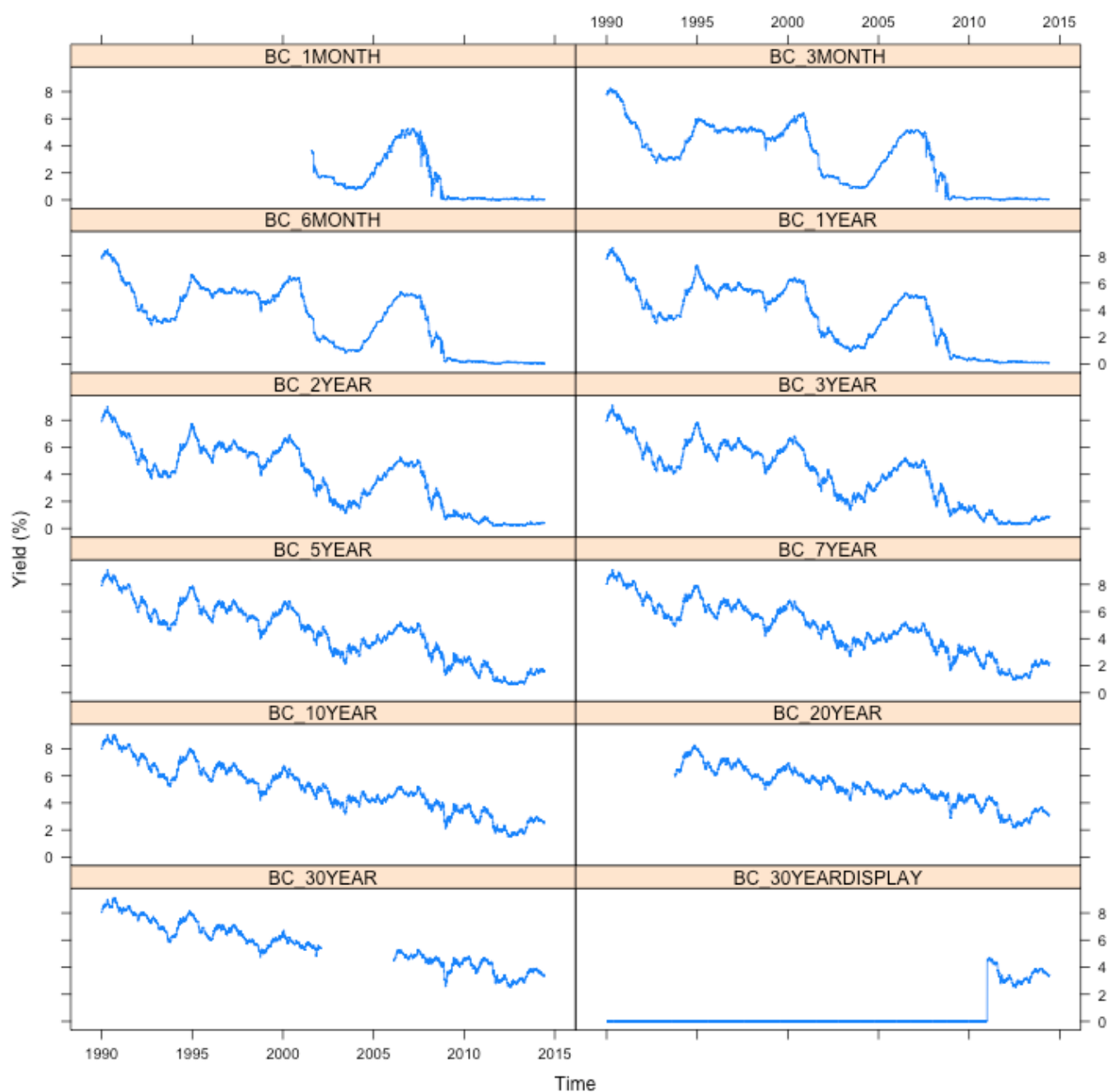
```
xt = xts(yc$df,order.by=as.Date(rownames(yc$df)))
```

To then plot this object as a time series with `lattice` the example might continue as follows:
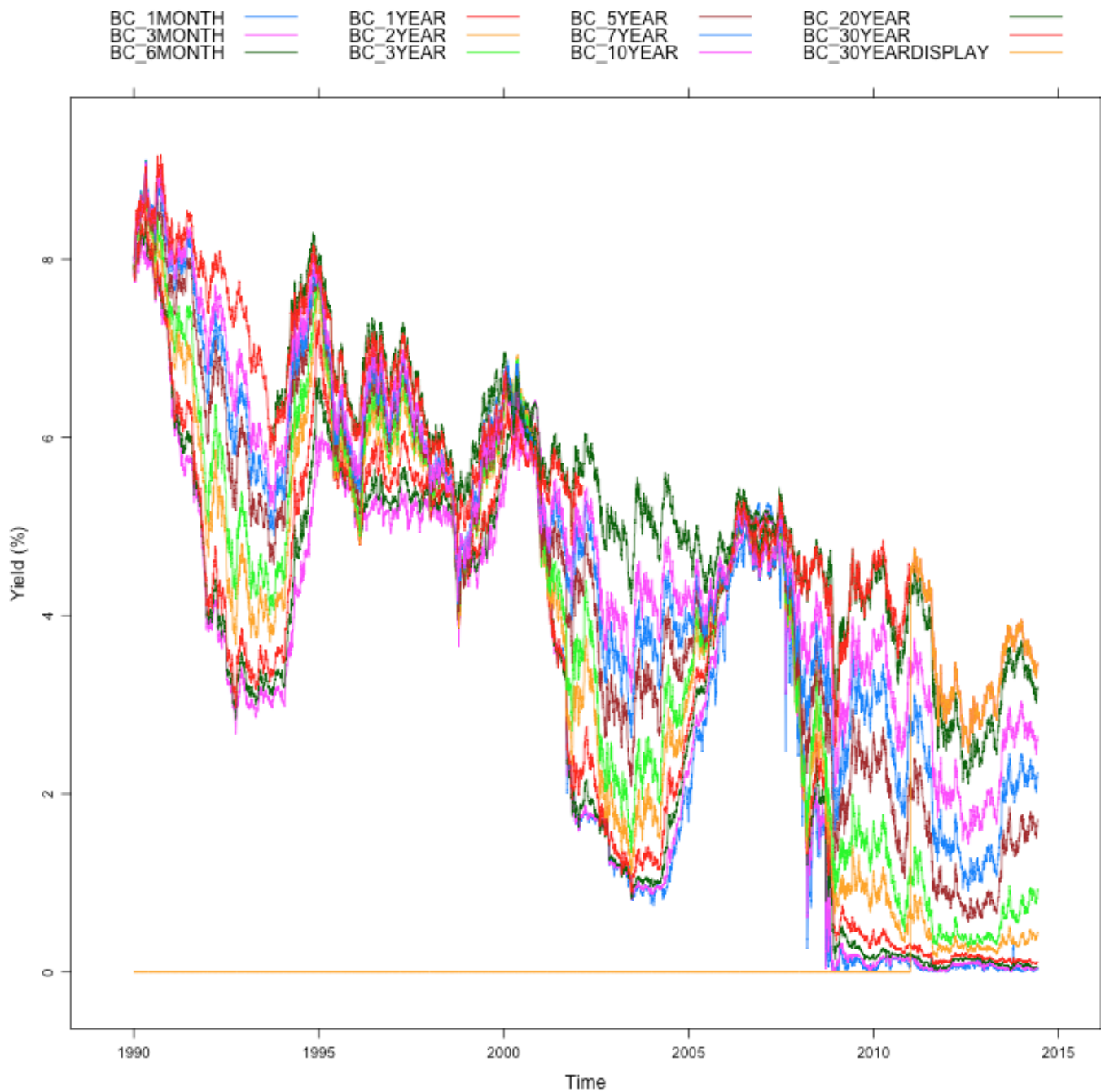
```
require(lattice)
```

```
## Loading required package: lattice
```

```
xyplot.ts(xt,scales=list(y=list(relation="same")),ylab="Yield
   (%)")
```

```
xyplot.ts(xt,superpose=TRUE,auto.key=list(columns=4),ylab="Yield
  (%)")
```


To fetch from the service only a particular year's yield curve for a faster response, try

```
require(ustyc)
yc2012 = getYieldCurve(year=2012)
```

```
## Download and parse complete.  Converting to list...
## List conversion complete.  Converting to frame...
## Frame conversion complete.
```

```
summary(yc2012)
```

```
##                      rows                      month
year
##                      "250"                      "All"
"2012"
##              updated
## "2014-06-11T20:14:48Z"
```