



could not covert index to appropriate type while attempting to plot weekly ts object in dygraphs

I'm trying to create a Holt-Winters forecast from a weekly time series, then plot the original series and forecast using dygraphs. I have 144 weeks of friday week-ending data. For my purpose, I'm ignoring that some years have 53 weeks. The structure of the data can be simulated by:

```
## create data similar to what I have

week_date <- seq.Date(from = as.Date("2012/05/11"),
                      by = "week",
                      length.out = 144)

set.seed(1)
var1 <- diffinv(rnorm(143))
df <- data.frame(cbind(week_date, var1))

## convert to ts object then
## create Holt Winters forecast

dfts <- ts(df[,2],freq=52, start=c(2012,19))

hw <- HoltWinters(dfts)
p <- predict(hw, 4)
all <- cbind(dfts, p)

## create plots

dygraph(all, "time series dygraph") %>%
  dySeries("var1", label = "Actual") %>%
  dySeries(c("p.lwr", "p.fit", "p.upr"), label = "Predicted")
```

This produces the following error:

```
Error in as.xts.ts(data) : could not convert index to appropriate type
```

I tried the solution proposed [here](#), but am getting the same error:

```
> all <- cbind(dfts = as.xts(dfts), p = as.xts(p))
Error in as.xts.ts(dfts) : could not convert index to appropriate type
```

Any solutions or workarounds are appreciated.

[r](#) [xts](#) [dygraphs](#)

asked Mar 25 '15 at 16:57

[derekn](#)

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1 Answer

There are a few things going on here. The root of the issue is that the `data` parameter of `dygraph` requires "Time series data (must be an xts object or an object which is convertible to xts)" (see `?dygraph`).

As you've discovered, converting `dfts` to an xts object fails:

```
> library(xts)
> dfts <- as.xts(dfts)
Error in as.xts.ts(dfts) : could not convert index to appropriate type
```

If you try to create the xts object directly:

```
> dfts <- xts(dfts)
Error in xts(dfts) : order.by requires an appropriate time-based object
```

This is because, by default `xts` uses `index(x)` for the `order.by` parameter. From `?xts`:

```
order.by    a corresponding vector of unique times/dates -
             must be of a known time-based class
...
Currently acceptable classes include: 'Date', 'POSIXct', 'timeDate',
as well as 'yearmon' and 'yearqtr' where the index values remain unique.
```

And if you look at the index on `dfts`:

```
> str(index(dfts))
 num [1:148] 2012 2012 2012 2012 2012 ...
> head(index(dfts))
[1] 2012.346 2012.365 2012.385 2012.404 2012.423 2012.442
```

The index is numeric, while `xts` requires some type of date object, so you'll need to convert it.

First, I'd create the `all` object by converting each to a `zoo` object and then merging:

```
> library(zoo)
> # You'll need prediction.interval=TRUE to get the bounds:
> p <- predict(hw, 4, prediction.interval=TRUE)
> all <- merge(actual=as.zoo(dfts), predicted=as.zoo(p))
> head(all)
```

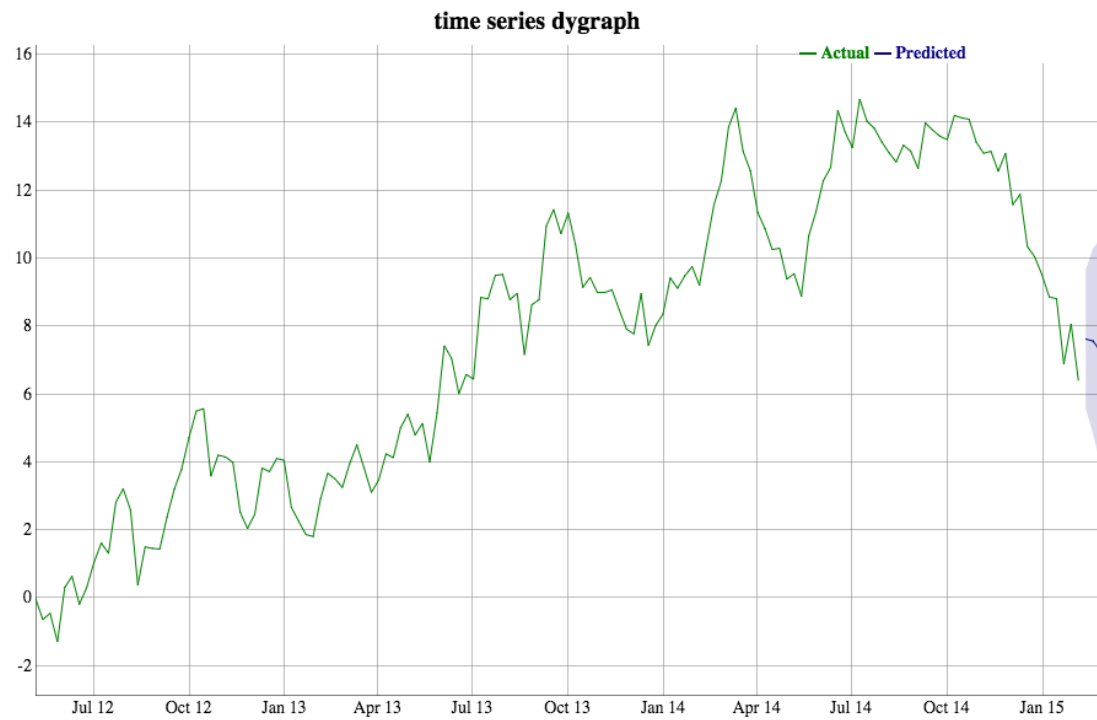
	actual	fit	upr	lwr
2012(19)	0.0000000	NA	NA	NA
2012(20)	-0.6264538	NA	NA	NA
2012(21)	-0.4428105	NA	NA	NA
2012(22)	-1.2784391	NA	NA	NA
2012(23)	0.3168417	NA	NA	NA
2012(24)	0.6463495	NA	NA	NA

Then, you can cast it to an `xts` object by converting the decimal index to a date. There are a few ways to do this, but the easiest is probably to use the `date_decimal` function from the `lubridate` package:

```
> library(lubridate)
> all.xts <- xts(all, date_decimal(index(all)))
```

Now, tweaking the parameters in the `dygraph` function:

```
> dygraph(all.xts, "time series dygraph") %>%
  dySeries("actual", label = "Actual") %>%
  dySeries(c("lwr", "fit", "upr"), label = "Predicted")
```



edited Mar 25 '15 at 18:37

answered Mar 25 '15 at 18:32



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