Finland parties

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Povzetek

Revival of Finland parties graph.

[utf8]inputenc

Read data

```
> data <- read.table("http://ablejec.nib.si/R/dat/FinlandParties.txt", header=TR
> str(data)
'data.frame':        10 obs. of  9 variables:
 $ year                 : int  1945 1948 1951 1954 1958 1962 1966 1970 1972 1975
 $ Communist            : num  23.5 20 21.6 21.6 23.2 22 21.2 16.6 17 19
 $ Social.Democrats     : num  25 26.3 26.5 26.2 23.2 19.5 27.2 23.4 25.8 25
 $ Rural.Party          : num  NA NA NA NA NA NA NA 10.5 9.2 3.6
 $ Centre.Party         : num  21.4 24.2 23.3 24.1 23 23 21.2 17.1 16.4 17.7
 $ Liberal.People.Party: num  NA NA 5.6 7.9 5.9 5.9 6.5 6 5.2 4.4
 $ Swedish.Party        : num  7.9 7.7 7.6 7 6.7 6.4 6 5.7 5.3 4.7
 $ National.Coalition   : num  15 17 14.6 12.8 15.3 15.1 13.8 18 17.6 18.4
 $ Other                : num  7.2 4.8 0.8 0.4 2.7 8.1 4.1 2.7 3.5 7.2
> data$year
 [1] 1945 1948 1951 1954 1958 1962 1966 1970 1972 1975
```

Remove data for 1975

```
> data <- data[data$year!=1975,]
> str(data)
'data.frame':        9 obs. of  9 variables:
 $ year                 : int  1945 1948 1951 1954 1958 1962 1966 1970 1972
 $ Communist            : num  23.5 20 21.6 21.6 23.2 22 21.2 16.6 17
 $ Social.Democrats     : num  25 26.3 26.5 26.2 23.2 19.5 27.2 23.4 25.8
 $ Rural.Party          : num  NA NA NA NA NA NA NA 10.5 9.2
 $ Centre.Party         : num  21.4 24.2 23.3 24.1 23 23 21.2 17.1 16.4
 $ Liberal.People.Party: num  NA NA 5.6 7.9 5.9 5.9 6.5 6 5.2
 $ Swedish.Party        : num  7.9 7.7 7.6 7 6.7 6.4 6 5.7 5.3
 $ National.Coalition   : num  15 17 14.6 12.8 15.3 15.1 13.8 18 17.6
 $ Other                : num  7.2 4.8 0.8 0.4 2.7 8.1 4.1 2.7 3.5
>
```

Replace NA with 0

```
> data[is.na(data)] <- 0
> str(data)
```

```
'data.frame':        9 obs. of  9 variables:
 $ year                 : int  1945 1948 1951 1954 1958 1962 1966 1970 1972
 $ Communist            : num  23.5 20 21.6 21.6 23.2 22 21.2 16.6 17
 $ Social.Democrats     : num  25 26.3 26.5 26.2 23.2 19.5 27.2 23.4 25.8
 $ Rural.Party          : num  0 0 0 0 0 0 0 10.5 9.2
 $ Centre.Party         : num  21.4 24.2 23.3 24.1 23 23 21.2 17.1 16.4
 $ Liberal.People.Party: num  0 0 5.6 7.9 5.9 5.9 6.5 6 5.2
 $ Swedish.Party        : num  7.9 7.7 7.6 7 6.7 6.4 6 5.7 5.3
 $ National.Coalition   : num  15 17 14.6 12.8 15.3 15.1 13.8 18 17.6
 $ Other                : num  7.2 4.8 0.8 0.4 2.7 8.1 4.1 2.7 3.5
```

Find parties to group

```
> names(data)
```

```
[1] "year"                 "Communist"
[3] "Social.Democrats"     "Rural.Party"
[5] "Centre.Party"         "Liberal.People.Party"
[7] "Swedish.Party"        "National.Coalition"
[9] "Other"
```

```
> leftId <-
+ pmatch(c("Comm","Rural","Social"),names(data))
> leftId
```

```
[1] 2 4 3
```

```
> centreId <-
+ pmatch(c("Centre","Liberal","Swedish"),names(data))
> centreId
```

```
[1] 5 6 7
```

```
> rightId <-
+ pmatch(c("National"),names(data))
> rightId
```

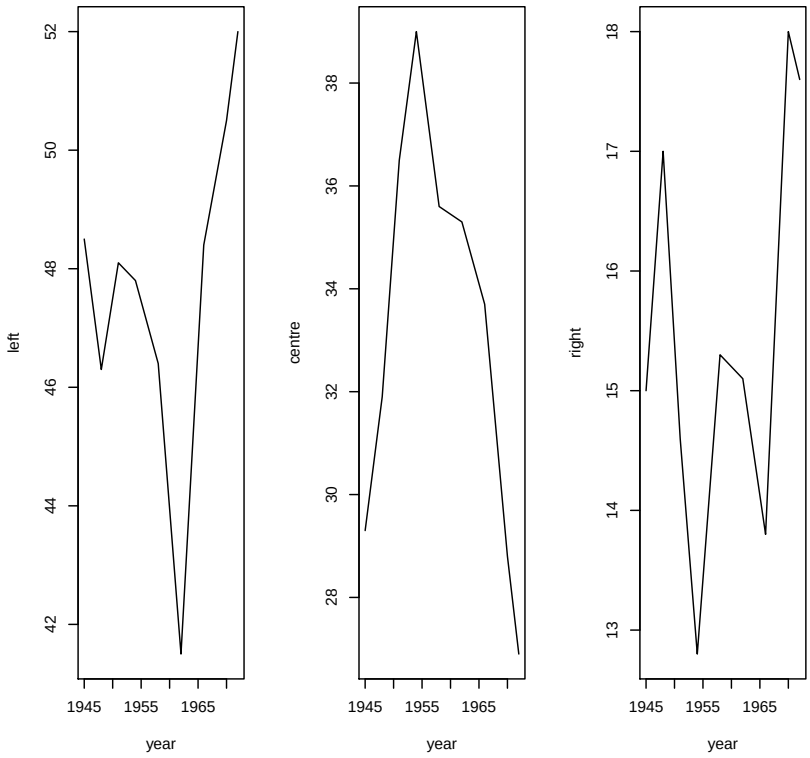
```
[1] 8
```

Prepare group data

```
> left <- apply(data[,leftId],1,sum)
> centre <- apply(data[,centreId],1,sum)
> right <- data[,rightId]
> year <- data$year
```

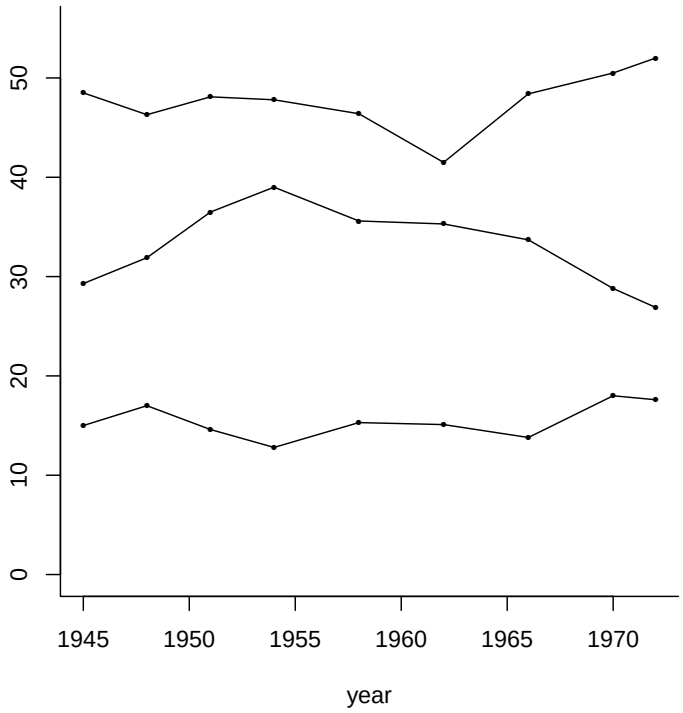
Plot the data 1

```
> oldpar <- par(mfrow=c(1,3))
> plot(year,left,type="l")
> plot(year,centre,type="l")
> plot(year,right,type="l")
> par(oldpar)
```



Plot the data 2

```
> par(mar=c(5,4,4,4))
> plot(year,left, type="o", ylim=c(0,55),
+  pch=16, cex=0.5,ylab="",bty="L")
> lines(year,centre,pch=16,type="o",cex=0.5)
> lines(year,right,pch=16,type="o",cex=0.5)
```



Models

```
> mdl <- lm(left~year)
> summary(mdl)
Call:
lm(formula = left ~ year)

Residuals:
    Min      1Q  Median      3Q     Max
-6.5763 -0.3821  0.5204  1.6270  2.9278

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) -147.31223  212.95238  -0.692    0.511
year           0.09959    0.10873   0.916    0.390

Residual standard error: 2.982 on 7 degrees of freedom
Multiple R-squared: 0.107,        Adjusted R-squared: -0.02056
F-statistic: 0.8388 on 1 and 7 DF,  p-value: 0.3902
> mdc <- lm(centre~year+I(year^2))
> mdc$coefficients
  (Intercept)          year     I(year^2)
-1.941903e+05  1.984659e+02 -5.069915e-02
> mdr <- lm(right~year)
```

Plot

```
> par(mar=c(5,4,4,4))
> plot(year,left, type="o", ylim=c(0,55),
+  pch=16, cex=0.5,ylab="",bty="L")
> lines(year,centre,pch=16,type="o",cex=0.5)
> lines(year,right,pch=16,type="o",cex=0.5)
> abline(mdl,lty=5)
> lines(year,predict(mdc),type="l",lty=4)
> abline(mdr)
> lastPoint <- cbind(left,centre,right)[length(year),]
> text(rep(1972.5),
+ lastPoint,c("LEFT","CENTRE","RIGHT"),xpd=TRUE,adj=0)
```

Final Plot