Example11-6

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Example10-4(FDL)のFirst Difference versionが今回。First Difference取ってからlagとる。

```
load("~/計量経済学演習/R data sets for 5e/fertil3.RData")
fertil3<-data
library(dynlm);library(stargazer)
```

```
## Loading required package: zoo
```

```
##
## Attaching package: 'zoo'
```

```
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
```

```
##
## Please cite as:
```

```
##  Hlavac, Marek (2018). stargazer: Well-Formatted Regression and Summary Statistics Tables.
```

```
##  R package version 5.2.2. https://CRAN.R-project.org/package=stargazer
```

Define Yearly time series beginning in 1913

```
tsdata <- ts(fertil3, start=1913)
```

First Difference model

```
res1 <- dynlm( d(gfr) ~ d(pe), data=tsdata)
```

Lagged First Difference model

```
res2 <- dynlm( d(gfr) ~ d(pe) + L(d(pe)) + L(d(pe),2), data=tsdata)
```

```
stargazer(res1,res2,type="text")
```

```
##
## ===============================================================
##                           Dependent variable:
##                     ----------------------------------------
##                                   d(gfr)
##                         (1)                  (2)
## -------------------------------------------------------------
## d(pe)                   -0.043              -0.036
##                        (0.028)              (0.027)
##
## L(d(pe))                                    -0.014
##                                             (0.028)
##
## L(d(pe), 2)                                  0.110***
##                                             (0.027)
##
## Constant                -0.785              -0.964**
##                        (0.502)              (0.468)
##
## -------------------------------------------------------------
## Observations              71                  69
## R2                       0.032               0.232
## Adjusted R2              0.018               0.197
## Residual Std. Error  4.221 (df = 69)     3.859 (df = 65)
## F Statistic        2.263 (df = 1; 69) 6.563*** (df = 3; 65)
## ===============================================================
## Note:                          *p<0.1; **p<0.05; ***p<0.01
```

pe(t-2)-pe(t-3)の**term**だけめっちゃ有意に出てる。**change of tax code**は二年後に一番影響でる。