

Econometric Analysis

Dublin's Rent Pressure Zones: Effectiveness and Policy Alternatives

1: Prerequisites

```
setwd("~/Documents/Dublin/TCD/Economics of Policy Issues A/Abgabe ")  
library(dplyr)
```

```
##  
## Attaching package: 'dplyr'  
  
## The following objects are masked from 'package:stats':  
##  
##   filter, lag  
  
## The following objects are masked from 'package:base':  
##  
##   intersect, setdiff, setequal, union
```

```
library(zoo)
```

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

```
library(ggplot2)  
library(stargazer)
```

```
##  
## Please cite as:  
  
## Hlavac, Marek (2022). stargazer: Well-Formatted Regression and Summary Statistics Tables.  
  
## R package version 5.2.3. https://CRAN.R-project.org/package=stargazer
```

```
library(lmtest)  
library(sandwich)  
library(glue)
```

The individual datasets have been cleaned and merged together in advance. However, this is not relevant for the econometrics analysis. Load in the data:

```
data_s <- subset(read.csv("Policy_Issues2.csv", header = TRUE, sep = ",", dec = ".")[-(175:234), ], sel
colnames(data_s) <- c("Year_Month", "Res", "Infl", "Int", "Une", "Dwe")
```

2: Data Transformation

Construct variable with monthly frequency for dwelling completions:

```
data_s <- data_s %>% mutate(
  Year_Month = as.character(Year_Month),
  Year_Month = trimws(Year_Month),
  date = as.Date(paste(Year_Month, "01"), format = "%Y %B %d")) %>% arrange(date) %>% mutate(Dwe_lag= d
```

Construct dummy variable for the implementation of RPZs:

```
data_s <- data_s %>% mutate(
  date = as.Date(paste(Year_Month, "01"), format = "%Y %B %d"),
  dummy = ifelse( date >= as.Date("2016-12-01") & date <= as.Date("2025-06-01"), 1, 0 ) )
```

Remove the first three observations (NAs' for Dwe_lag):

```
data <- subset(data_s[-(1:3), ])
```

3: Econometric Analysis

Construct the linear regression model:

```
LinReg <- lm(Res ~ Infl + Une + Int + Dwe_lag + dummy, data = data)
```

Convert summary to LaTeX table using Stargazer:

```
stargazer(LinReg)
```

```
##
## % Table created by stargazer v.5.2.3 by Marek Hlavac, Social Policy Institute. E-mail: marek.hlavac
## % Date and time: Fri, May 29, 2026 - 11:17:20
## \begin{table}[!htbp] \centering
## \caption{}
## \label{}
## \begin{tabular}{@{\extracolsep{5pt}}lc}
## \hline
## \hline \hline
## & \multicolumn{1}{c}{\textit{Dependent variable:}} \hline
## \cline{2-2}
## \hline & Res \hline
## \hline \hline
## Infl & $-$0.507 \hline
## & (0.326) \hline
## & \hline
```

```

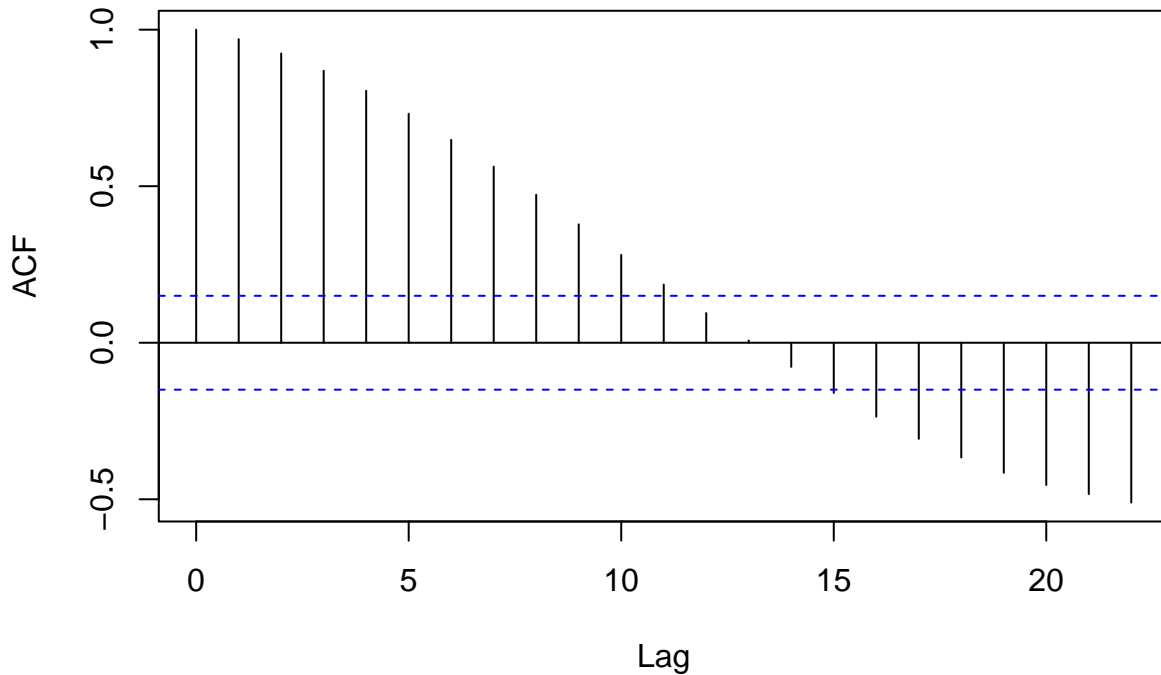
## Une &  $-\$2.397^{\{***\}}$  \$ \\
## & (0.375) \\
## & \\
## Int &  $-\$1.565^{\{***\}}$  \$ \\
## & (0.566) \\
## & \\
## Dwe\_lag & 0.011 \\
## & (0.010) \\
## & \\
## dummy &  $-\$16.189^{\{***\}}$  \$ \\
## & (2.903) \\
## & \\
## Constant &  $34.663^{\{***\}}$  \$ \\
## & (4.876) \\
## & \\
## \hline \\[-1.8ex]
## Observations & 171 \\
##  $R^2$  & 0.278 \\
## Adjusted  $R^2$  & 0.257 \\
## Residual Std. Error & 8.586 (df = 165) \\
## F Statistic &  $12.732^{\{***\}}$  (df = 5; 165) \\
## \hline
## \hline \\[-1.8ex]
## \textit{Note:} & \multicolumn{1}{r}{ $^{\{*\}}$  $p$  $<$  $\$0.1$ ;  $^{\{**\}}$  $p$  $<$  $\$0.05$ ;  $^{\{***\}}$  $p$  $<$  $\$0.01$ } \\
## \end{tabular}
## \end{table}

```

Visualize the residuals:

```
acf(residuals(LinReg))
```

Series residuals(LinReg)



-> Detected autocorrelation. Therefore, we use the Newey- test with selected lag-length = 12 for the left-sided test. Again, we want to test whether the RPZs led to a significant all-time decrease in the RPPI.

```
test <- coeftest(LinReg, vcow = NeweyWest(Linreg, lag = 12))
test_dummy <- test["dummy", "t value"]
p_left <- pt(test_dummy, df = Inf)
```

The test decision:

```
p_left
```

```
## [1] 1.225476e-08
```

```
if (p_left < 0.001){
  glue("The test result is significant at .001-level: {p_left} < 0.001") } else{
  glue("The test result is not significant at .001-level: {p_left} >= .001")}
```

```
## The test result is significant at .001-level: 1.22547633573473e-08 < 0.001
```

The test result is significant at .001-level. Controlling for other macroeconomic factors, the RPZ-policy led to a significant all-time decrease in the RPPI.